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Monolingual and Bilingual Children's Language-Based Social Preferences in a Predominantly  
Monolingual Environment

A thesis submitted in partial fulfillment  
of the requirements for the degree of  
Master of Arts in Psychology

by

Rachel Stevens  
Northern Kentucky University  
Bachelor of Arts in Psychology, 2013

May 2017  
University of Arkansas

This thesis is approved for recommendation to the Graduate Council.

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## **Abstract**

Monolingual children consistently display social preferences for individuals who speak their native language with a native accent compared to individuals who speak a foreign language or speak their native language with a foreign accent. Two explanations have been proposed for these language-based preferences. The first explanation is that language cues a child to in-group membership and children prefer to affiliate with individuals who are members of the same in-group. The second explanation is that children display preferences for their native language and accent because that is what they are most familiar with, and children prefer familiarity over the unknown. The present study attempted to tease these explanations apart by looking at a sample of bilingual children in addition to a sample of monolingual children living in a predominantly monolingual area. Children were shown pairs of images of adult faces paired with auditory stimuli that identified each face as a monolingual English speaker, a bilingual English/Spanish speaker, or a bilingual English/French speaker, and were asked to indicate with which person they would rather be friends. Overall, and contrary to predictions, children displayed a social preference for the bilingual individuals over the monolingual individuals. Potential reasons for these results are discussed.

## **Acknowledgments**

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## **I. Introduction**

Children display preferences to interact socially with others based on numerous qualities and traits possessed by themselves and others. For instance, toddlers are more likely to offer help to an individual who has previously shown prosocial behavior that helped another individual achieve his goals compared to an individual who has previously shown antisocial behavior that hindered another individual from achieving his goals (Dahl, Schuck, & Campos, 2013), and are more likely to anticipate someone else's social preference toward a helpful individual compared to a hindering individual (Fawcett & Liskowski, 2012). Children as young as six years old prefer to affiliate with other children who have the same religious, fact-based, and opinion-based beliefs (Heiphetz, Spelke, & Banaji, 2014). Three-year-olds prefer to learn from same-gender, same-age peers (Shutts, Banaji, & Spelke, 2010), and elementary age children prefer to play with children of the same gender (Martin & Fabes, 2001). In one study conducted in South Africa, black children in a black township preferred to affiliate with peers of the same gender, but did not prefer to affiliate with children of a particular race. Comparatively, in a racially diverse school in South Africa, black, white, and multi-racial children also showed a same-gender bias; however, all three racial groups displayed a social preference for white peers (Shutts, Kinzler, Katz, Tredoux, & Spelke, 2011).

The impact of race on children's social preferences has been carefully examined. Children begin to develop ethnic and racial attitudes around the age of three (Aboud, 1988; Aboud & Amato, 2001; Cristol & Gimbert, 2008), but it is not until children are five to seven that racial prejudice develops (Aboud & Amato, 2001). Children of higher status racial groups tend to display a strong preference for children of the same racial group. This finding has been replicated in many countries, including the United States (Fishbein & Imai, 1993; Katz &

Kofkin, 1997), Britain (Lam, Guerrero, Damree, & Enesco, 2010; Kurz-Costas, DeFreitas, Halle, & Kinlaw, 2011), Spain (Guerrero, Enesco, & Lam, 2011), and Taiwan (Kowalski & Lo, 2001). The race-based social preferences of children of lower status racial groups are not as clear, as some research has concluded that these children tend to display lower amounts of in-group favoritism compared to high status peers (Brand, Ruiz, & Padilla, 1974; Jordan & Hernandez-Reif, 2009), while other research has concluded that these children tend to favor the higher status out-group (Corenblum & Annis, 1987; Corenblum & Wilson, 1982; Kurz-Costas et al., 2011; Spencer, 1984). Preschool and first graders in Canada displayed liking for members of the in-group and the out-group, but first-graders believed they were more similar to the in-group and dissimilar to the out-group. First-graders were also better at knowing which ethnic group they belonged to compared to preschoolers (Aboud, 1980). Another study conducted in Canada found that both white and First Nations children displayed a strong preference for white peers. First Nations first-grade children were more accurate when describing their racial identity compared to First Nations kindergartners, indicating that at this age, they had not yet established a race construct (Corenblum & Annis, 1987).

Language-based social preferences have only recently begun to attract the attention of researchers interested in the social preferences of young children. These preferences appear to emerge very early in development. Infants as young as four days old are capable of differentiating their native language from a foreign tongue (Mehler, Jusczyk, Lambertz, Halsted, Bertoncini, & Amiel-Tison, 1988). Measured by looking time, five-month-old infants displayed a preference for a person who had previously spoken in the infant's native language compared to a person who had previously spoken in a foreign language (Kinzler, Dupoux, & Spelke, 2007). Nazzi, Jusczyk, and Johnson (2000) found that five-month-old infants were able to distinguish

between their native language and a language within the same rhythm class, for example, American English and British English. Ten-month-olds chose to accept a toy from a speaker of their native language over a speaker of a foreign language, and in early childhood, five-year-old children preferred to befriend speakers of their native language or native accent compared to speakers of a foreign language or foreign accent (Kinzler et al., 2007). Beyond social preferences, fourteen-month-old infants chose to endorse speakers of their native accent over speakers of a foreign accent in a selective imitation task. When presented with a novel way to turn on a lamp, infants were more likely to imitate the action presented by the native-accented speaker than the action presented by the foreign-accented speaker (Buttelman, Zmyj, Daum, & Carpenter, 2013). Similarly, infants chose to eat food endorsed by a native speaker more often than food endorsed by a speaker of a foreign language (Shutts, Kinzler, McKee, & Spelke, 2009). In a study with older children, kindergartners preferred to learn the functions of new objects from native-accented speakers over foreign-accented speakers (Kinzler, Corriveau, & Harris, 2011).

There are two main explanations as to why children display a preference for others who speak their language with their accent. The first explanation is that language and accent serve as cues for who is a member of an individual's in-group (Spelke & Kinzler, 2007). The second explanation is that this preference is largely due to a familiarity effect, such that the native language or accent being spoken is simply more familiar to children, and individuals prefer familiarity over the unknown (e.g., Zajonc, 1968). I will examine these explanations in more detail in the following sections.



