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Implementation of dual system hypothesis in speech-language pathology

Kelsey Hyde

Implementation of Dual System Hypothesis in Speech-Language Pathology

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Kelsey Hyde

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Thesis Committee:

Sarah Ginsberg, Ed.D., Chair

Wanda Kent, Ph.D.

Lidia Lee, Ph.D.

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Abstract

Over the course of the past few decades, dual system hypothesis has become the prevailing model of bilingual language development. This replaced the previously accepted unitary system hypothesis after decades of debate and research. It has also had an impact on the understanding of bilingual literacy development in children. This qualitative study investigates how this hypothesis influences and informs the work of speech-language pathologists (SLPs) who work with bilingual children. For this study, four bilingual SLPs who work with bilingual children in various settings were interviewed regarding their views and education on bilingual language development for the purpose of understanding how their perspectives on bilingual development informs their work. The four participants each had views that aligned with the tenets of dual system hypothesis, such as the understanding that inputs from multiple languages starting in infancy does not impede language development. They also all expressed the important role language input plays in a child's language development. Lastly, an unexpected, overarching theme of cultural and linguistic bias affecting the language development of bilingual language children arose from all four participants in these interviews.

Table of Contents

Introduction, Background, & Problem Statement

Bilingual Language Acquisition

Bilingualism, or the ability to use and comprehend two languages, is an ever-growing trait in populations across the globe. Bilingual households comprise roughly 20% of the American population, and it is estimated that two-thirds of the world's children are raised in bilingual households (Bialystok et al., 2009). This growth of bilingualism around the world presents many opportunities, obstacles, and questions for those studying the effects of bilingual environments, including speech-language pathologists (SLPs). Bilingualism presents several advantages to language learners, such as insights to various societies and cultures or a competitive edge in the job market of a rapidly globalizing world. Difficulties and obstacles also arise from this growth, which include implementing the proper use of code switching (knowing which language to use and when to use it), dealing with cultural prejudices, and advocating for proper education for bilingual learning (Housen et al., 2002). While each of these opportunities and obstacles are important in their own right, it is this last aspect specifically that is very important in terms of bilingual development and language acquisition.

Over the past few decades, views on bilingual language acquisition have been highly debated. More specifically, views on bilingual language acquisition during infancy have been the focus of differing perspectives. The two most popular theories for bilingual language acquisition during this period are known as unitary system hypothesis and dual system hypothesis. Dewi (2017) states that the main differences between these two competing hypotheses pertain to the order and manner in which an infant acquires the two languages. Unitary system hypothesis views bilingual development as a process very similar to that of monolingual development, as it claims that children start with one language system for both languages before differentiating

between the two later on. Dual system hypothesis claims that infants learning two languages are able to differentiate between the languages immediately in their development, thus building two language systems simultaneously (Dewi, 2017; Genesee, 2001; Lanza, 1992; Paradis, 2001; Quay, 1995). The purpose of this study is to investigate how SLPs interpret dual system hypothesis and begin to understand how this may or may not be reflected in their work.

Evolution of Bilingual Language Acquisition Theory

As previously mentioned, unitary language hypothesis has recently been met with opposition, and this arrived in the form of the dual language system hypothesis of bilingual language development in the late 1980s. Dual system hypothesis states that even though children may make syntactical mistakes during the earliest phases of bilingual language development in infancy, they are still able to distinguish between the languages very distinctly (Dewi, 2017). Specifically, initial research and writing on this topic strongly criticized the previous studies performed that led to unitary system hypothesis. One of the strongest criticisms of these studies was the fact that there was no consistent methodology between studies. In Genesee's (1989) initial re-examination of unitary system hypothesis, he claimed that many of the seminal studies did not discuss the possibility of bilingual mixing from the parents outside of the transcribed recordings for analysis. In other words, older unitary system hypothesis studies have only considered brief segments of interactions between parents and their bilingual child and not their complete daily interactions with the child. These interactions could have led to an increase in lexical mixing during recorded sessions, thus possibly affecting the researchers' judgment on language development.

This initial study by Genesee (1989) led to several more studies shortly thereafter that delved into dual system hypothesis even further, bolstering the hypothesis. Notably, work

analyzing and deconstructing unitary system hypothesis by Lanza in the early 1990s helped to develop and support a dual system hypothesis. The setup of Lanza's (1992) study was very similar to that of Volterra and Taeschner (1978), which set the basis of the unitary system hypothesis. In their original study, two sisters from an Italian-German household were only spoken to in one language by one parent and the other by the second parent. Recordings were taken of each child speaking to each parent separately, and lexical and syntactical results from this led the researchers to state that bilingual language development occurs in three stages: first, using one lexical system for both languages; second, beginning to distinguish between languages; and last, fully distinguishing between languages. Lanza, being bilingual in both English and Norwegian, focused on the bilingual language development of two young children from English and Norwegian speaking households. Similar to previous studies, each parent spoke one specific language (their native tongue) to the child, and audio recordings were then taken between the children and their parents over several months and then were transcribed. This time, however, recordings included both parents separately with the child and together with the child to further study language mixing (De Houwer, 1999; Lanza, 1992).

Upon analysis, transcription showed the use of a fair amount of mixed utterances, which are utterances that mix two languages. Lanza distinguished a difference between grammatical morphemes and lexical morphemes for both children and focused on trends of the directionality of mixing. This is to say that she focused on how many times each child mixed up grammatical and lexical morphemes between languages. Looking at these specific instances, Lanza states that much of the language mixing at this stage of development is due to socialization processes and not mistakes due to a unitary language system development. In other words, the child used mixed language as a result of dominance or preference. Therefore, Lanza's study and analysis reinforce

Genesee's idea that unitary system hypothesis is incorrect, and two language systems are developing in a child's brain from birth, as dominance or preference suggests that there needs to be a clear distinction between language systems (De Houwer, 1999).

Another study by Lanza (1992) has also heavily contributed to dual system hypothesis. Here, a similar study to those previously mentioned was performed, in which speech samples of a child (aged 2 years to 2 years, 7 months) being raised in a bilingual environment were analyzed with a focus on language mixing. This study had a heavy focus on the child's spontaneous language use with both of her parents. The context of the mixing, showing that the child was dominant in the native language of her mother and mixed in elements of that language frequently in conversations with her father in his native language, suggested that the child was code switching with her language use, thus further supporting dual system hypothesis (Lanza, 1992). Following these seminal studies and analyses, many other studies were performed to analyze lexical, syntactical, morphological, and phonological aspects of the hypothesis (Legacy et al., 2016; Mattock et al., 2010; Werker et al., 2009). All in all, the study from Lanza (1992) and those referenced that followed helped to provide evidence leading to dual system hypothesis becoming the predominate model on bilingual language learning in infants.

Lexical & Syntactical Development

Upon further analysis, dual system hypothesis has shown that both lexical and syntactical language development occur from birth in both languages. There also exists a common misconception, partially stemming from unitary system hypothesis, that not only is there one system developing for an extended period of time, but also that infants will trail their monolingual counterparts in lexical development. To investigate this hypothesis, a study by Legacy et al. (2016) analyzed the lexicons of bilingual French-English infants who were

subjected to the Computerized Comprehension Task (CCT) to analyze lexical skills. With the CCT, infants are exposed to audible words and must gaze at a matching picture to demonstrate comprehension of the audible stimulus. Results showed that bilingual infants were able to demonstrate lexical comprehension and retrieval in both languages at a level equivalent to that of their monolingual counterparts (Legacy et al., 2016). Not only does this demonstrate that infants have two lexical systems, but they also equal their monolingual counterparts in comprehension and retrieval. Syntactically, studies like that of Lanza (1992) analyzed grammatical morpheme use of bilingual infants. As previously stated, Lanza found that infants have the ability to comprehend syntactical differences between two languages, and the mixing of syntactical concepts can be explained by the child's preference and dominance of a specific language (De Houwer, 1999; Lanza, 1992). All in all, recent studies on the lexical and syntactical development of bilingual infants demonstrate that they have the capacity to equal the competencies of their monolingual counterparts, and these studies also support and fall in line with dual system hypothesis (De Houwer, 1999; Dewi, 2017; Lanza, 1992; Paradis et al., 2011; Legacy et al., 2016).

