

Children's Evaluations of Interlocutors in Foreigner Talk Contexts

by

Danielle Labotka

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy  
(Psychology)  
in the University of Michigan  
2020

Doctoral Committee:

Professor Susan A. Gelman, Chair  
Professor Marlyse Baptista  
Associate Professor Felix Warneken  
Professor Henry M. Wellman

Danielle Labotka

[dlabotka@umich.edu](mailto:dlabotka@umich.edu)

ORCID iD: 0000-0002-4542-2253

## **DEDICATION**

To my parents, Alma and David, who ensured I not only asked questions but also sought answers

## ACKNOWLEDGMENTS

This dissertation would not exist without my primary advisor, Susan A. Gelman. From the start, Susan has given me the chance to explore my interests and chase new ideas, and she has modeled for me how to be a thoughtful, diligent researcher. I also thank my other committee members: Marlyse Baptista, Felix Warneken, and Henry M. Wellman for pushing my research forward by asking me hard questions and for fostering a welcoming community of scholars at Michigan.

This research also was made possible by the many research assistants who helped along the way: Madelyn Brunvand, Jenny Choy, Yadonay Engeda, Dani Gonzales, Marisa Launstein, Sophie Martel, Mohamed Mazeh, Kevin Pullukat, Eishna Ragnarathan, Ella Simmons, Claire Tinker, Fatima Uddin, Vicenta Vargas, and Max Wechsler-Azen. I also thank Craig E. Smith, the Ann Arbor Hands-On Museum, and the University of Michigan Museum of Natural History for making the University of Michigan Living Lab possible.

Outside of the lab, I have been fortunate to have incredible teaching mentors: Drs. Kathleen Jodl, Elizabeth Buvinger, and E. Margaret Evans. I have learned countless lessons from them all, and I thank them for showing me the joy of teaching (and how to do it well).

I thank my cohort members for the time they have invested in giving me helpful feedback: Josi Bañales, Berenice Castillo, Kevin Constante Toala, Vaness Cox, Petal Grower, Joyce Lee, and Young-eun Lee. I also thank my lab mates, past and present, and the lab managers who have helped me along the way: Maria Arredondo, Kim Brink, Natalie Davidson, Jasmine DeJesus, Margaret Echelbarger, Giulia Elli, Rachel Fine, Merranda McLaughlin, Ariana

Orvell, Rachna Reddy, Steven Roberts, Ella Simmons, Sarah Snay, Valerie Umscheid, Lily Uribe, and Emma Ward. I especially thank Nicole Cuneo and Kristan Marchak who have provided me an immeasurable amount of support and laughter since I started this dissertation process.

I could not have gotten to this point without my people in Ann Arbor; I'm grateful to you all. Nicole Brass and Rebecca Marks, and their husbands Jordan Brass and Alan Pinkert, were always here for the right reasons and ensured we all celebrate our victories along the way. Tina Fields and Matthew McCarty made sure I got to the gym by mocking me when I didn't go (and when I did). Rachel Weissler constantly provided me with kindness, compassion, and tea. Emily Sabo and Bryan Maldonado gave me humor and boardgames and empanadas. Leandra Villegas and Rubén Villegas knew what was best for me and ensured I went out dancing. Deanna Kolberg and Niral Shah always brought their sharp wits with them when they came to eat my baked goods.

I have also been lucky to have a community of friends who have been with me for years and have actively worked to support me no matter how far away they were. Chantil Clement, Srishtee Dear, and Lindsey Melnyk have always inspired me with their fierce intelligence and curiosity for the world. I have seen and eaten a great number of things because of Jenn Huang, Linda Tung, and Amy Zhou. Norah Oles has always given me blunt honesty. Philip Chertoff, Leah Malamut, Clint Montgomery, and Sara Ruiz have been with me since my first day of college, and my life is richer because of their brilliant and strange company. Catherine Moresco and Victoria Norman have been the little sisters I've always wanted. I'm not sure I would know what fun is without Dan Cronin and Chloe Mays. Lydia Paziienza and Madison Ball have shared in the woes of graduate school while reminding me of the wonders of hobbies. Leah Hirschfeld,

Amra Bašić, and Emily Gerdin gave me my first lab born friendships that I continue to enjoy to this day. Though we only enjoyed one summer living together, Jenna Bekeny, Jack Bliamptis, Lin Boynton, Kitty Cadena, and I are a nation unto ourselves.

Lastly, I thank my family and those who let me lean on them the hardest. Darcy McDonnell has seen me through every high and low for the past 17 years. Julian Schwaller has provided unwavering support and always helped me figure out a plan when I didn't know what to do. I thank my grandparents—Charles and Katherine and Carlos and Melba—for establishing a legacy based on family, education, and helping others. Especialmente quiero agradecer a mi abuela Melba. Su amor por su familia nos mejora. I am grateful to all my aunts, uncles, and cousins; growing up in a large family has made me tough. My siblings, Gaby Labotka and Kevin Labotka, remind me to be passionate about what I love and not to take things too seriously. My parents, David and Alma, gave me everything I needed even when I didn't know it. And, of course, I thank my canine companions: Arrow, Balto, and my crazy Ida bug.

## TABLE OF CONTENTS

DEDICATION	ii
ACKNOWLEDGMENTS	iii
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF APPENDICES	x
ABSTRACT	xi
CHAPTER	
<b>I. Introduction</b>	<b>1</b>
<b>II. The Effect of Foreigner Talk on Children’s Evaluations of Addressees</b>	<b>12</b>
Study 1: Evaluations of Unknown Addressees	13
Study 2: Evaluations of Addressees Based on Social Group and Register	24
<b>III. The Effect of Register on Children’s Evaluations of Speakers</b>	<b>40</b>
Study 3a: Children’s Evaluations of Speakers Based on Baby Talk Use	40
Study 3b: Children’s Evaluations of Speakers Based on Foreigner Talk Use	49
<b>IV. Children’s Evaluations of Interlocutors in Native/Non-Native Speaker Interactions</b>	<b>65</b>
<b>V. General Discussion</b>	<b>92</b>

APPENDICES	103
BIBLIOGRAPHY	109



## LIST OF TABLES

### TABLE

I.1. Documented Foreigner Talk Features	11
IV.1 Manipulation Check	87
IV.2 Foreigner Talk Adjustments	88
IV.3 Explanations of Interlocutor Ratings	89
Appendix A.1 Question Wording for Each Evaluation	103

## LIST OF FIGURES

### FIGURE

II.1 Study 1 Children	36
II.2 Study 1 Adults	37
II.3 Study 2 Children	38
II.4 Study 2 Adults	39
III.1 Study 3a Children	60
III.2 Study 3a Adults	61
III.3 Study 3b Multiple Correspondence Analysis	62
III.4 Study 3b Children	63
III.5 Study 3b Adults	64
IV.1 Study 4 Children	90
IV.2 Study 4 Adults	91
Appendix B.1 Two-Part, Child-Friendly 6-Point Scale	104
Appendix C.1 Dichotomous Scales for Study 3b	105

## LIST OF APPENDICES

### APPENDIX

A. Question Wording for Each Evaluation	103
B. Two-Part, Child-Friendly 6-Point Scale	104
C. Dichotomous Scales for Study 3b	105
D. Video Scripts for Study 4	106

## ABSTRACT

A growing literature suggests accent serves as an important social category for infants and young children. Children show early social preferences for native over non-native speakers; this tendency may lay the foundation for future accent prejudice observed in adulthood. However, children do not hear non-native accents in a vacuum. Children's experiences with accent take place within a broader communicative context, including how others respond to non-native accents. One factor that may be of particular importance is the speech register typically associated with native speakers talking to non-native speakers, a register known as Foreigner Talk. By exploring how Foreigner Talk may be used as social information by children, we can better understand how children learn about non-native speakers.

This dissertation examined how and when children (5-10-year-olds;  $N = 424$ ) and adults ( $N = 514$ ) use registers as social information regarding addressees and/or speakers in native/non-native speaker interactions. Study 1 investigated the role of registers (Foreigner Talk, Baby Talk, Teacher Talk, and Peer Talk) in providing social information about *addressees*. Study 2 investigated how social information about an addressee (appearance, language, origin) is integrated with Foreigner Talk to inform evaluations. These studies provide evidence that children's evaluations of addressees are informed by Foreigner Talk by 5.5 years and by an integration of both Foreigner Talk and other social information after 7. Like older children, adults incorporated register and social group information into their ratings. In Studies 3a and 3b, I investigated whether children use register as social information about *speakers*. In Study 3a, I

examined a maximal contrast (i.e., Baby Talk vs. Teacher Talk), and found children (by age 5) evaluated speakers based on their register use, giving lower ratings to speakers who used Baby Talk; after 6, they began to use addressee social group membership to inform evaluations (e.g., lower ratings for a speaker who used Baby Talk with a teacher). In Study 3b, I studied whether Foreigner Talk use informs evaluations of speakers and found that, after 7, children gave higher ratings to speakers when their register mapped onto their addressee's social group (e.g., Foreigner Talk to a foreign peer). In contrast, adults provided lower ratings to speakers who used Foreigner Talk. Study 4 brought together the elements examined in the previous studies by asking participants to evaluate both native and non-native speakers in conversations in which Foreigner Talk was or was not used to repair communication. Children (ages 5-10) did not account for the need for communication repair or non-native accent in their ratings of interlocutors, instead providing lower ratings to both speakers and addressees when Foreigner Talk was used than when it was not. In contrast, adults only provided lower ratings to native speakers who used Foreigner Talk.