### **A. In-group identification**

Spelke (2000; 2004) theorized that human cognition is composed of four core knowledge systems used for the representation of inanimate objects, actions, numbers, and space. More recently, Spelke and Kinzler (2007) proposed a fifth system dedicated to representing social partners as those who are members of our group and those who are not. They argue that the language one speaks, and even the accent with which the language is spoken, are important cues for determining social group membership. There is even evidence to suggest that spoken language is a stronger cue to group membership than race. Five-year-old children preferentially chose to be friends with children of the same race, unless that child spoke with a foreign accent, in which case, children preferred to be friends with children of a different race who spoke with a native accent (Kinzler, Shutts, DeJesus, & Spelke, 2009). These findings could be due to the native accent acting as an in-group cue, as the authors suggest, or this preference could be due to a familiarity effect. Perhaps children are more familiar with people of different races than with people who speak with foreign accents. Kinzler and Dautel (2012) also examined how children view the stability of race and language over time. Children were shown pairs of pictures of children who were, for example, white and spoke French or black and spoke English, and were then shown two adults, one who was black and spoke French and one who was white and spoke English. They were asked who the child would grow up to be. They found that 5- and 6-year-old European American children chose the language match more frequently than the race match. This finding implies that for young children, language appears to be a more stable characteristic across development than race. Children as young as three years old understand that gender is a stable characteristic (Halim et al., 2014), and children as young as five and six years old understand that race is a stable characteristic (Hirschfeld, 1995).

While children tend to display a bias toward individuals within their same group, there is current debate as to whether young children's in-group favoritism is the same as out-group prejudice. A review (Cameron, Alvarez, Ruble, & Fuligni, 2001; Yee & Brown, 1992) of children's intergroup attitudes claims that when given a forced choice, children will preferentially benefit their in-group and harm the out-group. However, when given an option to benefit both groups or harm neither group, research indicates that children display a positivity bias towards their group, but are neutral, rather than negative, toward the out-group. Buttelmann and Bohm (2014) found that when six-year-olds were given the option to award positive and negative items to a member of their in-group, as assigned arbitrarily by a coin toss when the child arrived, a member of the out-group, or to a box in which no one would receive the item, they gave the most positive items to a member of their in-group, but did not differ in the distribution of negative items to the out-group member or the neutral box. By the age of eight, however, the children distributed the most positive items to their in-group member and the most negative items to the out-group member. Thus, it may be the case that out-group prejudice does not develop until a later age, while in-group favoritism may be present much earlier in development. When making judgments about in-group and out-group members, children may be utilizing a lay theory in which what is familiar to them is good or preferred, but what is unfamiliar is not necessarily bad (Cameron et al., 2001). In fact, when children are made more familiar to out-groups, in-group bias is lessened (Cantor, 1972; Hohn, 1973; Katz & Zalk, 1978).

It is important to note that most of the research on children's intergroup attitudes has been conducted at an explicit level. When children complete an implicit association test (IAT) adapted for children, they display prejudice and attitudes similar to adults at as young as three years of age. The IAT for children utilizes smiling and frowning faces that represent good and

bad as well as a cartoon of an African American face and a cartoon of a Caucasian face. In the test trials, the smiling face and the African American face appear on, for example, the left side of the screen. Children must press the left key when African American faces appear on the screen as well as when they hear a positive word, such as “good”. During this trial, the frowning face and the Caucasian face will appear on the right side of the screen. Children must press the right key when other cartoons of Caucasian faces appear on the screen as well as when they hear a negative word, such as “bad.” Implicit prejudice was measured by the number of errors the children made by pressing the wrong key and by slower reaction times. This implicit prejudice seems to remain stable throughout development and may be the result of an in-group preference combined with sensitivity to the social dominance of different groups (Dunham, Baron, & Banaji, 2008).

## **B. Familiarity**

Another explanation for children’s language-based social preferences is that they are showing a preference for what is more familiar to them. Zajonc (1968) determined that mere exposure to any particular stimulus leads to that stimulus being viewed more favorably than a stimulus to which an individual has no previous exposure. He was led to this conclusion by determining that the affective meanings of words were related to their frequency of use. The mere exposure effect has been thoroughly documented in a wide array of experiments. In one such experiment, participants were subliminally shown a novel geometric shape five times. Participants then preferred that shape significantly more often than a novel shape to which they had no previous exposure (Bornstein, Leone, & Galley, 1987). Mere exposure to other-race faces has been shown to increase liking to novel faces of that race in both children and adults (Cantor, 1972; Zebrowitz, White, & Wieneke, 2008).

Much of the research on repeated exposure, or familiarity, and liking has centered on musical stimuli. Heingartner and Hall (1974) found that college students and fourth graders expressed increased liking for Pakistani music following eight repeated exposures to thirty-second auditory music clips. A positive correlation was also found between college students' familiarity with and liking of sixty excerpts from popular songs (North & Hargreaves, 1995). Witvliet and Vrana (2007) found that positively valenced, but not negatively valenced, music was liked more with repeated exposure. The researchers also found that participants smiled more often with repeated exposure to positive, arousing music.

Several studies lend support to the familiarity explanation of language-based preferences. A recent study showed that 5- and 6-year-old children from Tennessee displayed no preference to affiliate with southern-accented versus northern-accented children; whereas children of the same age from Illinois preferred northern-accented children as friends (Kinzler & DeJesus, 2013a). The authors theorize that the southern children may be more familiar with a northern American accent through popular media, which is why they did not display a preference for either speaker. The northern-accented speakers were likely to be less familiar with the southern American accent. These preferences were not due to stereotypes associated with either accent, as the 5- and 6-year-olds from Illinois and Tennessee did not consistently attribute being smart or nice with either accent, while 9- and 10-year-olds from Illinois and Tennessee consistently characterized the northern-accented speakers as being smart and the southern-accented speakers as being nice. While northern-accented children in the United States seem to use regional accents as a cue for social group membership, eastern-accented French speaking children in France were not able to differentiate between accents from eastern and southern France. Girard, Floccia, and Goslin (2008) found that five- and six-year-olds could not reliably categorize the eastern and

southern accents as such, but could distinguish between their own native accent and a more salient foreign French accent.

Stevens and Behrend (2014) examined first grade and fourth grade children's preferences for accents that differed in both familiarity and status, as rated by adults. They found that children showed the greatest preference for the more familiar accents but also showed a significant preference for the accents perceived by adults as being higher in social status. Additionally, preferences for native accent and language appear to be strong only if that is the only discriminating information given. Kinzler and DeJesus (2013b) found that children only show a preference for native-accented speakers when the sentences they spoke contained neutral content. However, if the native-accented speaker spoke a sentence detailing something mean they had done and the foreign-accented speaker's sentence detailed a nice deed, the children were more likely to prefer the nice foreigner as a friend over the mean American. If the basis for language-based preferences is primarily in-group bias, children should have chosen their group members (the native-accented speakers) as friends, regardless of the content of the sentences.