Morphological & Phonological Development

Recent research has delved more deeply into bilingual children's development in phonetics and word meaning in the realm of dual system hypothesis. This research accepts dual system hypothesis and compares the results of bilingual children's development to those of monolingual children. Specifically, Werker et al. (2009) demonstrated that morphological development in terms of word-object recognition is the same for both monolingual infants and those who are bilingual. Therefore, children were able to successfully label objects with two words from separate languages at the same rate as monolingual children. This research was

performed in a laboratory setting for two separate objects, and results found that both sets of children properly associate the correct word with the objects at the age of 14 months (Werker et al., 2009). These results not only help to break the stigma that bilingual children's morphological development is stagnated in comparison to that of a monolingual child, but it also helps to reinforce dual system hypothesis, as bilingual children were able to correctly navigate and demonstrate the correct use of two languages at an early age.

As for phonological development in bilingual infants, there seems to be some variance in findings. Work by Mattock et al. (2010) demonstrated that phonemic development is delayed for bilingual language infants. Where the average monolingual infant develops phonemic understanding by the age of 17 months, some studies have shown that it can take 20 months for bilingual infants to reach this level (Fennell et al., 2007). However, as previously alluded to, more recent studies claim the opposite (Mattock et al., 2010). Mattock et al. (2010) measured this very aspect of French-English bilingual infants (aged 17 months) in Canada. In this study, tests were performed to test a child's recognition of the /b/ and /g/ phonemes in both French and English, which differ slightly in each language. These pronunciations were randomly paired with two objects in a video. An analysis of the recognition of these phonemes was then performed with monolingual and bilingual children. The bilingual children paid attention to the screen for a much longer average amount of time than the monolingual children. According to the researchers, this indicates that bilingual infants can distinguish phonemic differences between two languages, as they recognize that the second test sounds incorrect. Thus, they were more attentive than the monolingual children. This helps to support the argument that phonemic development is equal between monolingual and bilingual children at 17 months (Mattock et al.,

2010). However, these researchers admit that these results could change for different languages and contexts. Thus, more research is still needed in this area.

Bilingual Literacy

Recent studies have investigated possible trends in bilingual literacy development. Specifically, a recent meta-analysis performed by Hammer et al. (2014) analyzed these trends after reviewing 182 peer-reviewed articles. These trends in literacy development were broken down into the following four areas: phonological awareness, emergent literacy, emergent writing, and reading, the last of which was also investigated by Genesee et al. (2006). These two pieces both confirmed dual system hypothesis (through evidence of language dominance/preference) and investigated the influence of transfer and code switching in bilingual literacy development.

Phonological Awareness

A study from Hammer et al. (2014) demonstrated that phonological awareness skills in bilingual children are transferable across languages. Furthermore, certain variables have been shown to encourage this crossover, which include vocabulary, language proficiency, language exposure, and specific phonological characteristics of the languages. The study by Hammer et al. (2014) showed that expressive vocabulary skills have crossed over between English-Spanish speaking children to influence phonological awareness, and high Korean proficiency and exposure in Korean-English speaking children has been shown to increase phonological awareness in both languages. These trends, while not able to show superior phonological development over monolinguals, do demonstrate that there certainly is a crossover between aspects and characteristics of two languages in the phonological awareness development of

bilingual children. This in turn helps to shape their literacy skills in the future (Hammer et al., 2014).

Emergent Literacy & Writing

Research on emergent literacy in bilingual children has shown mixed results on how one language might influence the other. Hammer et al. (2014) point to a correlation in a bilingual child's abilities to identify specific words and letters in Spanish and English. Other research suggests that Spanish letter and word identification is not as strong as that of English in bilingual children, but they admit that this could be due to the fact that the children attend an English-speaking school (Páez et al., 2007). For emergent writing, trends have shown that bilingual children differentiate between the two language systems when learning to write and follow a progression in writing development similar to their monolingual peers (Hammer et al., 2014). All in all, small positive trends have been found in these two areas of literacy, but more research needs to be performed to expand upon them (Hammer et al., 2014).

Additionally, another study from Sawyer et al. (2016) has investigated how teachers of bilingual preschool students implement evidence-based literacy instruction to this population. Sawyer et al. (2016) demonstrated that the implementation of linguistically responsive practices to support the literacy development in bilingual children has been incredibly effective. Here, the researchers focused on literacy instruction for English-Spanish bilingual preschoolers. These strategies included implementation of key Spanish vocabulary words in shared reading and providing storybooks in both English and Spanish in the classroom. Results led to a mean score of 4.71 on a 0-to-16-point scale. This low score indicates that teachers were minimally using bilingual options in books and posters/labels for key vocabulary words (Sawyer et al., 2016). This study, though not directly related to SLP work, indicates that there is a gap in considering

evidence-based practices for bilingual language learning in a classroom setting. This is a very important revelation, as it indicates that there is a lack of implementation of these most recent developments in research. Thus, this very well could also be the case for SLPs working with this population as well.

Reading

Studies have also shown that development in one language may have an impact on the reading development in another (Hammer et al., 2014). Specifically, this has been demonstrated between Spanish vocabulary development and word reading in English. Cognates, along with similar orthography and words with similar phonological features, clearly transferred over in reading development and had a positive impact on the child's reading proficiency. However, false cognates, or words with similar spelling but different meaning in both languages, may also transfer from first language to second language and negatively impact reading development. As for writing development, more studies need to be performed to investigate the influence of a first language on skills in a second language (Genesee et al., 2006).

Bilingualism in SLP Work

Bilingualism is not just a consideration that must be taken into account by families and educators. It also must be a major consideration for SLPs as well. The American Speech-Language-Hearing Association (ASHA), which is the certifying body for SLPs in the United States, has laid out guidelines for service delivery to bilingual children, bilingual language acquisition information, treatment recommendations, and recommendations for fostering bilingual language development in all the forms that it may take (ASHA, n.d.-a). ASHA also defines bilingualism in various ways for different populations that include simultaneous bilingualism, sequential bilingualism, dual language learners, and English language learners

(ASHA, n.d.-a). Specifically, they define simultaneous bilingualism as "the acquisition of two languages at the same time, typically with both languages introduced prior to the age of 3" (ASHA, n.d.-a, para. 1). This closely fits the definition used for the purpose of this study.

ASHA also stipulates that certain service delivery responsibilities rest upon the shoulders of SLPs, dependent on the child's proficiency. If the clinician is not bilingual or at least competent in the target language, the use of an interpreter may be appropriate (ASHA, n.d.-a). Although ASHA does not have official certification for bilingual service delivery, they do stipulate that bilingual SLPs working with clients in a language other than English must be able to select and appropriately administer assessments, administer appropriate intervention strategies, and describe the normal processes for speech and language acquisition for monolinguals and bilinguals alike (ASHA, n.d.-a). Also, regardless of whether or not an SLP is delivering services to a bilingual client in English or another target language, ASHA's Bilingual Service Delivery webpage (n.d.-a) states the following responsibility:

> SLPs are obligated to provide culturally and linguistically appropriate services to their clients and patients, regardless of the clinician's personal culture, practice setting, or caseload demographics. In providing services to bilingual individuals, SLPs consider how communication disorders or differences might be manifested, identified, or described in the client's/patient's cultural and linguistic community and integrate this knowledge into all areas of practice, including assessment, diagnosis, treatment, and treatment discharge. (para. 6)

Intersectional Influence in Dual System Hypothesis

Another consideration for those working with bilingual language learners, specifically simultaneous language learners, stems from the dual system hypothesis. More specifically

Paradis's (2001) intersectional view of the dual systems model suggests that simultaneous bilingual language learning children have two distinct phonological and language systems developing from birth that have influence on one another. Given this model, studies have been performed on the generalization of effects of phonological treatment across two languages. These studies have shown that although generalization of phonological treatment has occurred as a result of the influence that one language can have on another, bolstering intersectional dual system hypothesis, it is not exactly clear how improvements in one phonological system will definitely affect the other (Holm et al., 1997; Holm & Dodd, 2001, as cited in Goldstein & Fabiano, 2007). All in all, research has shown that certain treatment for phonological processes, such as the shortening of /s/ in English and Cantonese, are likely for bilingual children (Goldstein & Fabiano, 2007).