Together, these studies provide a first investigation into how register is used by children to learn about others. In all studies presented here, children's evaluations of interlocutors (speakers and addressees) were affected by register use. Furthermore, the presented studies speak to the potential social ramifications of Foreigner Talk, highlighting that children often have negative evaluations of those who are the recipients of Foreigner Talk and those who use it. This provides future avenues of research for understanding how the interactions children observe between native and non-native speakers may reinforce their biased attitudes against non-native speakers.

## **CHAPTER I**

### **Introduction**

In an increasingly globalized and interconnected world, English has risen as a lingua franca with over 1.75 billion speakers worldwide (Neeley, 2012). However, only 385 million of these English speakers are native in the language, meaning the majority of English speakers speak it with a non-native accent. Indeed, on a national scale, the United States is an immigrant nation with millions of non-native speakers of English, including 25 million people in the country reporting that they speak English “less than well” (U.S. Census Bureau, 2015). Given the size of the non-native speaking population both globally and nationally, it is important to understand the dynamics between native/non-native speaker interactions.

This dissertation seeks to understand the evaluations children draw from native/non-native speaker interactions—about both non-native speakers and those interacting with them—by focusing on the influence of Foreigner Talk. Foreigner Talk is a register, or style of speech, native speakers may use when talking to non-native speakers that has been hypothesized to either increase affiliation or reinforce social distance (Valdman, 1981; Zuengler 1991). Although children demonstrate biases against non-native speakers at an early age (Kinzler, Dupoux, & Spelke, 2007), little work has investigated how children extract social information about non-native speakers from the broader communicative context. As context for the present investigations, I review the literature on accent bias and prejudice, children’s register development, and Foreigner Talk before outlining the studies presented in this dissertation.

## **Accent Bias and Prejudice**

Developmental research points to accent—particularly non-native accent— as an important social marker for children at an early age. Infants as young as five months of age in American, monolingual English environments prefer to look at native speakers over non-native speakers (Kinzler, et al., 2007). By 10 months, babies of the same demographic prefer to accept toys from native over non-native speakers (Kinzler, Dupoux, & Spelke, 2012), and into early childhood (5 years), children with similar backgrounds prefer to be friends with native over non-native speakers and selectively trust native speakers over non-native speakers (Kinzler, Corriveau, & Harris, 2011; Kinzler, Shutts, DeJesus, & Spelke, 2009). Indeed, Hwang and Markson (2018) investigated friendship preference based on language proficiency in 5-8-year-olds, and found that younger children prioritized native accent in their friendship decisions over syntactic and semantic proficiency. Moreover, this preference may extend beyond monolingual children; some research suggests that bilingual children likewise prefer native over non-native speakers (even when the non-native accent is familiar) (DeJesus, Hwang, Dautel, & Kinzler, 2017), though other research has indicated that bilingual children’s preferences in this regard may be more idiosyncratic and based on factors such as the child’s language dominance (Byers-Heinlein, Behrend, Said, Girgis, & Poulin-Dubois, 2016). These early preferences in childhood may lay the groundwork for future prejudice against non-native speakers in adulthood. Adults have documented biases against non-native speakers. For example, adults tend to rate non-native speakers negatively along numerous dimensions such as intelligence, loyalty, and competence, regardless of fluency in the language (Gluszek & Dovidio, 2010). Indeed, a meta-analysis on the effects of speaker accent on interpersonal evaluations found that adults give lower evaluations to speakers with non-standard accents (defined as non-native accents or accents spoken by minority

groups in this case) on dimensions of status (e.g., class and intelligence), solidarity (e.g., ingroup vs. outgroup member), and dynamism (e.g., liveliness) (Fuertes, Gottdiener, Martin, Gilbert, & Giles, 2012). Relatedly, it has been proposed that a combination of unfamiliar accent and unfamiliar nonverbal cues on the part of the non-native speaker creates an experience of disfluency in the native speaker which results in their feeling anxious and psychologically distant (Dovidio & Gluszek, 2012). As an example, the processing demands of hearing language spoken in a non-native accent can lead native speakers to judge non-native speakers as less reliable sources of information than native speakers (Lev-Ari & Keysar, 2010). Together, the research suggest that adults have biases against non-native accents across several social dimensions.

These biases that adults possess manifest as tangible disadvantages for non-native speakers of English in American society. Many countries such as the U.S. and Canada provide protection against discrimination on the basis of categories such as gender and race but do not directly provide protection against accent discrimination (Lippi-Green, 1997; Munro, 2003). Nonetheless, discrimination based on accent is a daily experience for non-native speakers. Employers have been found to discriminate against non-native speakers in their hiring practices; non-native speakers are offered lower entry jobs than their equally qualified peers (Hosoda, Nguyen, & Stone-Romero, 2012; Lippi-Green, 1997). Sometimes, non-native speakers are disqualified even from consideration by employers before applying for a position (Munro, 2003). Even when they are employed, non-native speakers continue to experience accent discrimination. They are rated as less likely to be put in managerial positions, often are harassed by coworkers about their language, and get poorer customer ratings in service industry positions (Hosoda et al., 2012; Munro, 2003; Rao Hill & Tombs, 2011). Additionally, some non-native speakers have been fired from their jobs despite their language having no impact on their performance except



that others *perceive* that there is an issue with communication (Munro, 2003). Accent discrimination extends outside the realm of employment to other areas of daily life including housing and courtrooms (Lippi-Green, 1997). As such, the preferences for native over non-native speakers shown in children's and adults' evaluations extend to tangible consequences for non-native speakers.

Altogether, the existing literature indicates that native speakers across development prefer native over non-native speakers. Given the prevalence of non-native speakers of English in the U.S., it becomes all the more important to understand factors that contribute to such preferences early in development. However, the literature largely does not consider the role of the broader communicative context in affecting children's evaluations of non-native speakers. In any given conversation, there is a vast amount of linguistic information that may provide social information beyond the accent of an addressee. These different features of communication may yield deeper insights into how children evaluate non-native speakers; one such feature is register, to which I turn next.

### **Children's sensitivity to register**

Registers are the momentary product of the ongoing process of enregisterment. Through enregisterment, linguistic varieties come to obtain socially bounded meaning (Agha, 2003). The continuous nature of enregisterment makes defining register a difficult task that can only partially encapsulate the phenomenon. For this dissertation, though, I use other psychological research as a guideline for defining register, while attending to the limitations of such a definition.

Registers are different styles of speech that can vary along dimensions such as pitch, speed, volume, syntax, and word choice (Biber & Conrad, 2009; Zwicky & Zwicky, 1982). Very seldomly can registers be found in a codified form in English. Instead, registers in English tend to be clusters of linguistic choices that occur in a given situation that have acquired cultural meaning, allowing them to indicate characteristics of interlocutors and their relationships (Agha, 2015). As a complex, context-dependent phenomenon, register is affected by any number of factors including channel and topic, and speakers employ different registers depending on their addressee and their relationship (Biber & Conrad, 2009). As such, registers recreate and reinscribe the social world through language, making them an important part of communication.

Indeed, children demonstrate the capacity to adjust their language according to context early on. By the age of two, children adjust aspects of their speech in order to account for the context at hand (e.g., whispering when telling a secret; Weeks, 1971). By the age of four, children produce Baby Talk distinctively when interacting with a baby even if they do not have an infant sibling themselves (Shatz & Gelman, 1973). Furthermore, qualitative analyses of a small sample of children suggest that by 5-6 years of age, children produce and shift between multiple registers such as Baby Talk, Doctor Talk (speech used by doctors when addressing patients), and Classroom Talk (speech that teachers and children adopt in a classroom setting) (Andersen, 1990).

In addition to producing registers, children have an understanding of the social significance their speech can play in different situations. For instance, preschool children increasingly understand the importance of deploying polite speech to adult interlocutors when making requests (Ervin-Tripp, Guo, & Lampert, 1990). In addition, preschoolers mark their social standing with their peers by adjusting their speech according to their status in relation to

their interlocutors' (Kyratzis, Marx, & Wade, 2001). For example, if a child is a higher-ranking individual, they index this by using more assertive language (e.g., giving commands), and if a child is a lower-ranking individual, they index this with more deferential language (e.g., making requests and seeking clarification). Furthermore, between ages 3 and 5 years, children appropriately acknowledge that any given speaker can change the way they talk depending on the social group their interlocutor is part of (Wagner, Vega-Mendoza, & Van Horn, 2014). That is, children recognize that when speaking to a baby, a speaker may use Baby Talk, but when the same speaker is talking to a peer, they will use less marked, casual speech. Given their attention to register, children may use it as a source of social information to learn about the social world around them.