To this point, the literature on language-based social preferences has centered almost exclusively on monolingual children. There is relatively little research on these preferences in multilingual children. Bilingualism in the United States is on the rise, increasing from about 11% of the population in 1980 to nearly 20% in 2011 (U.S. Census Bureau), so it is increasingly important to study this quickly growing yet underrepresented population. Souza, Byers-Heinlein, and Poulin-Dubois (2013) recently found that both monolingual and bilingual children preferred unaccented speech to accented speech. In this study, bilingual and monolingual children in Montreal were presented with native Canadian-accented French/English and foreign Haitian-Creole-accented French/English speakers. Both groups of children preferred to affiliate with the

native-accented children over the foreign-accented children, though it was hypothesized that bilingual children would not show preference for unaccented speech. The Haitian-Creole accent was unfamiliar to the participants in this study, so it could very well be that bilingual children prefer familiar accents to unfamiliar accents, but may not show a preference between a native accent and a familiar foreign accent.

Similarly, Byers-Heinlein, Behrend, Lyakout, Girgis, and Poulin-Dubois (2016) recently studied the language-based social preferences of monolingual and bilingual children. Their study revealed that monolingual five-year-old children from a predominantly monolingual U.S. city preferred monolingual children over bilingual children as friends. In the largely bilingual city of Montréal, five-year-old monolingual children also preferred other monolingual children as friends, but, somewhat surprisingly, bilingual children of the same age showed no preference for either monolingual or bilingual children. The results of this study do not support an in-group favoritism explanation, because bilingual children should have preferred the bilingual speakers if they were seen as being members of the same group as the participants. It is possible that familiarity to the languages spoken can explain these results, as the bilingual children may have been equally familiar with both monolingual and bilingual speakers, given the linguistic environment in Montreal.

The research thus far on children's language-based social preferences has largely centered on monolingual children. With the increasing number of children growing up bilingual in the United States, it is becoming even more important to include this often excluded population into developmental research. The research that has been done on the language-based social preferences of bilingual children has been conducted in predominantly bilingual environments and has led to somewhat surprising results: these children tend to show a

preference toward native, unaccented speech, much like their monolingual counterparts, but tend to show no preference for bilingual over monolingual speakers, unlike their monolingual counterparts, who have shown a preference for other monolingual children. The explanations for children's language-based social preferences are not consistent, and the preferences seem to teeter between being explained by in-group favoritism or an effect of familiarity.

### **C. Current Research**

This purpose of this thesis was to examine the language-based preferences of monolingual and bilingual children in a predominantly monolingual environment and attempt to disentangle the two main explanations for children's language-based preferences.

In order to determine how the language-based social preferences of bilingual children differ from the language-based social preferences of monolingual children, both monolingual and bilingual children completed a social preference task presented to them on a laptop computer. They were shown pairs of faces demonstrated to be either monolingual speakers or bilingual speakers. The children were then asked to indicate which person they'd like to be friends with. Monolingual children have been shown to choose monolingual speakers significantly more often than bilingual speakers on this type of task, while bilingual children from Montreal have not shown a significant preference for either type of speaker (Byers-Heinlein et al, 2016). Given that the linguistic environment in Montreal is predominantly bilingual, it was important to determine if bilingual children's social preferences differ when they live in a predominantly monolingual environment. It was also important to attempt to replicate the finding that monolingual children prefer other monolingual individuals. In order to determine if children's language-based social preferences are due to an in-group bias or to a familiarity effect, children indicated their preferences for individuals who are either monolingual speakers of English, bilingual speakers

who speak the same two languages they speak (Spanish and English), or bilingual speakers who speak one familiar language (English) and an unfamiliar language (French). I will describe the exact comparisons in the Method section.

I hypothesized that a different pattern of results would appear if children's language-based preferences are due to either familiarity or in-group bias. If familiarity is the primary mechanism behind these preferences, I predicted that both monolingual and bilingual children should prefer the monolingual speakers as friends when paired against the bilingual speakers. In a predominantly monolingual environment, even if the child is bilingual, they should have more exposure to and, hence, be more familiar with monolingual speakers. I also predicted that bilingual children would show a preference for the bilingual English/Spanish speaker over the bilingual English/French speaker, because it is likely they are more familiar with both Spanish and English than with French. French is unfamiliar, so if language-based social preferences are due to a familiarity effect, the bilingual children should prefer the bilingual speakers of the languages they are familiar with, in this instance, English and Spanish.

If these preferences result instead from an in-group bias with bilingualism acting as a cue for group membership, the predicted pattern of results is quite different. Bilingual children should prefer the bilingual speakers to the monolingual speaker regardless of the languages the bilingual speakers speak. They should also show a preference for the bilingual English/Spanish speaker over the unfamiliar bilingual speaker (French). This is because speakers of the same two languages as the participant should give the strongest in-group membership cue. However, bilingual children may show no preference between the two bilingual speakers, as being bilingual may be a strong enough in-group cue, regardless of the languages spoken. Monolingual



children should prefer the monolingual speakers to the bilingual speakers and show no preference between the bilingual speakers.

## **II. Method**

### **A. Participants**

Thirty-nine 4- to 7-year-old children ( $M = 6.33$  years,  $SD = .80$ ) living in Northwest Arkansas participated in this study. Thirty-one children were monolingual speakers of English ( $M = 6.5$  years,  $SD = .63$ ) and eight children were bilingual speakers of English and Spanish ( $M = 5.59$  years,  $SD = 1.09$ ). Of the thirty-one monolingual speakers, 15 were male. Of the eight bilingual speakers, 5 were male. Children were recruited from local schools, grocery stores, public libraries, community centers, and the Arkansas Newswire. Degree of bilingualism for each child was assessed with a modified version of the Language Experience and Proficiency Questionnaire (LEAP-Q) developed by Marian, Blumenfeld, and Kaushanskaya (2007), that has been adapted for children and will be described in the Materials and Procedure section that follows.