Lastly, ASHA has stated that there are multiple ways to introduce children to new languages and educate them. However, they do highly discourage holding back a language from a child in a bilingual household for the justification that it may stunt their language growth (ASHA, n.d.-b). Specifically, ASHA (n.d.-b) states, "Remember, children all over the world learn more than one language all the time. Learning another language will not cause or worsen speech or language problems. Bilingual children develop language skills just as other children do" (para 5).

Purpose of Study

Given the research available on bilingual literacy and bilingual language development, there are still a few questions that remain unanswered. Specifically, what type of knowledge do current SLPs in dual language environments have on dual system hypothesis and how might they implement it? To investigate these questions and look for possible trends, a qualitative study was conducted in the form of a series of interviews that was directed at bilingual SLPs who work with bilingual children (ages 0-6 years). Bilingual SLPs were chosen, as they are likely to have the unique perspective of having studied dual language acquisition and experienced it in their childhood. They also may have a higher likelihood of working with bilingual children given their background and own personal experiences. These candidates were also chosen to remain consistent in perspective and background rather than having some bilingual SLPs and some who were monolingual.

All in all, the ultimate goal of this study was to gain insight into how SLPs are informed on dual system hypothesis and implement it into their work. Literature supports dual system hypothesis, and this is reflected in recent bilingual literacy development studies. Thus, there are two language systems developing in bilingual children from birth, and this impacts phonological awareness, emergent literacy, and reading development in both languages. A piece that seems to be missing in research, however, is how this knowledge affects SLP work, and also how many SLPs are actually cognizant of this predominant hypothesis.

Research Question

The purpose of this research was to investigate how well versed current bilingual SLPs are in dual system hypothesis, and how their perspective on bilingual language acquisition may

shape their approaches to working with young bilingual children with speech and language deficits.

Methods

Research Design

To address this research question, a qualitative approach was taken. This approach fit this research question well, as SLP perspectives, histories, and practices needed to be discovered to best address this question. Guidelines outlined in Bogdan and Biklen (2007) were implemented to carry out research through interviews with SLPs in eastern Canada and the United States.

Four bilingual SLPs were interviewed via Zoom to inquire about their interpretation of dual language acquisition from birth. Interviews were open-ended and lasted between 30-60 minutes in length with follow-up interviews as needed. These SLPs were found through the implementation of purposeful, snowball sampling and recruiting emails that were approved by an institutional review board (IRB). The approval for this design can be found in the Appendix. Purposeful, snowball sampling was carried out by participants who shared this study's information with colleagues who were also bilingual. The four SLPs were all recipients of master's degrees and met national and state/provincial requirements to practice. Participants consisted of two simultaneous bilingual language learners and two sequential bilingual language learners. Participant languages included English, Cantonese, Spanish, and Korean. Three spoke English early on as children either in the home or in Pre-K or kindergarten (under the age of 6), and one started learning English at the age of 10. All four participants worked or have recently worked with bilingual children under the age of 6. The breakdown of each participant's linguistic background and work setting can be seen in Table 1.

Table 1

Participant Linguistic History and Work Setting

Name (Pseudonym)	Bilingualism Learning Experience	Languages Spoken	Work Setting
Libby	Sequential	Korean, English	Outpatient Clinic
Sarah	Simultaneous	English, Cantonese	Hospital
Amanda	Simultaneous	English, Spanish	Private Practice, Charter School
Mallory	Sequential	English, Spanish	Hospital

Procedures

The data collected for this study was qualitative in nature and focused on the experiences and viewpoints of bilingual SLPs who work with bilingual children 6 years old and younger. This data was collected through a series of interviews. SLPs were contacted to set up virtual interviews via Zoom, as face-to-face interviews were not feasible during the COVID-19 pandemic. Audio recordings of these interviews were made, and a professional transcriptionist transcribed the interviews. Transcripts were read thoroughly, coded, and organized based on themes. This coding and organization process followed guidelines and structures laid out by Bogdan and Biklen (2007). In this data analysis process, the transcripts were read several times and notes were made summating the responses of the interviewees. Their responses were then coded based on the perspectives, settings, methods and strategies that each of them observed or used. Similar codes/categories were then compared between respondents, and these coded responses were then grouped to see if there were any commonalities or differences that formed any overarching trends or themes. Specifically, the four main questions for the interview are listed below:

1. What is your view on how children from bilingual households acquire both languages?

    o Follow-up questions as needed.

2. Has the prevailing viewpoint on early bilingual language acquisition changed over your time in SLP practice?

    o Follow-up questions as needed.

3. How do you see your view on bilingual language acquisition reflected in your work with this population?

    o Follow-up questions as needed.

4. Have you heard of the term "dual system hypothesis"?

    o Follow-up questions as needed.

Participant Safety

To best ensure participant safety, all participants were offered the right to refuse to answer interview questions or participate in the study at any point during the data collection process. Prior to their interviews, participants were informed of the research design, data collection process, and data transcription. The questions that were designed for this study posed no danger or harm to any participants. Each participant signed off on an IRB-approved consent form prior to participating in this study. Lastly, the names of all participants remained anonymous in all stages of the research process, including transcription.

Results

This study was conducted to investigate bilingual SLPs' understanding of simultaneous language acquisition of children from bilingual households and how this informs their work. The following themes emerged from this series of interviews upon analysis of their interview transcriptions: Dual System Hypothesis Familiarity, Input, and Cultural & Linguistic Bias.

Theme 1: Dual System Hypothesis Familiarity

The first of the three major themes that was prevalent with each interviewee was dual system hypothesis familiarity. More specifically, each SLP understood the tenets of the dual system hypothesis and it influences their work, even if they were not familiar with the terminology. Two of the participants were very familiar with the term and knew about its background to an extent. Sarah, who speaks Cantonese and English working in a school, was very familiar with the term dual system hypothesis and its origin. Upon being asked whether or not she had heard of the term, Sarah stated, "Dual system hypothesis…is that the one where bilingual children have two linguistic systems and they use both to support language development?" Also, she recalled the term being associated with Paradis, who was a researcher who explored the concept extensively. Another interviewee, Mallory, who works with Spanish and English bilingual children in a hospital setting, also was familiar with the term. When asked the same question, Mallory said it is a hypothesis that states "the brain can actually have input from dual or multiple languages and that input is not confusing to the brain." Both of these clinicians had heard of the hypothesis and were able to explain its central concept quite well, that children have two language systems developing from the onset of birth. However, what stood out even more in these interviews was the fact that all four clinicians understood the tenets of the model and wove it into their work with bilingual children.

For example, though Amanda, an SLP working with Spanish and English bilingual children in her private practice and local charter school, had never heard of dual system hypothesis, she certainly subscribed to its tenets. She believed that multiple languages in the household do not hinder a child's language development, and this exposure and communication in multiple languages is healthy for the child's language development and is not at all confusing. Furthermore, Amanda stated:

> Parents have a really hard time understanding that a child with the language disorder, right, not just a bilingual child, but a child with the language disorder can also be bilingual. That is like probably one of the hardest conversations I have to have with parents is please stick to your first language, you're not doing them any harm, you're helping him, you're helping his brain.

Also, Libby, who is bilingual in Korean and English and works in a French-English community, stated that she was not familiar with the term dual system hypothesis. However, she also subscribes to its tenets. When asked if she has seen dominance or preference in language use in children from bilingual households, she stated, "Yes. Since birth."