### **Foreigner Talk**

Foreigner Talk is a register typically defined as the modifications to speech native speakers may use with non-native speakers. Foreigner Talk was first outlined by Charles Ferguson (1975), who identified it as a conventional simplification (sometimes to the point of ungrammaticality) of language, entailing other modifications such as slower, louder, and more-enunciated speech (see Table I.1 for a list of features). However, more recent research challenges the idea that there is a standard form of Foreigner Talk as Ferguson suggested. For example, Fedorova (2015) found that there were qualitatively different ways of producing Foreigner Talk in Russian when it was documented in urban versus border settings. Although these different versions of Foreigner Talk varied, they still both contained features typically associated with Foreigner Talk and deviated from speech directed towards native speakers. Additionally, the social status of foreigners in Russian urban areas is different from the status of foreigners along the border (i.e., higher status Westerners vs. lower status Chinese), and the variations in

Foreigner Talk seemed to map onto differing intentions on the part of the native speaker (i.e., ingratiating vs. pejorative).

This example points to an interesting discussion in the Foreigner Talk literature, in which there are contrasting views of the social effects of the register. On the one hand, Foreigner Talk could bridge communication so as to decrease social distance between native and non-native speakers, but on the other hand, it could serve as a socially distancing tool by native speakers (Valdman, 1981; Zuengler 1991). This dual nature of Foreigner Talk can be understood through Communication Accommodation Theory. Communication Accommodation Theory proposes that interlocutors come to a given conversation with a set of goals, beliefs, and predispositions that affect how a speaker accommodates their speech for their addressee. In turn, these adjustments affect the outcomes of the interaction (i.e., was it successful or not?) (Dragojevic, Gasiorek, & Giles, 2015). Moreover, research on intergroup communication suggests that successful linguistic accommodations (i.e., those perceived as being neither being too much nor too little) can actually improve intergroup attitudes (Palomares, Giles, Soliz, & Gallois, 2016). As such, the intended purpose of Foreigner Talk can vary: whereas one speaker's use of Foreigner Talk may be motivated by a desire to foster communication, another's may stem from their unfavorable opinions of non-native speakers. Furthermore, Foreigner Talk could result in different evaluations from a listener (either as addressee or observer) depending on whether they see the use of Foreigner Talk as being accommodative or not. However, there has been little systemic investigation into the social effects of Foreigner Talk use.

Given the potential social ramifications of Foreigner Talk, it becomes important to examine how children extract social information from native/non-native speaker interactions in which it is used. Research has documented that children exhibit some understanding of Foreigner

Talk by the age of 5. In a case study, Katz (1977) found that a native English-speaking child employed low albeit consistent levels of Foreigner Talk when interacting with her 5-year-old non-native speaking playmate. Likewise, Andersen (1990) found that between the ages of 5-8, children sporadically attempted to produce Foreigner Talk when engaging in a pretend play scenario with an experimenter and dolls. Additionally, 9-10-year-old children have been found to successfully employ both syntactic and discourse changes associated with Foreigner Talk in a communication game with a non-native speaking peer (Ravid, Olshtain, & Ze'elon, 2003). Furthermore, by 5, children seem to understand that Foreigner Talk is intended for a non-native speaking addressee, and by 8 they show adult-like levels of performance (Labotka & Gelman, under review). Altogether, these findings suggest that children in early childhood are developing their understanding and use of Foreigner Talk. Accordingly, this is a prime age to explore what social ramifications the register may have.

### **Present Studies**

In this dissertation, I explore how children glean social information about both *addressees* and *speakers* in Foreigner Talk contexts. Because of the socially-sensitive nature of register, it may serve as a source of information regarding interlocutors, particularly in intergroup communication. Given the dual-nature of Foreigner Talk, it has potential to affect children's evaluations of both speakers and addressees in either positive or negative ways. Foreigner Talk may encourage more positive evaluations of both speakers and addressees if it is seen as meaningful adjustments on the part of the speaker to foster communication with the addressee. On the other hand, it may encourage more negative evaluations of both speakers and addressees if it is seen as adjustments by the speaker intended to condescend the addressee and promote social distance.

To that end, I examine how children 5-10 years of age use registers to inform their evaluations of native/non-native speaker interactions. This age range reflects a time when children both have demonstrated understanding of Foreigner Talk and begin receiving exposure to peers of different backgrounds in school. As such, children at this age may particularly well-situated to think about the role of register in intergroup communication, including that of native/non-native speaker interactions. Furthermore, I include adult participants to serve as a point of comparison for the overall developmental trajectory. In the presented studies, I measure participants' evaluations of speakers and addressees in contexts in which Foreigner Talk is or is not used, by using questions intended to tap into dimensions that may be affected by the register use: warmth and competence.

In Chapter II, I report 2 experiments investigating how register affects children's and adults' evaluations of addressees. I investigate first whether children can use social information to inform their social judgments of others and then how they use this register in tandem with an addressee's social group information to inform their evaluations. In Chapter III, I report 2 experiments investigating how register use affects children's and adults' evaluations of speakers. I first establish whether children see register as informative about a speaker, when a maximal register contrast is presented (baby talk vs. teacher talk), and then investigate how speakers are evaluated based on their Foreigner Talk use. In Chapter IV, I report an experiment investigating how Foreigner Talk use in native/non-native speaker communication affects the evaluations of speakers and addressees. To do so, I investigate children's and adults' ratings of interlocutors in a conversation in which communication breaks down between a native and non-native speaker. In Chapter V, I discuss how the present studies provide a starting point for understanding how

children use conversational factors like Foreigner Talk to learn about non-native speakers, and I propose open questions for future investigation into the social effects of register.

*Table I.1. Documented Foreigner Talk Features*

Features	Supporting references
Slow rate	Berger & diBattista, 1993; Biersack et al., 2005; Fedorova, 2015; Ferguson, 1975; Roche, 1998; Tarone, 1980
Exaggerated Pronunciation	Chun, 2009; Ferguson, 1975; Roche, 1998; Tarone, 1980; Uther et al., 2007
Louder speech	Chun, 2009; Berger & diBattista, 1993; Ferguson, 1975; Roche, 1998; Tarone, 1980
Shorter MLU	Freed, 1981; Katz, 1981; Long, 1981; Ravid, et al., 2003; Tarone, 1980
Lexical simplification Substitutions (tomorrow → next day) Less slang/idioms Embedded definitions	Fedorova, 2015; Ferguson, 1975; Ravid et al., 2003; Roche, 1998; Tarone, 1980
Grammatical simplification Fewer complex sentences Simplified negation Copula deletion Article deletion Fewer contractions	Chun, 2009; Fedorova, 2015; Freed, 1981; Ferguson, 1975; Katz, 1981; Ravid et al., 2003; Roche, 1998; Snow et al., 1981; Tarone, 1980
Gestures	Ravid et al., 2003; Roche, 1998; Tarone, 1980
Repetition	Ferguson, 1975; Katz, 1981; Long, 1981; Ravid et al., 2003; Roche, 1998; Tarone, 1980
More questions Tag questions Yes/No questions	Freed, 1981; Katz, 1981; Long, 1981; Roche, 1998; Tarone, 1980



## **CHAPTER II**

### **The Effect of Foreigner Talk on Children's Evaluations of Addressees**

Registers vary as a result of the situational characteristics comprising any given speech event (Biber & Conrad, 2009). Among the many factors that contribute to register variation is the relationship between interlocutors, including their social status and personal dynamic. Despite the inherently social nature of register use, it has yet to be explored how social information is extracted from register use across development. In particular, registers may serve as important social information about addressees in intergroup communication by informing an observer of the speaker's feelings towards their addressee. As such, the present studies ask how children and adults use register as a source of social information about addressees, especially focusing on Foreigner Talk. In exploring how Foreigner Talk is used as social information about addressees, we can better understand both how Foreigner Talk may communicate positive or negative social information about non-native speakers and how registers may be used by children to learn about the social world more broadly.

Study 1 tests whether children use register information in isolation to evaluate addressees. Study 2 tests how children use register information in tandem with other social group information (e.g., language skills, appearance) to evaluate addressees. Together, these studies provide insight into how monolingual English-speaking children use register as social information to learn about those around them.