Of the thirty-one monolingual participants, twenty-four had parents completed the LEAP-Q questionnaire. The large majority of these children were labeled as being 100% exposed to English only. Three of these children were labeled as having 90% or greater exposure to English only, and one was labeled as having 70% exposure to English only. The mean exposure to English among all monolingual participants was 98%. All of these children were labeled as having 10% or less exposure to Spanish. The mean exposure to Spanish among all monolingual participants was 1%. Some had small exposure to an additional language (Laotian, Choctaw, and sign language). Additionally, at the end of each session conducted in local schools where we were not guaranteed to receive the LEAP-Q back from parents, children were asked by the

experimenter if they knew how to speak any languages other than English. Most children claimed that they did not know any other languages. Three children that claimed they did know another language were questioned further. One child claimed he knew sign language. The other two said they knew a little bit of Spanish. All eight of the bilingual participants' had parents complete the LEAP-Q. Every bilingual child was only exposed to English and Spanish. Five of the participants were Spanish dominant, and three were English dominant with exposure to English ranging from 10% to 80% and exposure to Spanish ranging from 20% to 90%. One child was reported to have 80% exposure to English and 20% exposure to Spanish, but was labeled as being bilingual by his parent. Similarly, another child was also labeled as bilingual by his parent, but was exposed to Spanish 90% of the time and English only 10% of the time. Due to recruitment issues, these two children were retained in the bilingual sample and their responses were included in the analysis. The mean exposure to English among bilingual participants was 49% and the mean exposure to Spanish was 52%.

## **B. Materials and Procedure**

Children were tested in our lab at the University of Arkansas, in a quiet room at their school, or at a table set up outside of local grocery stores. Parents completed the LEAP-Q in their dominant language, either Spanish or English. Children who were reported to use English 70% of the time or more were considered monolingual, while children whose parents classified them as bilingual were considered bilingual. The criteria for bilingualism was lax due to the small sample size and difficulty with recruitment, but in future research will be more stringent, following the guidelines laid out by Souza et al. (2013). The modified version of the LEAP-Q can be found in Appendix A (English version) and Appendix B (Spanish version).

For the main part of the experiment, participants were shown a PowerPoint slideshow with 12 trials of pairs of same-sex faces, used previously by Behrend et al. (2014), taken from the nimSTIM set of facial expressions (Totenham et al., 2009) or taken in a similar fashion. Four trials paired a monolingual English speaker with a bilingual English/Spanish speaker. Four trials paired a monolingual English speaker with a bilingual English/French speaker, and four trials paired a bilingual English/French with a bilingual English/Spanish speaker. Auditory stimuli included those used by Byers-Heinlein et al. (2016), which were previously recorded from 8 native English and 8 English/Spanish bilingual adults, plus recordings from four French/English bilingual adults in Northwest Arkansas. Each English and Spanish audio had been equated on degree of accent by a sample of adults (Byers-Heinlein et al., 2016).

The experimenter began each session by asking each child if he or she would like to play a game with the experimenter. The experimenter then told children that they are going to see pictures of different people and listen to their voices. After they listened to the voices they were asked which person they would rather be friends with. During each trial, the experimenter pointed to the first face of the pair and said one of four statements, for example, “Here’s one person,” and the first audio recording played while that person’s face increased in size on the screen. This was done to make clear which voice goes with which face. After the audio clip finished, the face returned to normal size. The experimenter then pointed to the second face and said, “Here’s another person,” and the second audio recording played as the second face increased in size. Within each trial, the monolingual speakers said the same sentence twice, and the bilingual speakers said the same sentence twice, but once in each language. An example of a sentence a monolingual speaker said is, “Elephants have trunks. Hmmm. Elephants have trunks.” An example of a sentence a bilingual speaker said is, “Elephants have trunks. Hmmm. Los

elefantes tienen trompas.” All sentences were neutral in content. There were a total of eight sentences, so four sentences were repeated once to make up the twelve trials. The stimulus sentences can be found in Appendix C. One random trial order was made, and the order of trials in order 2 the opposite of the order of trials in order 1. Within each trial, the presentation of stimuli in order 2 was opposite that of order 1 (e.g., monolingual vs. bilingual Spanish/English in order 1 will be bilingual Spanish/English vs. monolingual in order 2). Following each trial, the participant was asked with which speaker they would like to be friends.

### **III. Results**

Responses to each type of trial were summed across participants, and the number of responses for each speaker type was used as the primary dependent variable. First, I compared differences between the monolingual and bilingual participants. Independent samples t-test were then conducted to compare the number of times monolingual and bilingual children chose to be friends with the monolingual English speakers overall, the bilingual English/Spanish speakers overall, and the bilingual English/French speakers overall. Similarly, t-tests were also performed on responses to the specific trial types, i.e., when the monolingual English speakers were paired with the bilingual English/Spanish speakers, when the monolingual English speakers were paired with the bilingual English/French speakers, and when the bilingual English/Spanish speakers were paired with the bilingual English/French speakers. Due to our small sample of bilingual children, analyses that may have approached significance with a larger sample did not in the current analyses. For some analyses, I will examine the monolingual children’s responses separately from the bilingual children’s responses. Descriptive statistics for these comparisons are provided in Table 1.

Of all of these analyses comparing monolingual participant responses to bilingual participant responses, only one comparison showed a significant difference, and only marginally at that. Specifically, the monolingual participants ( $M = 4.61$ ,  $SD = 1.52$ ) chose the bilingual English/French speaker overall more often than the bilingual participants ( $M = 3.38$ ,  $SD = 1.77$ ),  $t(37) = 1.99$ ,  $p = .054$ . Somewhat surprisingly, monolingual participants ( $M = 3.23$ ,  $SD = 1.18$ ) did not choose the monolingual speakers more often than the bilingual participants ( $M = 3.75$ ,  $SD = 2.25$ ),  $t(37) = -.917$ ,  $p = .36$ . Similarly, the bilingual participants ( $M = 4.88$ ,  $SD = 2.64$ ) did not select the English/Spanish bilingual speakers more often than monolingual participants ( $M = 4.16$ ,  $SD = 1.53$ ),  $t(37) = -1.0$ ,  $p = .32$ .

Next, participants' preferences for speakers were compared to chance using one sample *t*-tests. Overall, each speaker type (monolingual English, bilingual English/Spanish, and bilingual English/French) appeared in a total of eight trials. Thus, to compare overall social preferences to chance, chance was set to 4. I examined the responses of the all participants together, then examined the responses of the monolingual participants and the bilingual participants separately.

Overall, participants preferred the monolingual English speakers significantly less often than would be expected by chance ( $M = 3.33$ ,  $SD = 1.44$ ),  $t(38) = -2.89$ ,  $p = .006$ . Their preferences for bilingual English/Spanish speakers ( $M = 4.31$ ,  $SD = 1.79$ ),  $t(38) = 1.07$ ,  $p = .29$ , and bilingual English/French speakers ( $M = 4.36$ ,  $SD = 1.63$ ),  $t(38) = 1.38$ ,  $p = .18$ , did not differ from chance.