Lastly, the global view described by Sarah and echoed by the other three participants also reflects subscription to the dual system hypothesis. In Sarah's description of the "ecological systems model" and how she subscribes to it, she stated how exposure to many different sources make up the language development of a bilingual child. There are multiple sources of language in the environment that all shape the child's language development, and these sources are all important in the child's ability to communicate with the members of their environment. Thus, she wants client's families to see that all exposure is important and does not inhibit a child's development. She stated, "[Parents] ask me if they should stop speaking to their child in Chinese

or Cantonese, and I will ask them…I don't give a yes or no answer because I want parents to come to this understanding themselves."

Theme 2: Input

The second theme to arise from these interviews was the importance of input in a child's development of two languages at once, or simultaneous language acquisition. Each participant stated in their own words that language development greatly depends on several factors. The most prominently discussed factor was the amount of input that children receive in their environment. In other words, development of these languages depends on the amount of exposure to each language they receive. Each SLP interviewed agreed with and implemented the tenets of the dual system hypothesis. This was reflected in their views on language dominance/preference in bilingual children, along with their views on exposure to two languages at once during the period from birth to 6 years of age.

As stated, a recurring theme that arose in conversation is the exposure of this population to multiple languages in their environment and the amount of that exposure. Amanda summarized this theme in a succinct manner. She described how varied input affects bilingual children differently and how it is not detrimental to their development by stating, "I do know that bilingualism does not equal two monolingual children." She expanded on this thought, stating:

> So I try to explain to parents, based on what I have learned about bilingualism that it is
> continuous, it's ever changing, it's a flow. And that just because your child is not
> responding to you in the second language doesn't mean that they don't know it or they're
> not considered to be bilingual.

Here, Amanda describes the process of acquiring two languages as a continuum. In other words, a child may not have expressive language abilities in one of two languages, but they may

understand this language receptively. Input from multiple languages impacts children in different ways, but it is never detrimental to their language development.

Mallory explained very similar sentiments in regards to input and exposure. Mallory firstly stated, "[Language development] completely varies based on their exposure and what those languages are. [Language development] depends on the mode of and the amount of input." The effects of input were summarized by Mallory's experiences with clients whose language development has changed due to a change in input through a new setting, such as the start of school:

> We're all in different modes and sometimes…when I ask a child and I'm interviewing about their language history and inquiring, what language they'd like to start the evaluation in or feel is their dominant language at that moment, it is oftentimes what they're most comfortable with. And what mode and level of proficiency, they're feeling at that moment in time, and it's often affected and seeing a big difference of kids who've been home all summer and been home for due to COVID and experiencing stronger receptive language still.

This highlights what both Mallory and Amanda were explaining in their viewpoints on how input affects bilingual language development in children.

Libby echoed similar sentiments when asked how children from bilingual homes acquire both languages. Libby stated:

> It depends on the kids and how the parents are using the language at home. If the parents are using 50/50 and they stick to it, I feel like the kids have a better vocabulary and language development in both.

Libby expanded upon her viewpoint that language input amounts help to shape simultaneous language development by saying that she sees dominance in one language in the home from a greater amount of input affect schooling decisions for children in her community. Specifically, she stated, "I see a lot of difficulty or a little bit of struggle when they get into school because they also have to decide 'Should we send our kid to French immersion?'" This reflects the importance of the amount of input a child before attending elementary school that Libby sees in the bilingual children with whom she works. This closely aligns with the viewpoints of Amanda and Mallory, who both emphatically and quickly stated that input was the most important factor in simultaneous bilingual language development in children.

Lastly, Sarah brought up the most in-depth analysis of this viewpoint that she shares with her fellow bilingual SLPs. She not only expressed the importance of the amount of input from parents and a family, but also delved into the importance of the input and influence from the child's community as well. Specifically, Sarah stated:

> What does their community look like? It's not just about their home environment. Yeah, they may be exposed to the home language in their home environment but what about the rest of their community because their social environment has such a huge impact on how they learn language and also how they view their language. Do they have positive views of their home language?

Sarah's viewpoint not only supports the opinion that input plays a most important part in bilingual language development, but that the community as a whole around the child is a key influence too. Specifically, she pointed out the example of Chinese neighborhoods in her community. Here, as in other communities, businesses advertise in Chinese and communicate in

Cantonese. This immersion leads to additional, and more varied input, which in turn aids language development in that language. Specifically, Sarah went on to mention:

> It's the whole neighborhood is all Chinese restaurants, all Chinese supermarkets and different kinds of Chinese organizations. They have their own community and advocacy and cultural liaison and a lot of the children I saw, weren't just bilingual in that their parents speak Cantonese and the rest of the neighborhood is English. They are really fully immersed in Chinese and the culture and the language.

It should be stated though, that this applies to both sequential and simultaneous language learners, as Sarah stated that in the local Chinese community, "there was a huge Chinese immigrant population so a lot of the children were sequential bilingual because they had been exposed to Chinese."

Moreover, Sarah went on to describe this communal approach to language development in an in-depth manner. She labeled this overall view as stemming from the "ecological systems model." She claimed that this model is often used in other disciplines when it comes to assessment and treatment. Sarah summarized this model, saying:

> I always try to put the individual into context and so I often think about the ecological systems model where there are circles and circles and circles. So if a child is in that small circle within the context of the home environment, is another circle, with grandma, grandpa, mom, dad, siblings and then another circle outside of that is like aunts, uncles, cousins who they interact with in the home language or English and then a circle after that is the school- that contributes to the bilingual child's language skills.

This model factors in all of a child's communication partners in their environment in a hierarchical system. She explained how this model depicts a full picture of a bilingual child's

language development. Sarah stated how it is a model that encompasses all language inputs for a child in various circles, like a web, and that she implements when working with bilingual children.

All in all, each of the bilingual participants in this study stated that they believe input and its amount and variance to be the most important factor in bilingual language development. Libby, Amanda, Sarah, and Mallory all stated that the amount of exposure a child has to each language shapes their development of two languages greatly. Furthermore, these SLPs all echoed that no child is the same when it comes to bilingual language development, simultaneous or sequential, as a result of this input exposure. Other factors such as overlapping sound systems in the two languages also played a key role in their development in the views of these SLPs, but the most important and repeatedly discussed variable was input quantity. This came in the form of observations of clients and the implementation of an ecological systems model in Sarah's specific case. This was the most evident similarity among the SLPs interviewed, but there was still one other commonality that arose from these interviews.

Theme 3: Cultural & Linguistic Bias

The last theme that arose during this series of interviews was the impact of bias on bilingual language development. This bias shows itself in the form of discouragement of the use of a home language that is not English. This bias has negative impacts on the language development of bilingual children, especially those with impairments. According to the SLPs interviewed, this bias comes from various sources, ranging from health professionals to educators to other members of the child's community. The effects of this bias extend beyond bilingual language development. It can also have an impact on the preservation of culture,

tradition, and pride. The four SLPs interviewed all provided insightful viewpoints on how this bias is present in their communities today. They explained the various impacts of bias as well.

Sarah mentioned various effects that bias may have on a bilingual child. Moreover, she mentioned how the privilege of some monolingual members of the community may blind them to the experiences of those from bilingual members of the community. Sarah stated, "This could range on a spectrum from maybe lack of education, lack of awareness, acknowledging one's own privilege and trying to put yourself in someone else's shoes and someone else's perspective." Here, she is conveying how some members of a child's community may not be considering the experiences of bilingual children and their families either in their professional or day-to-day lives. She continued on, stating, "There are tons of privilege- privilege in race, language…I've spoken English all my life so I don't know what it's like to get a health pamphlet and not be in my native language, right?"