## **Study 1: Evaluations of Unknown Addressees**

In this study, I examined 5-8-year-old children's and adults' evaluations of unknown addressees who received three different registers: Foreigner Talk, Teacher Talk, and Peer Talk. These registers were chosen because they include different linguistic characteristics that typically map onto socially distinct addressees, allowing Teacher Talk and Peer Talk to serve as contrasts to Foreigner Talk. It is of note that Teacher Talk and Peer Talk could refer to any number of ways of speaking to their intended addressees and, therefore, could vary immensely in any given situation; however, for this study, I utilized versions of them that have previously investigated with children of this age range adapted from Wagner, Vega-Mendoza, and Van Horn (2014). Teacher Talk is a formal and deferential register (marked by proper forms of words and politeness terms) that denotes respect and some social distance from the addressee such as the relationship a student may have with their teacher. Peer Talk is a casual register (marked by a lack of politeness terms and informal forms of words, e.g., "ya" instead of "you") that demonstrates comfort and closeness with the addressee. Foreigner Talk is a highly marked register (slow, loud, over-enunciated, and simplified speech) that demonstrates an outgroup member relationship with the addressee (one that children are sensitive to).

In this study, I asked questions designed to assess participants' evaluations of two types of information: (1) addressee characteristics (liking, niceness, smartness), and (2) the relationship between speaker and addressee (who is in charge, predicted friendship). Furthermore, these questions were chosen to tap into dimensions of warmth and competence, which have been theorized to comprise the content of stereotypes (Fiske, Cuddy, & Glick, 2007). Indeed, research regarding attitudes towards accent often align with these dimensions both in adults (see Gluszek & Dovidio, 2010 for review) and children (e.g., Kinzler & DeJesus, 2013).

The contrasting social purpose of the three registers allows for distinct predictions regarding the social evaluations of addressees. For the questions regarding addressee characteristics, I predicted that the Foreigner Talk addressee would receive lower ratings than the Peer Talk and Teacher Talk addressees (who would be rated equivalently). I expected Foreigner Talk addressees to receive lower ratings than the other two addressees because I anticipated that Foreigner Talk would activate outgroup biases against the addressee. For friendship predictions, I expected the Peer Talk to receive the highest rating, with the Teacher Talk addressee receiving a lower rating and the Foreigner Talk addressee receiving the lowest rating. I anticipated these responses because the casual manner of Peer Talk may indicate closeness between interlocutors—whereas Teacher Talk may indicate respectful distance, and Foreigner Talk may indicate further distance associated with outgroup members. Finally, for ratings of who is in charge, I predicted that the Teacher Talk addressee would be rated highest, followed by the Peer Talk addressee, with the Foreigner Talk addressee receiving the lowest rating. I anticipated the Teacher Talk addressee to be rated the most in charge because its formal nature may indicate more respect, and I anticipated the Foreigner Talk addressee to be rated the least in charge because it may convey condescension towards the addressee.

## **Method**

**Participants.** Participants were 5-8-year-olds ( $N = 72$ , 36 females;  $M = 6.68$ , range = 5.00-8.79). I focused on children of the ages 5-8 because prior work has demonstrated they have knowledge of the intended addressees of these three registers (Labotka & Gelman, under review; Wagner et al., 2014; Wagner et al., 2010). I selected children who, according to parental report, were native, monolingual speakers of English (English spoken  $\geq 90\%$  of the time) and interacted with non-native speakers less than half of the time ( $M = 5.25\%$ ). Participants who did not meet

these criteria were dropped from the final sample ( $N = 1$ ). All participants were tested at a children's museum in a predominantly White (72.0%), middle class (median household income: \$57,697) university town in Southeast Michigan. The foreign-born population comprises approximately 17.9% of the town, and of that foreign-born population, 79.5% report speaking a language other than English at home and 34.2% report speaking English less than "very well" (U.S. Census Bureau, 2016).

I also tested 50 native-English-speaking, U.S. adults ( $M = 20.76$ , range = 18-46), who were recruited on the campus of a Midwestern university located in the same town where the children were tested. I did not directly collect information regarding how often participants interacted with non-native speakers. However, 12% of the university population comes from international backgrounds.

**Materials.** Three brief speech samples were used, each representing a distinct register: Foreigner Talk, Peer Talk, and Teacher Talk. The speech samples were taken from Labotka and Gelman (under review) and had been pretested by adult ratings for how well the samples fit speech directed towards the intended addressee (a peer, a teacher, and a non-native speaker, respectively). Participants rated each register sample on a 7-point scale for how well they represented speech directed towards the intended social group (1 = Not well at all, 7 = Very well). Each register sample received high ratings (Foreigner Talk: 6.48; Peer Talk: 6.66; Teacher Talk: 6.54); all mismatches (e.g., Foreigner Talk rated for a peer) received low ratings (ranging from 1.53-3.38).

In the experiment, the speaker was represented by one photograph of a young, White girl. The addressees were represented by an image of a curtain which was altered to be different

colors (yellow, purple, and orange) on each trial so that the participants could distinguish one trial from the other.

**Procedure.** Children were tested individually in a lab space at a local children’s museum. During the experiment, children wore headphones that played the audio and helped cancel out extraneous noise from the museum.

Children were first shown a picture of the speaker, who was introduced as Annie. The experimenter told each child that Annie was going to introduce herself to new people. The experimenter explained that they needed the child’s help because they could not hear or see the person Annie was talking to, so they did not know anything about the people Annie was meeting. The child was then instructed that their job was to listen to what Annie said to each person and tell the experimenter what they thought of the person based on how Annie talked to them.

On each trial, the experimenter labeled Annie and Annie’s addressee (e.g., “the person behind the yellow curtain”). They then said, “Let’s hear what Annie said to the person behind the [color] curtain,” pointed at Annie’s picture, and played the audio. After the audio played once, the experimenter said, “Let’s hear what Annie said again” and played the audio a second time to ensure that children remembered the way the speaker spoke on each trial.

After playing the audio, the experimenter told the child that she had a few questions about the person behind the curtain “based on what Annie said.” Children were then asked to rate the addressee based on their personal evaluations (like, nice, smart) and on their relational evaluations of the speaker and addressee (who is in charge, friendship) (see Appendix A). Questions were always presented in the same order to reduce the cognitive burden of responding, as register changed each trial. As such, the first three questions asked the child to focus on their personal evaluations of the addressee, and the second two questions asked the child to focus on

the relationship between the speaker and the addressee. This order was chosen to ensure that children's personal ratings of the addressee were not affected by what they thought the speaker's opinion of the addressee was. Children indicated their ratings for each question on a two part 6-point scale (see Appendix B). Children were first asked a dichotomous question in which they pointed to either thumbs up or thumbs down (e.g., "Is the person Annie talking to nice or not nice?"). The one exception to this was the question regarding in-charge, in which children were asked to pick either the speaker or the addressee as the person in charge. The children were then presented with the second part of the scale, which comprised three circles (one small, one medium, and one large), and the children were asked to quantify their evaluation as "a little bit," "a medium amount," or "a lot."

The same procedure was followed for each of the three addressees. The order of trials was randomized such that each register was heard equally first, second, and third across participants in each age group.

Adults participated in a survey version of the study, in which they were provided a written version of the instructions and labels that children received. They rated their responses on the same scale as children but without the child-friendly visual aids. Participants were tested in an outdoor space on campus with an iPad and headphones.

## **Results**

Responses were converted to numerical scores between 1-6. The lowest possible rating (e.g., "not like" "a lot") received a 1, and the highest possible rating (e.g., "like" "a lot") received a 6. As such, scores between 1-3 indicated a negative evaluation, and scores between 4-6 indicated a positive evaluation. All responses were coded in this manner save for the rating of who is in charge. In this case, lower ratings (1-3) indicated that the speaker was selected as in

charge, and higher ratings (4-6) indicated that the addressee was in charge. Because of the different coding for who was in charge, this item was analyzed separately from the rest of the ratings.

**Children.** To explore children's responses for liking, niceness, intelligence, and friendship, I conducted a mixed-models linear regression. I included register (Foreigner Talk, Peer Talk, and Teacher Talk; reference level: Foreigner Talk), question (reference level: liking), age (as continuous), and their interactions as fixed effects and participant as a random effect. The model found a main effect of register ( $F(2, 787.13) = 4.71, p = .009$ ) and an interaction of age by register ( $F(3, 199.47) = 6.48, p < .001$ ) (see Figure II.1). No other effects were significant. Children gave less positive ratings for the Foreigner Talk addressee than the Peer Talk addressee ( $\beta = -2.26, SE = 0.77, t(7787.13) = -2.92, p = .004$ ) and the Teacher Talk addressee ( $\beta = -1.76, SE = 0.77, t(787.13) = -2.27, p = .024$ ). The recipients of Peer Talk and Teacher Talk were rated equivalently ( $p = .512$ ). Although Peer Talk and Teacher Talk ratings remained consistent throughout the age range, as participants got older, they gave lower ratings to the Foreigner Talk addressee ( $\beta = -0.37, SE = 0.15, t(78.72) = -2.95, p = .014$ ). A subsequent calculation of a Johnson-Neyman interval found that after 5.43, children rated Foreigner Talk addressees lower than the other two addressees.