When looking only at monolingual participant responses, the monolingual English speakers were again chosen less often than expected by chance ( $M = 3.23$ ,  $SD = 1.18$ ),  $t(30) = -3.67$ ,  $p = .001$ , while the bilingual English/French speakers were preferred at rates greater than chance expectations ( $M = 4.61$ ,  $SD = 1.52$ ),  $t(30) = 2.24$ ,  $p = .032$ . Monolingual participants'

preference for bilingual English/Spanish speakers did not differ from chance ( $M = 4.16$ ,  $SD = 1.53$ ),  $t(30) = .587$ ,  $p = .56$ . When examining only bilingual participant responses, their preferences for the three speaker types did not differ from chance.

To test for pairing differences, one sample t-tests were also conducted on each individual pairing type to determine if participants' preferences within each pairing type differed from chance. Each pairing type (monolingual English speaker paired with bilingual English/Spanish speaker, monolingual English speaker paired with bilingual English/French speaker, and bilingual English/Spanish speaker paired with bilingual English/French speaker) appeared in four trials, so the test value was set at 2.

Overall, participants preferred the monolingual English speaker less often than chance when paired with the bilingual English/Spanish speaker ( $M = 1.67$ ,  $SD = .98$ ),  $t(38) = -2.12$ ,  $p = .041$ . Similarly, participants' preference for monolingual English speakers when paired with bilingual English/French speakers trended toward being significantly less than chance ( $M = 1.67$ ,  $SD = 1.11$ ),  $t(38) = -1.88$ ,  $p = .068$ . When both types of bilingual speakers were paired together, participants' preferences did not differ from chance.

When looking only at monolingual participants' responses, the monolingual English speakers were preferred less often than chance when they were paired with the bilingual English/Spanish speakers ( $M = 1.68$ ,  $SD = .87$ ),  $t(30) = -2.06$ ,  $p = .048$ , and also when paired with bilingual English/French speakers ( $M = 1.55$ ,  $SD = 1.06$ ),  $t(30) = -2.37$ ,  $p = .024$ . When both types of bilingual speakers were paired together, monolingual participants' social preferences did not differ from chance. When examining only bilingual participant responses, their preferences within all three pairings did not differ from chance.

Finally, t-tests were conducted to check for order differences. The presentation of stimulus pairs in order 2 was the exact opposite of order 1. Within each pair, the stimulus that was presented first in order 1 was presented second in order 2. This was done to protect against a bias children might have to choose the first or last stimulus presented in a pairing. Unexpectedly, a significant difference was found between the two orders for overall English/Spanish speaker choices and monolingual English speaker choices on trials paired with bilingual English/Spanish speakers, as well as a marginally significant difference between conditions for overall monolingual English speaker choices. Participants in order two ( $M = 5.0$ ,  $SD = 1.53$ ) chose the bilingual English/Spanish speaker more often than participants in order one ( $M = 3.65$ ,  $SD = 1.81$ ),  $t(37) = -2.51$ ,  $p = .017$ . Participants in order one ( $M = 2.05$ ,  $SD = 1.0$ ) were more likely to choose the monolingual English speaker on trials paired with the bilingual English/Spanish speaker than participants in order two ( $M = 1.26$ ,  $SD = .81$ ),  $t(37) = 2.70$ ,  $p = .01$ . Finally, participants in order one ( $M = 3.75$ ,  $SD = 1.62$ ) chose the monolingual English speaker overall marginally more often than participants in order two ( $M = 2.89$ ,  $SD = 1.1$ ),  $t(37) = 1.92$ ,  $p = .063$ . These condition differences are discussed in greater detail in the discussion section.

#### **IV. Discussion**

A substantial amount of research has supported the idea that a speaker's language and accent can impact children's social preferences. Various studies (e.g. Kinzler et al., 2007; Kinzler et al., 2011; Souza et al., 2013) have shown that monolingual children prefer others who speak with a native accent when compared to a non-native accent, and one recent study has shown that bilingual children display that same preference. What is less frequently studied is how the number of languages an individual speaks impacts the social preferences of monolingual and bilingual children. Only one study has shown that monolingual children prefer other

monolingual individuals while bilingual children in a predominantly bilingual environment displayed no preference for either bilingual or monolingual speakers (Byers-Heinlein et al., 2014). The purpose of the current study was to explore the preferences of monolingual and bilingual children for other individuals who are monolingual or bilingual in a predominantly monolingual environment. Further, I wanted to attempt to determine whether children's language-based preferences are more due to an in-group preference or to an effect of familiarity.

In order to examine this, monolingual and bilingual children viewed pairs of images of adults accompanied with audio samples of them speaking the same sentence twice in English (monolingual stimuli), the same sentence once in English and once in Spanish (bilingual English/Spanish stimuli), or the same sentence once in English and once in French (bilingual English/French stimuli). They were then given a forced choice in which they had to indicate over twelve trials with which individual they would rather be friends.

Overall, and contrary to the predictions, children preferred both types of bilingual speakers over the monolingual speakers. Perhaps even more surprising, this preference seemed to be driven by our monolingual sample. Unlike Byers-Heinlein et al. (2016), monolingual children in the current study did not demonstrate a preference for other monolingual individuals. In fact, when forced to choose between monolingual and bilingual individuals, monolingual children preferred the bilingual speakers. Bilingual children did not display a preference between monolingual and bilingual individuals, but this finding is more difficult to interpret meaningfully due to our small sample of bilingual individuals.

While these results did not support our hypotheses, it is nonetheless possible that an in-group preference or an effect of familiarity is playing a role in the monolingual children's social preference for bilingual individuals. Each of our three speaker types (monolingual English



speakers, bilingual English/Spanish speakers, and bilingual English/French speakers) spoke English, the most familiar language to the largest proportion of the participants. The fact that all three speaker types spoke English could make each speaker type sufficiently familiar to the participants, so that familiarity no longer functioned as a distinguishing characteristic among speaker types.

Similarly, the fact that all speaker types spoke English, the sole language or one of the two languages the participants spoke, could potentially qualify each speaker type as a member of each participant's in-group. In any case, the results of this study indicate that simply being monolingual or bilingual may not have been a strong enough distinction for the participants in this study to distinguish in-group from out-group members. Furthermore, children did not seem to use the number of languages an individual speaks as a cue for who is in their in-group. Rather, the specific languages being spoken may be the stronger indicator. It is possible that as long as an individual speaks one language the child is familiar with and understands, this may be all that is necessary to categorize the individual as an in-group member.