Sarah further elaborated on how this bias can in some cases lead to shame and a decreased motivation to use or learn a certain language. She expressed that there is bias that still exists to conform to English or only use one language with a child, and that this bias can affect how these children and their families view their use of languages other than English. Specifically, these attitudes can be negative, and Sarah summarized this, saying, "I feel like we need to take that into consideration when thinking about bilingual children's language development, or maybe negative views especially given the political climate that we are in. What are their attitudes regarding their language?" Additionally, aside from political or cultural views influencing attitudes, Sarah expressed that professional viewpoints still to this day cause negative views on the use of two languages around a young child in a bilingual home. She stated that this viewpoint on exposing a child to only one language is still prevalent, which

indicates that unitary system hypothesis is still believed to be true by a large amount of health and education professionals. More precisely, Sarah stated in regards to staying informed on current literature and accepted theories:

> We still are not keeping up with all of these changes. There are still a lot of clinicians, teachers, healthcare practitioners who still say don't speak the home language to your child because it will confuse them and don't read the latest literature or are not keeping up with the CEU webinars that are available on ASHA.

Amanda expanded upon this viewpoint on how bias can be detrimental to language development and cultural preservation in this population of bilingual children. In explaining how bias appears in her work with bilingual children, Amanda stated, "I find that parents often times choose the academic language over their home language, simply because they feel that they're doing their kids a disservice by continuing to speak and push this language that they're not hearing in school." Thus, in her experience, Amanda also sees that the "home" language is also given up often in favor of English. She also echoed Sarah in saying that she has seen other professionals, such as pediatricians, tell parents of bilingual learners to "stop speaking to them in another language you're confusing them."

A key piece that Amanda also touched on in regard to the bias she sees in her work with bilingual children is the possible loss of culture or traditions. Amanda stated:

> You're not just giving up a language you're giving up a social identity and a community. You're giving up the child's ability to understand traditions, to understand the language that comes with food and culture. And not only that, but being able to communicate with other members of the family that may not live in the United States, and that it's a huge

disservice that I think a lot of speech pathologists don't think of when they force a child to only participate in therapy in English.

Here, Amanda expressed how a culture may be diminished or lost if this bias leads to less input in the non-English language in the home. This extends beyond tradition to possible communication partners, like relatives and friends who might not live in the United States. This not only prevents traditions from being passed through the generations, but it may even cut off ties and the ability to connect with loved ones.

Libby mentioned that she supports exposing children to both languages in the home when parents ask her if they should only use one language. She cites that "there is no research that says it's bad for kids." Mallory stated, "I think that oftentimes it's overlooked, and we've been dealing with that in our practice of having a good intake from the case managers or whoever's doing the case intake to really figure out what is." She expanded upon this stating that she sees certain formal evaluations for autism not account for cultural differences, which in turn could lead to inaccurate results upon assessment. On the whole, each participant has said that they have seen cultural bias when it comes to bilingual language acquisition in children. This bias comes in the form of discouragement against nonnative languages and inaccurate assessments and diagnoses. These biases and lack of awareness/implementation of current literature can harm not only a child's language development, but also their preservation of traditions, culture, and connections with loved ones as well.

Discussion

The data from the participants in this study suggested that there is a strong alignment between their clinical approach to working with bilingual children and the dual system hypothesis of bilingual language development. The three themes that emerged from the data were Dual Language Hypothesis Familiarity, Input, and Cultural Bias.

Dual Language Hypothesis Familiarity

All four of the bilingual interviewees were in alignment with the pillars of the dual system hypothesis. Even though not all four were familiar with the term, they all understood and implemented its ideals in their work. Participants in the study reported that they tell patients' families that the use of multiple languages in the home is beneficial to language development and does not impede it. By that, they mean that exposure to multiple languages will not just lead to a jumble of linguistic knowledge in one system in the child's mind. Instead, these linguistic inputs are sorted into two distinct systems, and any cross use of language shows dominance in one particular language and not confusion. Sarah's subscription to the ecological systems model further demonstrates how she views inputs from multiple languages in one's environment being healthy, as these inputs in different circles will not confuse the child.

As discussed, dual system hypothesis states that exposure to multiple languages at a young age will not confuse the child, as mistakes between languages at this stage are not due to confusion but rather the child playing with the language or showing preference or dominance (Lanza, 1992). The four interviewees from this study all were in accord with dual system hypothesis and the research that supports it, such as work from Lanza (1992) and Genesee (2001). This is seen through the advice that all four give parents and families of young bilinguals. Each of the bilingual SLPs stated that they encourage these families to expose their

children to inputs from multiple languages, as it will not confuse them or cause a language delay. All in all, the testimonials from the bilinguals SLPs interviewed in this study show that each of them have an understanding of the dual system hypothesis, and it influences their practice and the advice they give to bilingual families.

Amanda expressed how she implores parents of children in bilingual households to continue to expose the child to multiple languages. This practice falls in line with the dual system hypothesis. Additionally, while Libby did not outright recognize the phrase dual system hypothesis, she too subscribes to its tenets. Libby tells clients that current literature states that exposing a bilingual child to multiple languages will not harm them. In a similar vein as Amanda, Libby makes sure to inform all bilingual families of this advice from current literature. Thus, though Libby did not recognize the hypothesis by name, she understands that there are two language systems developing at once in the child's brain and that the child will not be confused or face a language delay if exposed to multiple languages. Libby and Amanda both recognize that children from bilingual households develop two linguistic systems from the onset of birth, which falls in line with the tenets of the dual system hypothesis (Genesee, 2001).

Similarly, Sarah stated that she wants parents to come to an understanding that multiple inputs are safe and will not confuse a child. She elaborated by saying that multiple sources of language in various forms from a child's environment all make up and influence their language development. This ecological system is beneficial to the child's development and is not a hindrance. This demonstrates that Sarah's view on the ecological systems model aligns with the tenet of the dual system hypothesis that children's language development is not hindered but rather enhanced when exposed to multiple language inputs at an early age (Genesee, 2001).

Input

Participants had varied yet similar views on bilingual language development for children under the age of 6. The participants stated how greatly input variance affects the language development of this population. They all agreed that language development depends on just how much input these children receive from the environment around them. As Sarah explained in describing the environmental systems model, children are impacted not only by input from their communication partners, but also from their community in the form of businesses, advertisements, and media. In all, all four were quick to state their views on how crucial they feel the amount of input received by these children is for their bilingual language development.

Amanda stated that bilingual language development is a flow and continuum that is shaped by the amount of input that these children receive. Looking back at a quote from Amanda, she describes the process of dual language acquisition as "continuous, it's ever changing, it's a flow." What is so intriguing from this statement is how Amanda views bilingual language development as being on a continuum. This continuum depends on various factors such as input and their environment. Furthermore, this varying input leads to bilingualism showing itself in different forms in this population. This relates back to a previously mentioned study from Paradis (2001). This study on the intersectional influence of one language having an impact demonstrates that even though two distinct language systems develop in a bilingual child's brain from birth, each child has a unique cross influence between languages. Also, each child is exposed to a unique amount of input from their environment and culture, which according to the SLPs interviewed, greatly influences the language development of bilingual children.

Through Mallory's experiences, including those from this current pandemic, she has seen how input has affected language development and use in children. She stated that the summers off from school, along with the fact that many children are spending much more time at home

(due to COVID-19), has affected their language development. Specifically, they may be receiving much more input from one parent if that parent is the one who looks after the child all day. Consequently, the child may be receiving less language input from the other parent or from their school (when it comes to English). As a result, the child may present with stronger abilities in one language versus another, especially if that language that is experiencing less of an input is English. This highlights the importance of input in the development of a child's linguistic system or systems.

Going back to a hypothesis that Sarah mentioned, the ecological systems model expands upon the dual system hypothesis to view a child's language development as result of all the interactions with language they have in their community. This ecological view on language development stems back to studies on psychological development by Bronfenbrenner (2009). In his research, Bronfenbrenner states that a child's development, or a change in one's interaction with and perception of their environment, depends on their interaction with their ecological environment. This ecological environment is made up of levels, much like Sarah mentioned, like a web. At the center is the child, and the first circle is the immediate family, which is encircled by a part of the environment, like friends, that is one step removed from family. These circles keep stemming outward to include every aspect of input and influence from the child's environment (Bronfenbrenner, 2009). While the ecological systems model is not mentioned in ASHA's guidelines on bilingual service delivery (ASHA, n.d.-a; ASHA, n.d.-b), it could definitely be an aspect to consider when working with bilingual children as it complements the dual system hypothesis.