I additionally divided children into two age groups (5-6-year-olds and 7-8-year-olds) to conduct one sample t-tests against the midpoint of the scale (3.5) for their ratings of addressees by register. The younger age group provided positive ratings to all three addressees ( $ps < .001$ ). Older children likewise provided positive ratings for the addressees of Teacher Talk and Peer Talk ( $ps < .001$ ), but their ratings of the Foreigner Talk addressee did not differ from chance ( $t(87) = 0.57, p = .568$ ).

A separate mixed-models linear regression was conducted to investigate children's ratings of who was in charge (the speaker vs. the addressee), given that the response was on a different scale than the other question. Register (reference level: Teacher Talk), age (as continuous), and the interaction of register by age were fixed effects and participant was a random effect. I found a main effect of register ( $F(2, 141.65) = 6.79, p = .002$ ) and an interaction between age and register ( $F(2, 109.72) = 4.88, p = .003$ ). Children rated the Teacher Talk addressee as relatively more in charge, compared to the Peer Talk addressee ( $\beta = 6.10, SE = 1.67, t(141.68) = 3.64, p < .001$ ) and the Foreigner Talk addressee ( $\beta = 3.85, SE = 1.67, t(141.65) = 2.30, p = .022$ ). Additionally, as age increased, children gave higher ratings of being in charge for the Teacher Talk addressee ( $\beta = 0.63, SE = 0.20, t(180.21) = 3.09, p = .002$ ) whereas their ratings for the other two addressees did not change ( $ps \geq .177$ ). A Johnson-Neyman interval found that after 7.06, children expected the Teacher Talk addressee to be more in charge in relation to the speaker, compared to the other two addressees.

I further examined the data by dividing children into two age groups (5-6-year-olds and 7-8-year-olds) to conduct one sample t-tests to the midpoint of the scale. Both younger and older children rated the addressee of Foreigner Talk as not in charge ( $ps \leq .002$ ). Younger children did not differ from the midpoint on their ratings of who was in charge in Peer Talk trials ( $p = .438$ ), but older children rated the Peer Talk addressee as not in charge ( $t(21) = -3.04, p = .006$ ). For Teacher Talk, younger children rated the addressee as not in charge ( $t(49) = -3.32, p = .002$ ), but older children did not differ from the midpoint ( $p = .334$ ).

**Adults.** To analyze adults' responses for liking, niceness, intelligence, and friendship, I conducted a mixed-models linear regression. I included register (reference level: Foreigner Talk), question (reference level: liking), and the interaction between register and question as



fixed effects and participant as a random effect. The model found an effect of register ( $F = (2, 539) = 149.62, p < .001$ ), an effect of question ( $F = (3, 539) = 11.11, p < .001$ ), and an interaction between question and register ( $F = (6, 539) = 7.44, p < .001$ ) (see Figure II.2). Given the interaction between question and register, I report how adults' responses for each question varied between registers.

*Liking.* Adult participants rated that they liked the Foreigner Talk addressee less than the Peer Talk addressee ( $\beta = 1.92, SE = 0.21, t(98) = 9.07, p < .001$ ) and the Teacher Talk addressee ( $\beta = 0.96, SE = 0.21, t(98) = 4.53, p < .001$ ). They likewise reported liking the Teacher Talk addressee less than the Peer Talk addressee ( $\beta = -0.96, SE = 0.21, t(98) = -4.53, p < .001$ ). One sample t-tests to the midpoint of the scale found that adults gave positive ratings to the addressees of Teacher Talk and Peer Talk ( $ps < .001$ ), but their ratings of the Foreigner Talk addressee did not differ from chance ( $p = .068$ ).

*Niceness.* Adult participants rated the Foreigner Talk addressee as less nice than the Peer Talk addressee ( $\beta = 1.72, SE = 0.21, t(98) = 8.09, p < .001$ ) and the Teacher Talk addressee ( $\beta = 0.90, SE = 0.21, t(98) = 4.23, p < .001$ ). Adults also rated the Teacher Talk addressee as less nice than the Peer Talk addressee ( $\beta = -0.82, SE = 0.21, t(98) = -3.86, p < .001$ ). One sample t-tests to the midpoint of the scale found that adults gave positive ratings to the addressees of Teacher Talk and Peer Talk ( $ps < .001$ ), but their ratings of the Foreigner Talk addressee did not differ from chance ( $p = .314$ ).

*Intelligence.* Adult participants rated the Foreigner Talk addressee as less smart than the Peer Talk addressee ( $\beta = 1.20, SE = 0.22, t(98) = 5.24, p < .001$ ) and the Teacher Talk addressee ( $\beta = 1.44, SE = 0.22, t(98) = 6.29, p < .001$ ). The Peer Talk addressee and the Teacher Talk addressee were rated equally smart ( $p = .297$ ). One sample t-tests to the midpoint of the scale

found that adults gave positive ratings to the addressees of Teacher Talk and Peer Talk ( $p < .001$ ) but gave negative ratings to the Foreigner Talk addressee ( $t(49) = -2.70, p = .009$ ).

*Friendship.* Adult participants predicted that the Foreigner Talk addressee would not be as good friends with the speaker as the Peer Talk addressee ( $\beta = 2.50, SE = 0.25, t(98) = 9.83, p < .001$ ) and the Teacher Talk addressee ( $\beta = 0.80, SE = 0.25, t(98) = 2.94, p = .002$ ). They also predicted that the Teacher Talk addressee would not be as good friends with the speaker as the Peer Talk addressee ( $\beta = -1.70, SE = 0.25, t(98) = -6.69, p < .001$ ). One sample t-tests to the midpoint of the scale found that adults gave positive friendship ratings to the Peer Talk addressee ( $t(49) = 9.42, p < .001$ ) and negative friendship ratings to the Foreigner Talk addressee ( $t(49) = -6.05, p < .001$ ), but their friendship ratings for the Teacher Talk addressee did not differ from chance ( $p = .241$ ).

An additional mixed-models linear regression was conducted to investigate adults' ratings of who was in charge (the speaker vs. the addressee) with register (reference level: Teacher Talk) as a fixed effect and participant as a random effect. I found a main effect of register ( $F(2, 98) = 15.94, p < .001$ ), with the Teacher Talk addressee being rated as relatively more in charge than the addressees for Peer Talk ( $\beta = -1.52, SE = 0.28, t(98) = -5.52, p < .001$ ) and Foreigner Talk ( $\beta = -1.04, SE = 0.28, t(98) = -3.78, p < .001$ ). Participants did not rate the Peer Talk or Foreigner Talk differently ( $p = .084$ ). One sample t-tests to the midpoint of the scale for adults' ratings of who was in charge for each register found that adults rated the addressee of Teacher Talk as in charge ( $t(49) = 3.36, p = .002$ ) and the addressee of Peer Talk as not in charge ( $t(49) = -4.02, p < .001$ ). Their ratings of who was in charge for Foreigner Talk trials did not differ from chance ( $p = .204$ ).

## **Discussion**

In this study, I examined how children's and adults' ratings of unknown addressees varied based on register. Although the social roles of interlocutors are important in determining how register will be deployed, research has not previously investigated how registers might be used as social information to learn about addressees. This question is of particular interest for Foreigner Talk, given that previous research has highlighted how some features of the register may increase social distance with the addressee while others may decrease it. For this study, participants rated addressees of three different registers (Foreigner Talk, Teacher Talk, and Peer Talk) on personal (liking, niceness, and intelligence) and relational (friendship, who is in charge) dimensions. I found that by 5.5 years of age children began rating the addressee of Foreigner Talk lower on a variety of measures than the addressees of Teacher Talk and Peer Talk. In contrast, regardless of age, children did not rate Teacher Talk and Peer Talk addressees differently. Additionally, although the youngest participants did not predict any addressee would be more in charge in relation to the speaker than the other addressees, by 7, children predicted that the Teacher Talk addressee would be more in charge than the other addressees. Nonetheless, at no age did children treat recipients of Foreigner Talk as being less in charge than the Peer Talk addressee.

Adults demonstrated a similar pattern with Foreigner Talk. Like children, adults rated the Foreigner Talk addressee lower on how much they liked them, how nice they were, how smart they were, and their predicted friendship with the speaker, as compared to the addressees of Teacher Talk and Peer Talk. They also expected the Foreigner Talk and Peer Talk addressees to be less in charge than the Teacher Talk addressee. Additionally, although adults did not distinguish between the intelligence of Teacher Talk and Peer Talk addressees, they rated the

Teacher Talk addressee as not as liked, nice, or good friends with the speaker as the Peer Talk addressee.

Together, these findings suggest that children become increasingly sensitive to the social information that different registers provide. However, even our oldest child participants (i.e., 8-year-olds) did not perform completely the same as adults did. This suggests that adults have a more nuanced understand of what kinds of people are the addressees of Teacher Talk than children do. Particularly, adults may have recognized that politeness can be a distancing move which may explain why they provided lower ratings of affiliation (i.e., liking, niceness, friendship) but did not provide lower ratings of competence (i.e., intelligence, who is in charge).