It is also possible that the pairing of an unfamiliar stimulus with a familiar stimulus is what was driving the preference of the monolingual participants for the bilingual individuals (e.g. Zajonc 1968; Zebrowitz et al., 2008). Pairing a familiar language with an unfamiliar language could have possibly lessened the effect of participants being averse to unfamiliar stimuli, and may have even bolstered the appeal of a novel stimulus. This idea may be supported in part by the selective trust literature. In one study, infants were more likely to choose to try a food item endorsed by a speaker of their native language over a food item endorsed by a speaker of an unfamiliar language (Shutts et al., 2009). Recent research has also shown that children have

favorable views of bilingual individuals, perceiving them to be smarter than monolinguals because they know two languages (Kinzler & DeJesus, 2013b).

One last potential explanation for the reason monolingual children preferred bilingual speakers could be the simple fact that these stimuli contained two different sounding sentences (even though the meaning was the same) compared to the monolingual stimuli that contained the same sentence repeated twice. It is possible that children simply preferred hearing two different things compared to hearing the same thing twice. In previous studies that have used similar methodology to this one, this did not seem to be the case. Monolingual children in Montreal and Northwest Arkansas preferred the monolingual speakers to the bilingual speakers, even though the monolingual speakers said the same sentence twice (Byers-Heinlein et al., 2016). However, it is worth noting that these preferences weren't particularly strong and, in particular, less strong than children's preferences for unaccented over accented speakers using similar paradigms (e.g. Kinzler et al., 2007). In the current study compared to the one conducted in Montreal, children were exposed to two different bilingual stimuli, and only one type of monolingual stimulus, thus they were exposed to bilingual stimuli more often than the monolingual stimuli. Perhaps being exposed to more bilingual stimuli than monolingual stimuli may have led children to develop a bias to choose the stimuli with two different sounding sentences more often and may account for the discrepant findings.

Surprisingly, stimulus presentation order impacted the responses of the participants on the trials that paired the monolingual English speaker and the bilingual English and Spanish speaker. Participants in one order were more likely than participants in the other order to prefer the monolingual English speaker in the trials that paired this speaker with the bilingual English and Spanish speaker. An exploration of why this order effect occurred led to no definitive

results. There were no age differences between children who were tested on each order, so age was not a confound.

In a careful examination of the stimuli, I found no evidence of primacy or recency effects, such that children were not responding differently to the trials that came earlier or later in the experiment, or a side bias, such that children were not choosing the stimulus that was presented first or last or that appeared on one side of the computer display. I then examined each individual trial where a monolingual English speaker was paired with a bilingual English/Spanish speaker. There was only one trial on which participants in orders one and two differed significantly from each other in their responses. This was the sixth trial in order one and the seventh trial in order two. Thus, the placement of this trial within the two orders of trials does not seem to factor into this finding, since it was one of the middle trials for both conditions. There could be something inherent in this particular trial that is impacting participants' in each order to respond differently. Perhaps, rather than language differences influencing participants' preferences, on this particular trial, children may have relied on other information, such as the pictures that were paired with the auditory clips, to help guide their social preferences. After fully delving into the stimuli, presentation order, and participant demographics, no real explanation has appeared for the difference in responding between participants in both conditions on this specific trial. It is possible that this finding is due to small sample size or the number of comparisons, or that this is a spurious finding and will need to be investigated in future studies.

## **V. Conclusions**

In conclusion, the results from the current study were not consistent with the hypotheses nor were they fully consistent with previous research on monolingual and bilingual children's language-based social preferences. However, and as has been argued previously in this paper, it

is nonetheless possible that both familiarity and an in-group bias are playing a role in the current findings but in a manner different from what was hypothesized. All three speaker types included English as the only or one of the two languages spoken, which may have made all three speaker types sufficiently familiar to participants in a predominantly monolingual environment and thus they may have categorized all speaker types similarly. Why children chose the bilingual speakers over the monolingual speakers can potentially be explained through methodological issues, for example, the fact that participants heard more bilingual speakers throughout the experiment than monolingual speakers, which may have biased their responses toward the type of stimuli they were exposed to more often. Another possible explanation for the preference toward bilingual individuals over monolingual individuals is that pairing an unfamiliar language with a familiar language may lessen the negative impact the unfamiliar language has on children's social preferences. Further research is needed to examine both the robustness of monolingual children's language-based preferences and also the language-based preferences of bilingual children.

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**VII. Table 1**

Table 1

*Means and standard deviations for overall choices for each speaker type and each trial type*

	All Participants		Monolingual Participants		Bilingual Participants	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Monolingual choices	3.33	1.44	3.23	1.18	3.75	2.25
English/Spanish choices	4.31	1.79	4.16	1.53	4.88	2.64
English/French choices	4.36	1.63	4.61	1.52	3.38	1.77
Monolingual choices when paired with English/Spanish	1.67	.98	1.68	.87	1.63	1.41
English/Spanish choices when paired with English/French	1.97	1.06	1.84	.93	2.5	1.41
Monolingual choices when paired with English/French	1.67	1.11	1.55	1.06	2.13	1.25

## VIII. Appendices

### A. Appendix A. Modified LEAP-Q – English Version

#### Language Experience and Proficiency Questionnaire for Children

Child's last name: \_\_\_\_\_

Child's first name: \_\_\_\_\_

Child's age: \_\_\_\_\_

Child's date of birth (mm/dd/yy): \_\_\_\_\_

Today's date (mm/dd/yy): \_\_\_\_\_

Child's gender:  Male       Female       Prefer not to answer

- (1) Please list all the languages your child knows in **order of dominance**, putting his/her most dominant language first (if languages are of the same dominance place them in the same box):

1	2	3	4	5
---	---	---	---	---

- (2) Please list all the languages your child knows in **order of acquisition**, putting his/her native language first (if he/she acquired languages at the same time place them in the same box):

1	2	3	4	5
---	---	---	---	---

- (3) Please list what percentage of the time your child is currently and on average exposed to each language. (The percentages should add up to 100%):

List language here:	A	B	C	D	E
List percentage here:					

- (4) When choosing to read a book to your child available in all of his/her languages, in what percentage of cases would you choose to read it in each of his/her languages? Assume that the original was written in another language, which is unknown to you. (The percentages should add up to 100%):

List language here:	A	B	C	D	E
List percentage here:					

- (5) When choosing a language to speak with a person who is equally fluent in all his/her languages, what percentage of time would he/she choose to speak each language? Please report percent of total time. (The percentages should add up to 100%):