Cultural & Linguistic Bias

Lastly, another major theme that arose was how the four bilingual SLPs interviewed see bias against multiple language inputs for this population. Amanda and Sarah both stated how bias, be it bias stemming from politics or not being well-versed in the latest literature, may lead to shame in using a language other than English or even the erasure of cultural traditions. The use of a language other than English may be discouraged by monolingual members of the community, which may in turn make the preservation of language, and possibly even cultural traditions, more difficult. Sarah stated that she sees other professionals, including clinicians and teachers, who do not believe that it is healthy for language development to expose children to more than one language. More specifically, these professionals discourage the use of the "home" language, which refers to the language used in the home that is not English. Thus, not only is this bias based on outdated literature, it is also bias that has linguistic and cultural prejudice. She also stated that privilege in monolinguals often blinds them to the experiences of the bilingual members of their community. This privilege and lack of acknowledgment of another's experiences is something that is found all too often for bilingual families. This is biased thinking, and it affects these children in a myriad of ways, which may include shame in language use. Mallory also stated that this cultural bias, or bias toward English, is reflected in some formal evaluations for autism which do not consider linguistic and cultural differences. These biases could not only discourage bilingual input in the home but also lead to the loss of cultural traditions, the loss of family connections, and improper diagnoses in speech and language development.

Linguistic bias has shown itself in the United States through government legislation and oversight over the course of the last two decades. Lindholm-Leary (2015) states that the English-only movement and mentality that started in the early part of the first decade of the new

millennium hindered bilingual language instruction. This included the fact that the federal Office of Bilingual Education and Minority Language Affairs (OBEMLA) was formally changed to the Office of English Language Acquisition (OELA). The No Child Left Behind Act of 2001 also demonstrated bias toward English language acquisition within this English-only mentality. This act stressed the importance of English proficiency and literacy in American children with no considerations for other native languages (Lindholm-Leary, 2015). Thus, language bias presents itself in this country in the form of federal initiatives to shift towards English language acquisition and not bilingual language acquisition. However, these English-only initiatives have long been known to be detrimental to the development of bilingual children. Padilla et al. (1991) found that English-only programs and initiatives lead to negative consequences for social relations, psychological development, and academic performance for those with limited proficiency in English. Thus, the bias towards English and against home languages seen from or observed by all of the SLPs interviewed is supported by federal changes and legislature that has been shown to have detrimental effects on the development of a bilingual child (Lindholm-Leary, 2015; Padilla et al., 1991).

Bias towards English-only models of education not only has effects on preserving language but also preserving culture. This is reflected in views on endangered languages from the United Nations Educational, Scientific, and Cultural Organization (2017), known as UNESCO, that discuss the gravity of endangered languages. UNESCO (2017) states:

> Every language reflects a unique world-view with its own value systems, philosophy and particular cultural features. The extinction of a language results in the irrecoverable loss of unique cultural knowledge embodied in it for centuries, including historical, spiritual

and ecological knowledge that may be essential for the survival of not only its speakers, but also countless others.

Thus, when an individual or community loses culture, they are also risking the loss of traditions, values, and history. These fears were echoed by the SLPs interviewed. An example of this concern arose when Amanda stated that the loss of a language leads to the loss of a culture, set of communication partners, or even a community for a young child, and these concerns are echoed by the United Nations (UNESCO, 2017).

As discussed by Sarah, this linguistic bias could lead to both shame in the child and embarrassment about the use of the home language, and it could also lead to a partial erasure of culture. In addition to the possible shame and negative effects that one may experience as a result of bias, the bias demonstrated by professionals simply does not align with guidelines and expectations laid out by ASHA. Specifically, when it comes to service delivery for bilingual children, ASHA has stated, "SLPs are obligated to provide culturally and linguistically appropriate services to their clients and patients, regardless of the clinician's personal culture, practice setting, or caseload demographics" (ASHA, n.d.-a). Concerning bilingual language input ASHA stipulates, "Learning another language will not cause or worsen speech or language problems" (ASHA, n.d.-b). Considering these expectations from ASHA, professional advice from professionals that warns against exposing children to multiple languages, as not to confuse them, is not only incorrect in terms of the negative impact it can have on cultural pride, but it is also an incorrect recommendation from the body responsible for certifying SLPs in the United States.

Limitations & Delimitations

One possible limitation of this study could be the type and degree of deficits or disorders of the children with whom the participants work. These possible variations could have led to very different experiences and viewpoints for the participants. For instance, dual language acquisition may have differed for children with autism spectrum disorder and children with Down syndrome, which could greatly influence how the clinician views dual language acquisition and their implementation of dual system hypothesis in their work.

A delimitation of this study would be the sample size. For this study, four SLPs were contacted and interviewed, which was a relatively small sample. A larger sample size would bolster any trends that arose in a study such as this. The geographical scope of the research focusing solely on SLPs in North America could limit viewpoints on dual language acquisition. The variance in experiences in education and practice may be limited based on this geographic scope in comparison to those of participants from a larger study that may include several regions or countries. Another possible missing piece could be the viewpoints of monolingual SLPs who work with bilingual families. Their viewpoints could very well be different from their bilingual counterparts as a result of their personal experiences and education.

Implications for Future Studies & Conclusion

Hypotheses on language development for children from bilingual households have changed over the course of the last few decades. The main shift in the understanding of bilingual language development in children has transformed from a model of one language system from birth that diverges into two parts at a later age, to a model of two distinct linguistic systems from the onset of birth (Dewi, 2017). This viewpoint should not only impact the work of linguists, but SLPs and other members of a child's care team as well. The participants of this study have demonstrated that they have a strong understanding of this current theory, and they take it into consideration when advising the families of children from bilingual households. This study also sheds light on the importance of exposing bilingual children to multiple inputs as much as possible, as the SLP participants all stated that it was the most important factor for a bilingual child's linguistic development. Additionally, the participants touched on bias that these families experience from different institutions, which include but are not limited to suggestions from other professionals that exposure to multiple inputs may confuse a child and stunt their linguistic development.

Given the results of this study, there are many different questions that have arisen. First of all, given that all of the SLPs interviewed have an understanding of the dual system hypothesis based on their experiences, how do their monolingual counterparts view bilingual language development? This could be interesting to see, as multiple participants in this study indicated that some of their monolingual colleagues, some of whom are SLPs themselves, still tell clients and their families that exposure to multiple languages at a young age is detrimental to the child's language development. Also, a larger quantitative study could be conducted, through the form of a survey, to find out how the dual system hypothesis affects the work of SLPs with

bilinguals. This would be very informative, as this could support and bolster the findings of this study on a broader, quantitative level. Another study focusing on both older and younger SLPs could be performed to highlight a possible difference in bilingual language development education. This could possibly bring to light a gap in education between generations of SLPs, as the prevailing viewpoint supported by evidence-based research has changed over the course of the last forty years.

To conclude, SLPs are upheld to numerous codes of ethics that ensure the rights of those they serve along with the moral upstanding of the profession. Specifically, ASHA's code of ethics stipulates that "individuals shall not discriminate in the delivery of professional services or in the conduct of research and scholarly activities on the basis of race, ethnicity,…culture, language, or dialect" (ASHA, 2016, Principle I). Also, ASHA's code of ethics states that SLPs "shall use independent and evidenced-based clinical judgment, keeping paramount the best interests of those being served" (ASHA, 2016, Principle I). Thus, SLPs must look out for the well being of their clients, regardless of their background, and clinicians must also follow best evidence-based practices in their work. The participants of this study all follow these ethical codes by preserving the well being of their bilingual clients' linguistic development by encouraging varied input, encouraging and advocating for cultural preservation, and implementing evidenced-based research, including the dual system hypothesis. However, according to these participants, the same may unfortunately not be true for all other professionals in the field.