The Teacher Talk results present an interesting comparison to the Foreigner Talk ratings. First, although adults rated Teacher Talk addressees as less likable or nice than Peer Talk addressees, they provided even lower ratings of the Foreigner Talk addressee. This raises the question of why the ratings of Foreigner Talk were so negative. Did adults rate the Foreigner Talk addressee lower because they were inferring something about the social group the person belonged to or because they were inferring something about the individual in particular? Second, it is notable that children did not differently evaluate Teacher Talk and Peer Talk, despite having more familiarity with teachers than with non-native speakers. There could be different reasons for this. First, Foreigner Talk is more marked than either Teacher Talk or Peer Talk. Because the changes in speech are so apparent with Foreigner Talk, this may contribute to children's attention to the potential social information associated with that register. The second possibility is that as children get older, they more often associate the registers with their intended addressees. As such, the children could rate the addressees of Foreigner Talk lower than the

other two because they have connected the register to non-native speakers, a social group they prefer less than their native-speaking ingroup (e.g., Kinzler et al., 2007).

Combined, the results from both adults and children point to more negative evaluations of an addressee who receives Foreigner Talk. However, as it stands, it is unclear whether these lower ratings are driven by an association of the Foreigner Talk addressee with non-native speakers or by some other inferences being made about an individual who receives such a marked register. By understanding what these social evaluations are reflective of, we can better understand the influence of the Foreigner Talk register on how people evaluate others.

### **Study 2: Evaluations of Addressees Based on Social Group and Register**

In Study 2, I sought to clarify better how register information informs children's evaluations of addressees –in particular, addressees of Foreigner Talk. To do so, I examined how children combine register information with social group membership to evaluate addressees. To that end, I tested children's ratings of foreign and local peers both when they received Foreigner Talk and when they received Peer Talk. Given the findings of Study 1, we know that both children and adults will provide higher ratings to addressees of Peer Talk than to addressees of Foreigner Talk. However, it remains unclear what is driving this tendency. It could be that participants recognize that Foreigner Talk is intended for non-native speakers and give addressees lower ratings as a result, but it could also be that participants see register as informative in of itself about an addressee above and beyond information about social group membership.

Study 2 provided participants with additional information regarding the individuals receiving Foreigner Talk. If register operates strictly by informing participants of an addressee's social group, we should see that participants do not distinguish between variation in register

between two addressees of the same social category, because their social group is already provided. However, if register provides additional information about an addressee beyond the social group they are in, we should see different ratings of addressees in the same social category depending on the register they receive. In particular, I predicted that the local peer who received Peer Talk would be rated the highest. I expected this because the local peer would already be preferred as an ingroup member, and the register information would confirm this status. I predicted the foreign peer who received Peer Talk would receive the next highest ratings. I expected this because the foreign peer would likely receive lower ratings by virtue of being an outgroup member but receiving Peer Talk may help mitigate this by indicating feelings of warmth and competence. Finally, I predicted that addressees who received Foreigner Talk, regardless of whether they were local or foreign peers, would be rated lowest. For the foreign peer receiving Foreigner Talk, I expected low ratings because of their outgroup membership and the use of a register that confirms this status. For the local peer receiving Foreigner Talk, I expected low ratings because the use of Foreigner Talk with an ingroup member may indicate a lack of warmth and competence for a person who should theoretically have both. It is also worth noting that either recipient of Foreigner Talk could receive lower ratings than the other Foreigner Talk recipient. The foreign peer who receives Foreigner Talk could receive the lowest ratings because they have compounding outgroup cues (i.e., social group information and register). However, the local peer who received Foreigner Talk could receive the lowest ratings because there is no apparent reason for them to receive the register, which may elicit other inferences about their competence.

**Participants.** Participants were 5-10-year-olds ( $N = 98$ , 47 females;  $M = 7.40$ , range = 5.00-10.97). In this study, participants were provided more information about addressees than in

Study 1; it was unclear whether this would make the task easier for the participants (because the additional information would clarify the relevant features of the characters) or more difficult (because the information-processing demands were increased). As such, I included 5-year-olds in the sample (despite not differentiating between addressees in Study 1) and expanded the age range up to 10-year-olds. I selected participants who, according to parental report, were native, monolingual speakers of English (English spoken  $\geq 90\%$  of the time) and interacted with non-native speakers less than half of the time ( $M = 7.76\%$ ). Children who did not meet these criteria were not included in the final sample ( $N = 14$ ). Participants were tested both in a local children's museum and in an on-campus lab, located in the same community as Study 1.

Participants also included 57 native-English-speaking, U.S. adults ( $M = 22.79$ , range = 18-35) on the same campus as in Study 1.

**Materials.** The same brief speech samples for Foreigner Talk and Peer Talk were used as in Study 1.

In the experiment, the speaker was again represented by one photograph of a young, White girl dressed in typical American clothing. Addressees were represented by four different pictures: two were shown as young, White girls in typical American clothing matched for eye and hair color; two were shown as young Quechua girls in traditional Quechua clothing.

**Procedure.** Children were tested individually. The stimuli were presented through a PowerPoint presentation on a laptop; those who were tested in the children's museum wore headphones to listen to the audio samples and help cancel out the noise of the museum.

The experimenter told the participants that the speaker ("Annie") was going to introduce herself to new people. Children were told that their job was to tell the experimenter what they thought about the people the speaker was talking to.

Participants received four trials. For half of the trials, the addressees were shown as young White girls in typical American clothing and labeled as “a girl Annie’s age from nearby.” In the other two trials, the addressees were shown as young Quechua girls in traditional Quechua clothing and labeled as “a girl Annie’s age from far away who is just learning English.” The images and addressee labels were taken from Labotka and Gelman (under review), who found that young 5-year-olds needed a combination of cues regarding a foreign addressee to treat them as an appropriate recipient of Foreigner Talk. In one trial for each addressee (peer and foreign peer), participants heard Peer Talk, and in the other, they heard Foreigner Talk. As such, half the time there was a match between the addressee and the register used (e.g., foreign peer receiving Foreigner Talk), and half the time there was a mismatch (e.g., local peer receiving Foreigner Talk).

In each trial, the experimenter first pointed to and labeled the speaker (“Annie”) and then pointed to and labeled the addressee (e.g., “a girl Annie’s age form nearby”). They then pointed back to the speaker and told the participant they were going to hear what Annie said to the addressee. The experimenter then played the audio. This was repeated twice to ensure the participants recalled who the addressee was and the register used.

Participants were then asked to rate the addressee on the same 6-point scale used in Study 1. Participants indicated how much they liked the addressee, how nice they were, and how smart they were. They also rated who they felt was more in charge (speaker or addressee) and how good friends the speaker and addressee were going to be. The procedure was repeated for all four trials. The order of trials was randomized in a Latin Square design.

Adults participated in a survey version of the study. In it, participants were provided a written version of the instructions and. They rated the responses on the same scale as children



but without the child-friendly visual aids. Participants were tested in an outdoor space on campus with an iPad and headphones.

## Results

Responses were coded in the same manner as Study 1. As the ratings of who is in charge were again coded differently from the other evaluations, that item was analyzed separately.

**Children.** I conducted a mixed-models linear regression for children's ratings of liking, niceness, intelligence, and friendship with age (as continuous), register (Foreigner Talk and Peer Talk; reference level: Foreigner Talk), addressee (foreign peer and local peer; reference level: foreign peer), question (reference level: liking), and their interactions as fixed effects and subject as a random effect. All found effects were subsumed under an age x question interaction and an age x addressee x register interaction. There were no effects of addressee x question, register x question, any of the 3-way interactions (except age x addressee x register), or the 4-way interaction, so they were dropped from the model. The remaining effects were subsumed under an age x question interaction ( $F(3, 1473) = 8.39, p < .001$ ) and an age x addressee x register interaction ( $F(1, 1473) = 6.78, p = .009$ ) (see Figure II.3). As such, the subsequent analyses will investigate these two interactions.

For the age x question interaction, older children provided lower ratings than younger children for all questions except for intelligence (like:  $\beta = -0.21, SE = 0.07, t(97) = -3.19, p = .002$ ; nice:  $\beta = -0.19, SE = 0.06, t(97) = -3.39, p = .001$ ; smart:  $\beta = -0.09, SE = 0.05, t(97) = -1.73, p = .087$ ; friendship:  $\beta = -0.34, SE = 0.06, t(97) = -5.68, p < .002$ ). Additionally, as age increased, participants provided lower ratings for friendship compared to their ratings on the other questions (like:  $\beta = -0.12, SE = 0.05, t(1473) = -2.51, p = .012$ ; nice:  $\beta = -0.15, SE = 0.05, t(1473) = -3.08, p = .002$ ; smart:  $\beta = -0.24, SE = 0.05, t(1473) = -4.97, p < .001$ ). Older

participants likewise provided lower ratings for liking compared to intelligence than younger participants ( $\beta = -0.12$ ,  $SE = 0.05$ ,  $t(1473) = -2.45$ ,  $p = .014$ ).