List language here:	A	B	C	D	E
List percentage here:					

- (6) How many years of formal education do you have? \_\_\_\_\_

Please check your highest education level (or the approximate equivalent to a degree obtained in another country):

- |                                                |                                               |                                       |
|------------------------------------------------|-----------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Less than High School | <input type="checkbox"/> College/CEGEP        | <input type="checkbox"/> Masters      |
| <input type="checkbox"/> High School           | <input type="checkbox"/> Some University      | <input type="checkbox"/> Ph.D/M.D/J.D |
| <input type="checkbox"/> Professional Training | <input type="checkbox"/> University           | <input type="checkbox"/> Other: _____ |
| <input type="checkbox"/> Some College/CEGEP    | <input type="checkbox"/> Some Graduate School |                                       |

- (7) Has your child ever had a vision problem  hearing impairment  language disability  or learning disability  (Check all applicable).  
If yes, please explain (including any corrections):
-

**Language: English**

This is my child's language      First     Second       Third       Fourth       Fifth

All questions below refer to your child's knowledge of **English**

(8) Age when your child...

Began acquiring:	Became fluent in:	Began reading in:

(9) Please list the number of years and months your child spent in each language environment:

	Years	Months
A country where <b>English</b> is spoken		
A city where <b>English</b> is spoken		
A family where <b>English</b> is spoken		
A school where <b>English</b> is spoken		

(10) Please circle your child's level of proficiency in speaking and understanding **English**:

*Speaking:*

0	1	2	3	4	5	6	7	8	9	10
None	Very low	Low	Fair	Slightly less than adequate	Adequate	Slightly more than adequate	Good	Very Good	Excellent	Perfect

*Understanding spoken language:*

0	1	2	3	4	5	6	7	8	9	10
None	Very low	Low	Fair	Slightly less than adequate	Adequate	Slightly more than adequate	Good	Very Good	Excellent	Perfect

(11) Please circle to what extent your child is currently exposed to **English** in the following contexts:

*Interacting with friends:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Interacting with family:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Watching TV:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Listening to radio/music:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Reading:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

(12) In your perception, how much of a foreign accent does your child have in **English**?

0	1	2	3	4	5	6	7	8	9	10
None	Almost none	Very light	Light	Some	Moderate	Considerable	Heavy	Very heavy	Extremely heavy	Pervasive

(13) Please circle how frequently others identify your child as a non-native speaker based on his/her accent in **English**?

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

**Language: Spanish**

This is my child's language    First     Second     Third     Fourth     Fifth

All questions below refer to your child's knowledge of **Spanish**

(14) Age when your child...

Began acquiring:	Became fluent in:	Began reading in:

(15) Please list the number of years and months your child spent in each language environment:

	Years	Months
A country where <b>Spanish</b> is spoken		
A city where <b>Spanish</b> is spoken		
A family where <b>Spanish</b> is spoken		
A school where <b>Spanish</b> is spoken		

(16) Please circle your child's *level of **proficiency*** in speaking and understanding **Spanish**:

*Speaking:*

0	1	2	3	4	5	6	7	8	9	10
None	Very low	Low	Fair	Slightly less than adequate	Adequate	Slightly more than adequate	Good	Very Good	Excellent	Perfect

*Understanding spoken language:*

0	1	2	3	4	5	6	7	8	9	10
None	Very low	Low	Fair	Slightly less than adequate	Adequate	Slightly more than adequate	Good	Very Good	Excellent	Perfect

(17) Please circle to what extent your child is currently exposed to **Spanish** in the following contexts:

*Interacting with friends:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Interacting with family:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Watching TV:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Listening to radio/music:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

*Reading:*

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always

(18) In your perception, how much of a foreign accent does your child have in **Spanish**?

0	1	2	3	4	5	6	7	8	9	10
None	Almost none	Very light	Light	Some	Moderate	Considerable	Heavy	Very heavy	Extremely heavy	Pervasive

(19) Please circle how frequently others identify your child as a non-native speaker based on his/her accent in **Spanish**?

0	1	2	3	4	5	6	7	8	9	10
Never	Almost Never				Half of the time					Always



## B. Appendix B. Modified LEAP-Q – Spanish Version

### Cuestionario de Experiencia y Competencia Lingüística para los niños

Apellido de su niño: \_\_\_\_\_

Nombre de su niño: \_\_\_\_\_

Edad de su niño: \_\_\_\_\_

Fecha de Nacimiento (mm/dd/aa): \_\_\_\_\_

Fecha (mm/dd/aa): \_\_\_\_\_

Masculino  Femenino

(1.) Por favor indique todos los idiomas que conozca su niño **en orden de dominio**:

1	2	3	4	5
---	---	---	---	---

(2.) Por favor indique todos los idiomas que conozca su niño **en orden de adquisición** (su idioma materno primero):

1	2	3	4	5
---	---	---	---	---

(3.) Por favor indique que porcentaje del tiempo su niño *actualmente y en promedio* está expuesto a cada idioma. (*Los porcentajes deben de sumar a 100%*):

Indique idioma:	A	B	C	D	E
Indique porcentaje:					

(4.) ¿Al escoger leer un libro a su niño disponible en todos sus idiomas, en que porcentaje de los casos escogería leerlo en cada idioma? Asuma que el libro original fue escrito en un idioma que Ud. no conoce. (*Los porcentajes deben de sumar a 100%*):

Indique idioma:	A	B	C	D	E
Indique porcentaje:					

(5.) ¿Al escoger que idioma usar para hablar con una persona igualmente fluida a su niño en todos sus idiomas, que porcentaje del tiempo escogería su niño hablar en cada idioma? Por favor indique el porcentaje del tiempo total. (Los porcentajes deben de sumar a 100%):

Indique idioma:	A	B	C	D	E
Indique porcentaje:					

(6.) ¿Cuántos años de educación tiene Ud.? \_\_\_\_\_

Por favor indique su nivel más alto de educación (o la aproximación Estado Unidense equivalente a un título obtenido en otro país):

- |                                                          |                                                        |                                       |
|----------------------------------------------------------|--------------------------------------------------------|---------------------------------------|
| <input type="checkbox"/> Menos que escuela secundaria    | <input type="checkbox"/> Algo de Universidad           | <input type="checkbox"/> Maestría     |
| <input type="checkbox"/> Escuela secundaria/preparatoria | <input type="checkbox"/> Universidad                   | <input type="checkbox"/> Ph.D/M.D/J.D |
| <input type="checkbox"/> Entrenamiento Profesional       | <input type="checkbox"/> Algo de Escuela Post-Graduado | <input type="checkbox"/> Otro: _____  |

(7.) ¿Su niño ha tenido un problema de visión , impedimento de audición , incapacidad de lenguaje , o incapacidad de aprendizaje ? (Indique todo lo aplicable).