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APPENDIX: IRB Approval Letter

IRB #: UHSRC-FY19-20-323
Title: Bilingual Language Acquisition & Implementation
Creation Date: 6-2-2020
End Date:
Status: Approved
Principal Investigator: Kelsey Hyde
Review Board: University Human Subjects Review Committee
Sponsor:

Study History

Submission Type	Initial	Review Type	Exempt	Decision	Exempt

Key Study Contacts

Member	Sarah Ginsberg	Role	Co-Principal Investigator	Contact	sginsberg@emich.edu
Member	Kelsey Hyde	Role	Principal Investigator	Contact	khyde7@emich.edu
Member	Sarah Ginsberg	Role	Primary Contact	Contact	sginsberg@emich.edu

Initial Submission

Complete this form for a new human subjects project submission. For multi-site studies, contact the Office of Research Compliance at research_compliance@emich.edu or 734-487-3090 prior to completing this application.

Each question must be specifically answered or your application will be returned without review. Do not copy and paste language from other documents into the application.

All items with red stars are required and must be completed in order to submit. Save changes frequently.

Questions? Contact human.subjects@emich.edu or 734-487-3090.

*required

Is your study any of the following:

- **Exclusively** a program evaluation (data collected for program improvement purposes)?
- Journalistic activity?
- Oral history **without** the purpose of extracting and generalizing themes from the oral histories?
- Biography?
- Literary criticism?
- Historical scholarship?

Note: Mark Yes if your data will only be used for the purposes above.

    Yes

✓ No

Affiliation:

Check one

Faculty/Staff

✓ Graduate Student

Undergraduate Student

Student Type

Doctoral Student

✓ Masters Student

Project Type

✓ Thesis/Dissertation

Graduate Project

Principal Investigator

Name: Kelsey Hyde
Organization: Eastern Michigan University

Address: , Ypsilanti, MI 481972212
Phone: 8102883434
Email: khyde7@emich.edu

Briefly describe your qualifications to conduct the study.

Students: Please include a brief statement about how your adviser will mentor you on this project.
My advisor is helping me to shape research questions to best address my thesis. She is also guiding me on best qualitative research practices, and we will be discussing the research process every step of the way.

Human Subject Training

Attach your human subject training (CITI) certificate. CITI training must have been completed in the past THREE YEARS in order to be valid.
citiCompletionReport8890104.pdf

Attach a CV or resume here.

Kelsey Hyde Resume (01092020).docx

Primary Contact

Select someone who can be contacted about the study in the absence of the principal investigator. If you do not have a primary contact, please list yourself.
Name: Sarah Ginsberg
Organization: Special Education
Address: Special Education 128 Porter Bldg, Ypsilanti, MI 481970000
Phone: 7344872722
Email: sginsberg@emich.edu

Faculty Advisor

---

*Students are **required** to have a faculty member as a Co-Principal Investigator. Choose your faculty advisor from the list below.*
Name: Sarah Ginsberg
Organization: Special Education
Address: Special Education 128 Porter Bldg, Ypsilanti, MI 481970000
Phone: 7344872722
Email: sginsberg@emich.edu

Attach your faculty advisor's human subject training (CITI) certificate.

CITI certrificate 2020.pdf

Research Personnel

Add all other investigators who will either have contact (in-person or virtual) contact with human subjects or who will have access to identifiable data.

If your research personnel are not affiliated with Eastern Michigan University, list their names, titles, and affiliations below.

Attach human subject training (CITI) certificates for each member of the study staff.

Hyde Thesis Proposal Form Final.docx

Does this study involve research sites or locations other than EMU?

Note: This does not apply for survey studies in which surveys are completed on the subjects' personal computers.

  Yes

✓ No

Conflict of Interest

Do you or any study staff members have a potential conflict of interest for this project?

  Yes

✓ No

Is this project funded?

Choose No if you have department or internal funds to conduct your study (including a Faculty Research Fellowship or a Summer Research Award).

  Yes

  Funding is pending

✓ No

*required
Abstract

Provide a brief abstract of your study procedures in non-technical terms. Limit this abstract to no more than 300 words.

Over the course of the past few decades, dual system hypothesis has become the prevailing model of bilingual language development. This replaced the previously accepted unitary system hypothesis after decades of debate and research. It has also had an impact on the understanding of bilingual literacy development in children. This project proposes a research study investigating how speech-language pathologists (SLPs) in bilingual communities approach work with children in all domains, and how dual language hypothesis informs their work with this population.

*required
Purpose

In one or two sentences, what is the purpose of your study?

The purpose of this study is to investigate the knowledge of dual system hypothesis of current bilingual SLPs who work with bilingual children, and how they implement (or do not implement) the tenets of this system. There currently exist gaps in research as to how well this hypothesis is implemented in SLP practice.

*required
Study Procedures

Describe step-by-step, very clearly, all of the research procedures that will occur during your project. Please include the following information:

1. Describe your subject population(s).

2. What procedures will be conducted on the subjects? If you have two or more groups of subjects, please describe in detail the procedures for each group.
3. Specify any experimental procedures.
4. How long will participation last? If the study will take place over multiple days or there are multiple procedures, please specify the amount of time per day or procedure.

If you think it helps with clarity, please upload a chart or timeline under Study Measures below.

1. Four to five bilingual SLPs (if possible) in from southeast Michigan, including the greater Midwest and Eastern Canada, will be contacted to set up a virtual interview (via Zoom) to inquire about their interpretation of dual language acquisition from birth. These SLPs will be found through the implementation of purposeful, snowball sampling, with the assistance of Dr. Sarah Ginsberg. Emails will be sent to known bilingual SLPs through clinics, schools, and colleagues offering an opportunity for participation in this study. Specifically, SLPs from school districts with highly linguistically diverse populations in this region will be contacted for participation in this study. If they are interested in participating, they will be directed contact me via email. They will also be asked to pass requests along for this study, given that they may well know other bilingual SLPs that work with children.

2. The data collected for this study will be qualitative data on the experiences and viewpoints of bilingual SLPs who work with bilingual children six years old and younger, which will be collected through a series of interviews. These SLPs will be contacted to set up virtual interviews via Zoom, as face-to-face interviews will be difficult during the COVID-19 pandemic. Audio recordings of these interviews will be made, and a professional transcriber, with knowledge of HIPAA and FERPA, will transcribe the audio recordings.

3. No experimental procedures will be performed upon participants (only interview/survey questions).

4. Participation will up to 90 minutes per participant, and each of the four to five participants may be interviewed up to twice for the same amount of time (90 minutes).

Study Measures

Provide a brief description of each measure/assessment/survey you plan to use.
The four main questions for the interviewees are listed below:

1. What is your view on how children from bilingual households acquire both languages?

-Follow-up questions as needed.

2. Has your viewpoint on early bilingual language acquisition changed over your time in SLP practice?

-Follow-up questions as needed.

3. How do you see your view on bilingual language acquisition reflected in your work with this population?

-Follow-up questions as needed.

4. Have you heard of the term "dual system hypothesis"?

-Follow-up questions as needed.

Attach all measures, assessments, and surveys.

For students conducting surveys and interviews: You must attach a completed Survey Development Checklist.
Hyde Signed.pdf

*required

Does your study use drugs or biological products?

Yes

✓ No

*required

Does your study use medical devices?

Yes

✓ No

Exempt studies are not subject to the Common Rule (45 CFR 46), federal regulations regarding the protection of human subjects in research.

They are, however, subject to Eastern Michigan University policies and procedures. As such, the UHSRC requires that Exempt research be submitted for review.

According to UHSRC policy, investigators may **not** make their own Exempt determination. Exempt determinations may *only* be made by the UHSRC or their designees.

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*required

All of your research activities must fall into **at least** one of the following categories.

Check all that apply.