Children throughout the age range rated the foreign addressees the same when they received Foreigner Talk as when they received Peer Talk ( $p = 0.51$ ). As children got older, though, they started giving lower ratings to the local peer addressee who received Foreigner Talk than the local peer who received Peer Talk ( $\beta = 0.21$ ,  $SE = 0.05$ ,  $t(691) = 4.54$ ,  $p < .001$ ). A Johnson-Neyman interval found that the age at which children first began giving lower ratings to the local peer who received Foreigner Talk than to the one who received Peer Talk was 7.25.

Looking at the interaction another way: children throughout the age range rated those who received Peer Talk the same, whether they were local or foreign addressees ( $p = .249$ ). However, as children got older, they began to give lower ratings to the local peer who received Foreigner Talk than the foreign peer who did ( $\beta = -0.20$ ,  $SE = 0.05$ ,  $t(691) = -3.91$ ,  $p < .001$ ). A Johnson-Neyman interval found that before 7.79, children gave higher ratings to the local peer who received Foreigner Talk than the foreign peer who did; however, between 7.79-10.39, children did not differentially rate the two, and by 10.40, the pattern reversed such that children provided higher ratings for the foreign peer who received Foreigner Talk than the local peer who did. I additionally divided children into three different age groups (5-6-year-olds, 7-8-year-olds, and 9-10-year-olds) to conduct one sample t-tests against the midpoint of the scale (3.5) for their ratings by addressee and register. The younger two age groups rated all addressees positively ( $ps < .001$ ). The oldest children rated all addressees positively ( $ps < .001$ ) except for the peer who received Foreigner Talk—whose ratings did not differ from the midpoint ( $t(95) = 1.59$ ,  $p = .114$ ).

A second mixed-models linear regression was conducted looking at children's ratings of who is in charge with age (as continuous), addressee, register, and their interactions as fixed effects and participant as a random effect. I found no effects.

**Adults.** I conducted a mixed-models linear regression for adults' ratings of liking, niceness, intelligence, and friendship predictions, with question (reference level: liking), register (reference level: Foreigner Talk), addressee (reference level: foreign peer), and their interactions as fixed effects and participant as a random effect (see Figure II.4). There were no effects of addressee x question or the three-way interaction, so they were removed from the final model. The final model found main effects of addressee ( $F(1, 856) = 10.189, p = .001$ ), register ( $F(1, 846) = 179.73, p < .001$ ), and question ( $F(3, 846) = 23.00, p < .001$ ), an interaction between addressee and register ( $F(1, 846) = 17.22, p < .001$ ), and an interaction between register and question ( $F(3, 846) = 10.46, p < .001$ ). In the main effect of addressee, adults gave lower ratings to the local peer addressee than to the foreign peer addressee ( $\beta = -0.50, SE = 0.10, t(846) = -5.19, p < .001$ ). For the main effect of register, adults gave lower ratings to the addresses who received Foreigner Talk than the ones who received Peer Talk ( $\beta = 1.30, SE = 0.15, t(846) = 8.48, p < .001$ ). Although there was an interaction between register and question, adults always rated the speakers who received Foreigner Talk lower than the speakers who received Peer Talk ( $p < .001$ ). The subsequent analyses will break down the two-way interaction of addressee and register.

The addressee x register interaction indicated that the local peer and foreign peer who received Peer Talk were rated highest and equally well ( $p = .36$ ). The foreign peer who received Foreigner Talk was rated lower than either recipient of Peer Talk, either the local peer ( $\beta = 0.89, SE = 0.12, t(398) = 7.14, p < .001$ ) or the foreign peer ( $\beta = 0.64, SE = 0.10, t(398) = 6.59, p <$

.001). Finally, the local peer who received Foreigner Talk was rated the lowest of all participants ( $ps < .001$ ) I additionally conducted one sample t-tests to the midpoint of the scale and found that adults rated all addressees positively ( $ps < .001$ ) except for the local peer who received Foreigner Talk—whose ratings did not differ from the midpoint ( $t(227) = 1.77, p = .078$ ).

A second mixed-models linear regression was conducted looking at adults' ratings of who is in charge, with addressee (reference level: foreign peer), register (reference level: Foreigner Talk), and addressee x register as fixed effects and participant as a random effect. I found no effect of register nor an interaction between register and addressee, so they were dropped from the model. The final model included a main effect of addressee ( $F(1, 168) = 4.35, p = .038$ ) wherein participants gave higher ratings to the local peer addressees than the foreign peer addressees ( $\beta = 0.37, SE = 0.18$ ). One sample t-tests comparing adults' responses for each addressee to the midpoint of the scale found that adults rated both addressees as not in charge ( $ps < .001$ ).

## **Discussion**

In this study, I tested how information regarding an addressee's social group (local vs. foreign peer) was incorporated with register information (Peer Talk vs. Foreigner Talk), to understand better how Foreigner Talk informs ratings of foreign addressees. I asked whether lower ratings of the Foreigner Talk addressee in Study 1 were strictly a result of participants mapping Foreigner Talk onto a negatively evaluated social group (i.e., non-native speakers) or whether register provides added social information about an addressee. To that end, Study 2 crossed social group and register information such that sometimes register aligned with the intended social group and other times did not. The results suggest that register can provide

information to listeners about an addressee beyond their membership in a social group, but only at a certain point in development.

Children younger than 7 years of age in this study seemed to have relied strictly on the social group information provided about addressees, and not their register. This is evidenced by the lower ratings that children provided to the foreign peer who received Foreigner Talk compared to the local peer who did. Likewise, children provided lower ratings for the foreign peer who received Peer Talk compared to the local peer who did. Between the age of 7 and 8, children's patterns of ratings changed, and they began to rate the local peer who received Foreigner Talk more negatively than the one who received Peer Talk. Furthermore, at the high end of the age range (10.40 years), children provided lower ratings to the local peer who received Foreigner Talk than the foreign peer who did. This distinction indicates that children had started to see register as information about an individual that went beyond what they learned based on social group information alone. Even so, children did not show the same pattern with the foreign peers. That is, foreign peers were always rated the same regardless of the register provided, suggesting that they did not find register as adding more information when it came to the outgroup.

Adults showed one pattern of response that mirrored what children did. Namely, like the older children, adults rated the local peer who got Foreigner Talk lower than both the local and foreign peer who got Peer Talk. This indicates that both older children and adults made negative social inferences about the local addressee based on their receiving Foreigner Talk that went beyond inferences based on the addressee's social group membership. However, adults' responses varied from children when it came to the foreign peer addressee. That is, children did not distinguish their ratings of the foreign peer based on register use, but adults did. Adults

provided lower ratings for the foreign peer who received Foreigner Talk than the one who received Peer Talk; indeed, adults' ratings of the foreign peer who received Peer Talk were equivalent to their ratings of the local peer for received Foreigner Talk. Together, this suggests that adults used register information to inform their evaluations of addressees from both social groups whereas children only did so for the local peer.

Adults' ratings indicated that they integrated social group and register information in making evaluations of addressees of Foreigner Talk. For both registers, Foreigner Talk addressees received lower ratings than Peer Talk addressees, indicating that register was informative about the individual beyond their social group category. However, the effects were not additive. Most notably, the local peer who received Foreigner Talk was rated more negatively than the foreigner who received Foreigner Talk. Similarly, the negative effects of receiving Foreigner Talk were smaller for the foreign peer than the local peer. This suggests that although Foreigner Talk signals lesser warmth and competence for its recipient, it does so less when there is a perceived need for it (e.g., just learning English).

Older children also appear to have begun to interpret register through the lens of other social information. However, this only seemed to be done when the social information was about their ingroup member. Their lack of differentiation for the foreign peer may suggest that they did not see the information provided by register as informative about an outgroup addressee above and beyond their group membership. It is notable that previous work has indicated that by the age of 5, monolingual children with minimal interactions with non-native speakers expect Foreigner Talk to be directed to foreign peers (Labotka & Gelman, under review). As such, their variations in ratings from adults cannot be explained by a lack of sensitivity to the register.