Si es el caso, por favor explique (incluyendo cualquier corrección/es necesaria/s):

---

**Idioma: Inglés**

Este es su idioma materno  segundo  tercero  cuarto  quinto

Todas las preguntas a continuación se refieren al conocimiento de su niño de **Inglés**.

**(1) Edad cuándo su niño ...**

empezó a adquirir:	llegó a ser fluido en:	empezó a leer en:

**(2) Por favor indique el número de años y meses que su niño pasó en cada ambiente lingüístico:**

	Años	Meses
Un país donde este idioma es hablado		
Una ciudad donde este idioma es hablado		
Una familia donde este idioma es hablado		
Una escuela donde este idioma es hablado		

**(3) Por favor seleccione nivel de su niño competencia al hablar y comprender este idioma:***Hablar:*

0	1	2	3	4	5	6	7	8	9	10
Ningun a	Mu y baja	Baj a	Pasabl e	Poco menos que adecuad a	Adecuad a	Poco más que adecuad a	Buen a	Muy buen a	Excelent e	Perfect a

*Comprender:*

0	1	2	3	4	5	6	7	8	9	10
Ningun a	Mu y baja	Baj a	Pasabl e	Poco menos que adecuad a	Adecuad a	Poco más que adecuad a	Buen a	Muy buen a	Excelent e	Perfect a

(4) Por favor seleccione cuanto los siguientes factores contribuyeron a aprendizaje de su niño de este idioma:

*Conviviendo con amistades:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Conviviendo con familia:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Viendo television:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Escuchando la radio:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Leyendo:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

(5) ¿Según a su percepción, cuánto acento extranjero tiene su niño en este idioma?

0	1	2	3	4	5	6	7	8	9	10
Ninguno	Casi ninguno	Muy ligero	Ligero	Algo	Moderado	Considerable	Pesado	Muy pesado	Extremamente pesado	Penetrante

(6) Por favor valore que tan frecuentemente los demás lo identifican a su niño como un hablante no nativo basado en su acento en este idioma:?

0	1	2	3	4	5	6	7	8	9	10
Ninguno	Casi ninguno	Muy ligero	Ligero	Algo	Moderado	Considerable	Pesado	Muy pesado	Extremamente pesado	Penetrante

**Idioma: Español**

Este es su idioma materno  segundo  tercero  cuarto  quinto

Todas las preguntas a continuación se refieren al conocimiento de su niño de **Español**.

(7) Edad cuándo su niño ...

empezó a adquirir:	llegó a ser fluido en:	empezó a leer en:

(8) Por favor indique el número de años y meses que su niño pasó en cada ambiente lingüístico:

	Años	Meses
Un país donde este idioma es hablado		
Una ciudad donde este idioma es hablado		
Una familia donde este idioma es hablado		
Una escuela donde este idioma es hablado		

(9) Por favor seleccione nivel de su niño competencia al hablar y comprender este idioma:

*Hablar:*

0	1	2	3	4	5	6	7	8	9	10
Ningun a	Mu y baja	Baj a	Pasabl e	Poco menos que adecuad a	Adecuad a	Poco más que adecuad a	Buen a	Muy buen a	Excelent e	Perfect a

*Comprender:*

0	1	2	3	4	5	6	7	8	9	10
Ningun a	Mu y baja	Baj a	Pasabl e	Poco menos que adecuad a	Adecuad a	Poco más que adecuad a	Buen a	Muy buen a	Excelent e	Perfect a

(10) Por favor seleccione cuanto los siguientes factores contribuyeron a aprendizaje de su niño de este idioma:

*Conviviendo con amistades:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Conviviendo con familia:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Viendo television:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Escuchando la radio:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

*Leyendo:*

0	1	2	3	4	5	6	7	8	9	10
Ninguna contribución	Contribución mínima				Contribución moderada					Contribución más importante

(11) ¿Según a su percepción, cuánto acento extranjero tiene su niño en este idioma?

0	1	2	3	4	5	6	7	8	9	10
Ninguno	Casi ninguno	Muy ligero	Ligero	Algo	Moderado	Considerable	Pesado	Muy pesado	Extremamente pesado	Penetrante

(12) Por favor valore que tan frecuentemente los demás lo identifican a su niño como un hablante no nativo basado en su acento en este idioma:?

0	1	2	3	4	5	6	7	8	9	10
Ninguno	Casi ninguno	Muy ligero	Ligero	Algo	Moderado	Considerable	Pesado	Muy pesado	Extremamente pesado	Penetrante

**C. Appendix C. Sentence Stimuli**

## English

1. Elephants have trunks.
2. It is nice outside today.
3. There is a park near the school.
4. Fish live in water.
5. There are a lot of animals at the zoo.
6. Cheetahs run really fast.
7. Flowers smell good.
8. There are lots of toys in the playroom.

## Spanish

1. Los elefantes tienen trompas.
2. Hoy se siente bien afuera.
3. Hay un parque cerca de la escuela.
4. Los peces viven en el agua.
5. Hay muchos de animales en el zoológico.
6. Los guepardos corren muy rápido.
7. Las flores huelen bien.
8. Hay muchos juguetes en el cuarto de juegos.

## French

1. Les éléphants ont des trompes.
2. Il fait beau aujourd'hui.
3. Il y a un parc près de l'école.
4. Les poissons vivent dans l'eau.
5. Il y a beaucoup d'animaux au zoo.
6. Les guépards courent très vite.
7. Les fleurs sentent bons.
8. Il y a beaucoup de jouet dans la salle de jeux.

## Appendix D. IRB Approval Letter



Office of Research Compliance  
Institutional Review Board

April 27, 2015

### MEMORANDUM

TO: Rachel Stevens  
Douglas Behrend

FROM: Ro Windwalker  
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 15-04-665

Protocol Title: *Social Preferences of Bilingual Children Living in a Predominantly Monolingual Environment*

Review Type:  EXEMPT  EXPEDITED  FULL IRB

Approved Project Period: Start Date: 04/27/2015 Expiration Date: 04/19/2016

Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Research Compliance website (<https://vpred.uark.edu/units/rscp/index.php>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

**This protocol has been approved for 96 participants.** If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 109 MLKG Building, 5-2208, or [irb@uark.edu](mailto:irb@uark.edu).