*If your research activities do not fall **exactly** into the categories below, click "None of the above" and complete the sections appearing in the left menu.*

1. Research conducted in established or commonly accepted educational settings, involving normal educational practices that are not likely to adversely affect students' opportunity to learn or the assessment of educators who provide instruction.

✓ This includes research on regular and especial education instructional strategies and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

2. Research that only includes interactions involving educational tests, survey procedures, interview procedures, or observations of public behavior if **at least one of the following criteria is met**:

a. The information obtained is recorded by the investigator in such a manner that the subjects cannot
readily be identified, either directly or through study IDs that are linked to identifiers;

✓ b. Any disclosure of the subjects' responses outside the research would not reasonably place

the
 subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing,
 employability, educational advancement, or reputation; **or**

 c. The information obtained is recorded by the investigator such that subjects can be identified,
and
 the UHSRC has reviewed the privacy and confidentiality provisions in the study.

 *Note: This category is only applicable to adults age 18+. Educational tests,
 survey procedures, interview procedures, or observation of public behavior
 involving minors **cannot** be Exempt **except for** educational tests and observation
 of public behavior if the investigator's presence will not in any way affect the
 behavior of the research subjects in conditions a and b above only. Condition c
 above can never be Exempt if the research involves minors.*

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3. Research involving benign behavioral interventions using **adult** subjects provided that the
subject provides consent/permission to participate beforehand and at least one of the following
criteria is met:

 a. All information collected about the subject (research data) is anonymous (not directly or
indirectly
 identifiable).

✓ b. Any disclosure of the subjects' data would not reasonably place subjects at risk of criminal or
 civil
 liability or be damaging to the subjects' financial standing, employability, educational
advancement,
 or reputation; **or**

 c. The information obtained is recorded by the investigator such that subjects can be identified,
and
 the UHSRC has reviewed the privacy and confidentiality provisions in the study.

 *Note: Benign behavioral interventions are brief in duration, harmless, painless,
 not physically invasive, not likely to have an adverse lasting impact on the
 subjects, and the investigator has no reason to think the subjects will find
 the interventions embarrassing or offensive. Research involving deception cannot
 be Exempt unless the subject authorizes the deception beforehand during the
 consent/permission process.*

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4. Secondary research for which consent is not required.

This category can include identifiable private information or identifiable biospecimens provided that
   at least one of the following criteria is met:

   a. The information or biospecimens are publicly available;

   b. The information is recorded by the investigator so that subjects cannot be directly or indirectly
        identified (i.e., the investigator's data set is anonymous), the investigator does not contact the
        subjects, **and** the investigator will not re-identify subjects;

   c. The research is subject to HIPAA regulation and conducted under a HIPAA-covered entity; **or**

   d. The research is conducted by, or on behalf of, a Federal department or agency using government-
        generated or government-collected information obtained for non research activities.

5. Research and demonstration projects which are conducted by or subject to the approval of Federal department or agency heads, and which are designed to study, evaluate, or otherwise examine:

   a. Public benefit or service programs;

   b. Procedures for obtaining benefits or services under those programs;

   c. Possible changes in or alternatives to those programs or procedures; **or**

   d. Possible changes in methods or levels of payment for benefits or services under those
        programs.

   *Note: All projects under this Exempt category must be published on public
   list maintained by the Federal department or agency before any human subject
   research begins.*

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6. Taste and food quality evaluation and consumer acceptance studies, if:

   a. Wholesome foods without additives are consumed; **or**

   b. A food is consumed that contains a food ingredient at or below the level and for a use
        found to be safe, or agricultural chemical or environmental contaminant at or below the
        level found to be safe, by the Food and Drug Administration or approved by the
        Environmental Protection Agency or the Food Safety and Inspection Service of the U.S.

Department of Agriculture.

7. Storage or maintenance of identifiable private information or identifiable biospecimens for secondary research *for which broad consent is required*.

The UHSRC must conduct a limited review of the broad consent form, the privacy and confidentiality protections, and any additional protections for vulnerable subjects.

Note: This category applies only to creating and maintaining a repository of identifiable data, not to the analysis or other uses of such data. At this time, the UHSRC does not support the use of broad consent for administrative reasons. Contact the Office of Research Compliance at research_compliance@emich.edu *with any questions.*

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8. Secondary research for which broad consent is required. This category involves the *research use* of data stored and/or maintained using broad consent.

The UHSRC must conduct a limited review to make sure that the purpose of the research is within the scope in the broad consent, of the privacy and confidentiality provisions for the data. In addition, the study plan should not include returning individual results to subjects.

Note: This category applies only to analysis of data from a repository of identifiable data, not to the creation or maintenance of such a repository. At this time, the UHSRC does not support the use of broad consent for administrative reasons. Contact the Office of Research Compliance at research_compliance@emich.edu *with any questions.*

None of the above.

*required
Exempt Documents

Attach the following documents in MS Word:

1. *Consent form*
2. *Parent information letter (if applicable)*
3. *Assent form (if applicable)*
4. *Recruitment scripts, email texts, letters, etc. (if applicable)*

Consent_Doc_Hyde.docx

Recruiting_Email.docx

Consent_Doc_Hyde_Revised_12_june_2020.docx

Informed_Consent_Hyde_15_June_2020.docx

Exempt Documents

Attach the following documents in MS Word:

1. *Consent form*
2. *Recruitment scripts, email texts, social media texts, letters, fliers, etc.*
3. *Study measures: surveys, interview questions, educational tests, focus group questions, etc. (if not attached in Study Abstract and Summary section)*

Consent_Doc_Hyde.docx

Recruiting_Email.docx

Consent_Doc_Hyde_Revised_12_june_2020.docx

Informed_Consent_Hyde_15_June_2020.docx

Describe the consent process

Explain how, when, where, and by whom consent will be obtained. For studies involving minors, include a description of how, when, where, and by whom assent will be obtained.
Consent for all participants will be obtained electronically through signed consent forms scanned and sent via email prior to the collection of data/interviewing.

Will subjects be compensated for participation?

Note: Compensation does not include refreshments provided during participation.

       Yes

✓ No

Please see the EMU Board of Regents Policy 6.4.4: [Research Data Retention](#)

*required
Explain how you plan to protect subject privacy.

Privacy refers to the individual person and *not* the data. .
All participants will be interviewed in a private Zoom meeting on a secure server. Both the server and the Zoom video conference will require passwords to attend to ensure privacy. Also, Zoom conferences will be limited to one interviewee at a time to also ensure privacy.

*required
Data collected will be:

Check only one.

Anonymous

Subjects cannot be identified directly, indirectly through a study ID code and key, or through combination of elements in the data set (e.g., job title and employer).

Coded

Data file does not contain subjects' identifiable information, but there is a separate key that links study ID codes with subjects' identifiable information.

Identifiable

✓ *Data file contains direct identifiers, such as name, phone number, social security number, EID number, or elements that, when combined, allow for identification (e.g., job title and employer).*

Audio and video recordings are considered identifiable.

How do you plan to keep data confidential?

Include special precautions for identifiable or coded data, and address how data in multiple media (e.g., paper data, electronic data, audio recordings, etc.) will be stored.
All data (interview responses) will be stored on a password-protected computer in a password-protected file. Audio recordings will be deleted upon transcription with de-identified information. The transcriptionist will sign a consent form to not use or jeopardize participants' personal information.

How will research results be disseminated?

Include plans for protection of privacy/confidentiality in publications, presentations, and other methods of dissemination.
No identifiable information of any kind will be used in the writing of this thesis publication. Additionally, the results of this study may be presented at a professional peer reviewed conference and could also be disseminated through a peer reviewed professional journal.

Faculty Advisor CITI certificate

CITI certrificate 2020.pdf

PI CV

Kelsey Hyde Resume (01092020).docx

PI CITI certificate

citiCompletionReport8890104.pdf

Research Staff CITI certificates

Hyde Thesis Proposal Form Final.docx

Exempt forms: consent/assent, recruitment, study questions if applicable

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Study Measures

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