## General Discussion

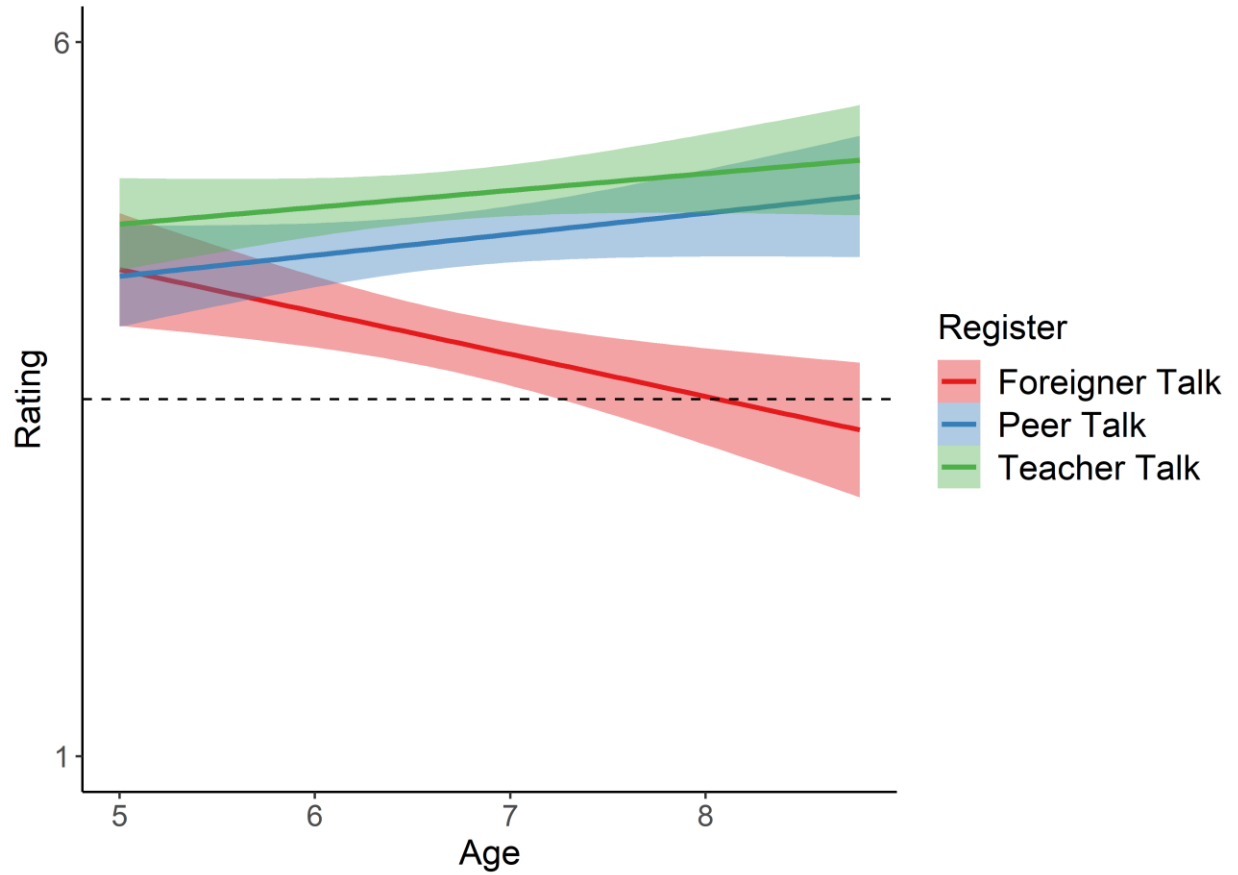
Altogether, Studies 1 and 2 found that children and adults used register information to make inferences about addressees. Study 1 found that children and adults differentially rated unknown addressees depending on the register they received. Notably, addressees receiving Foreigner Talk received lower evaluations from both child and adult participants. Study 2 sought to understand whether the ratings of Foreigner Talk addressees were strictly a result of participants mapping the register onto an outgroup member or whether the register provided additional information about the addressee. In Study 2, I found that register was used to inform evaluations in addition to social group membership, with adults doing this in a more nuanced way than children when it came to evaluations of foreigners. Moreover, effects were not just additive but rather interactive, such that Foreigner Talk addressed to a local peer led to more negative evaluations than Foreigner Talk addressed to a foreign peer.

These studies speak to the social importance of register in understanding addressees. In addition to reflecting social group membership, registers can inform observers about the individual addressee to further flesh out their evaluations of a person. As previously noted, Foreigner Talk has largely been conceptualized in two, contrasting ways—helpful and affiliative vs. condescending and distancing. In both studies, children’s and adults’ evaluations of an addressee were negatively affected by them receiving Foreigner Talk, lending credence to the notion that Foreigner Talk may encourage social distance from its addressee. Indeed, for adult participants the negative evaluations toward foreign addressees were dampened when the foreigner received Peer Talk; adults rated addressees (local and foreign) equivalently when they received Peer Talk. This may suggest that register can be an important way of mitigating negative evaluations stemming from outgroup membership.

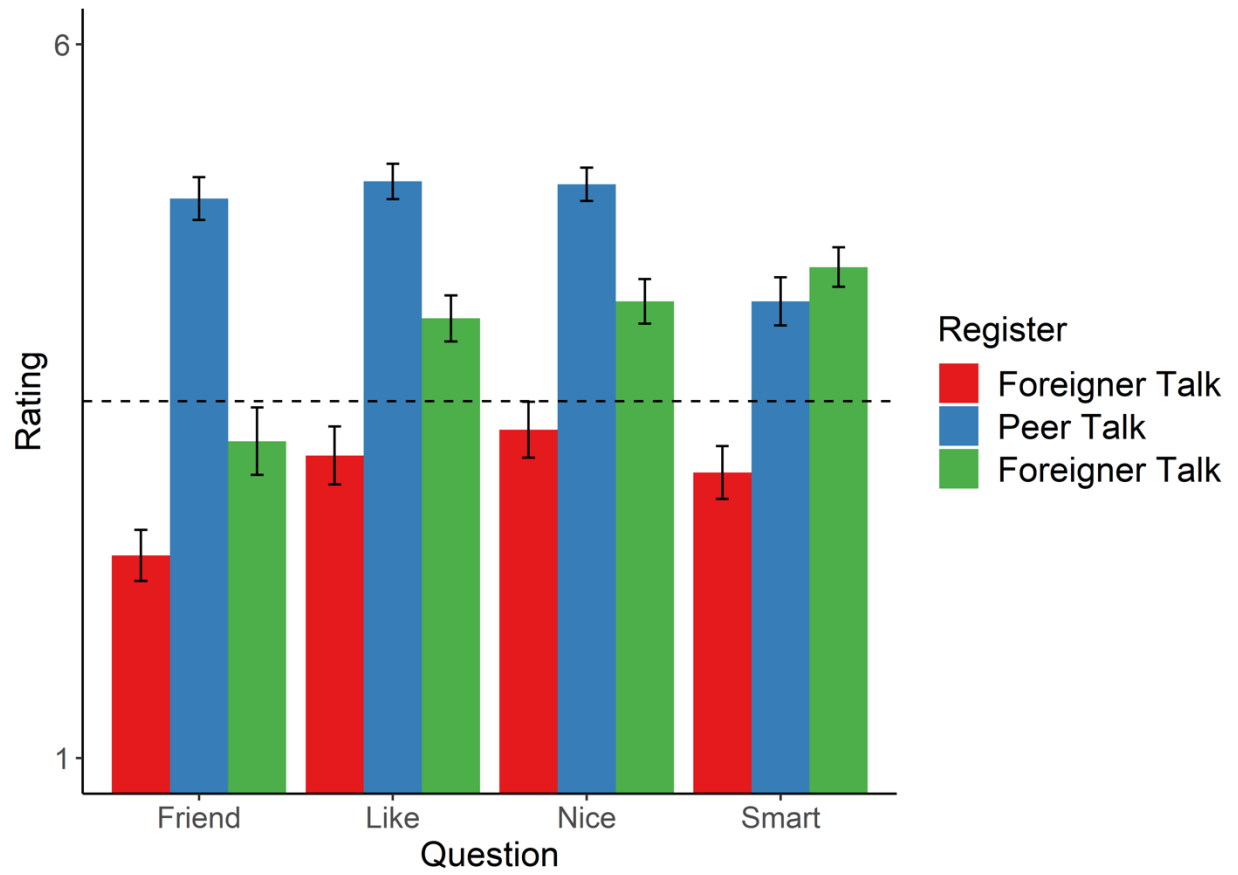
Additionally, the present studies open a number of questions about Foreigner Talk. For example, adults and the oldest children rated the local peer who received Foreigner Talk lower than the foreign peer who did. It is possible that their evaluations were a result of there being less of an apparent need for Foreigner Talk, leading them to believe it not to be a socially-sensitive accommodation and instead a negative reflection on the addressee. As such, there remains the question of how contextual information such as an addressee's apparent need for Foreigner Talk influences the social meaning of the register.

Furthermore, the present studies have only investigated one side of the equation: the addressee. It remains unknown whether Foreigner Talk also reflects on the speaker. What are the characteristics and motivations of the speaker who is using this register? Is the speaker trying to be helpful or condescending? More work is needed to understand how children use Foreigner Talk as a cue to understand interlocutors in context. I will turn to this next, in Studies 3 and 4.

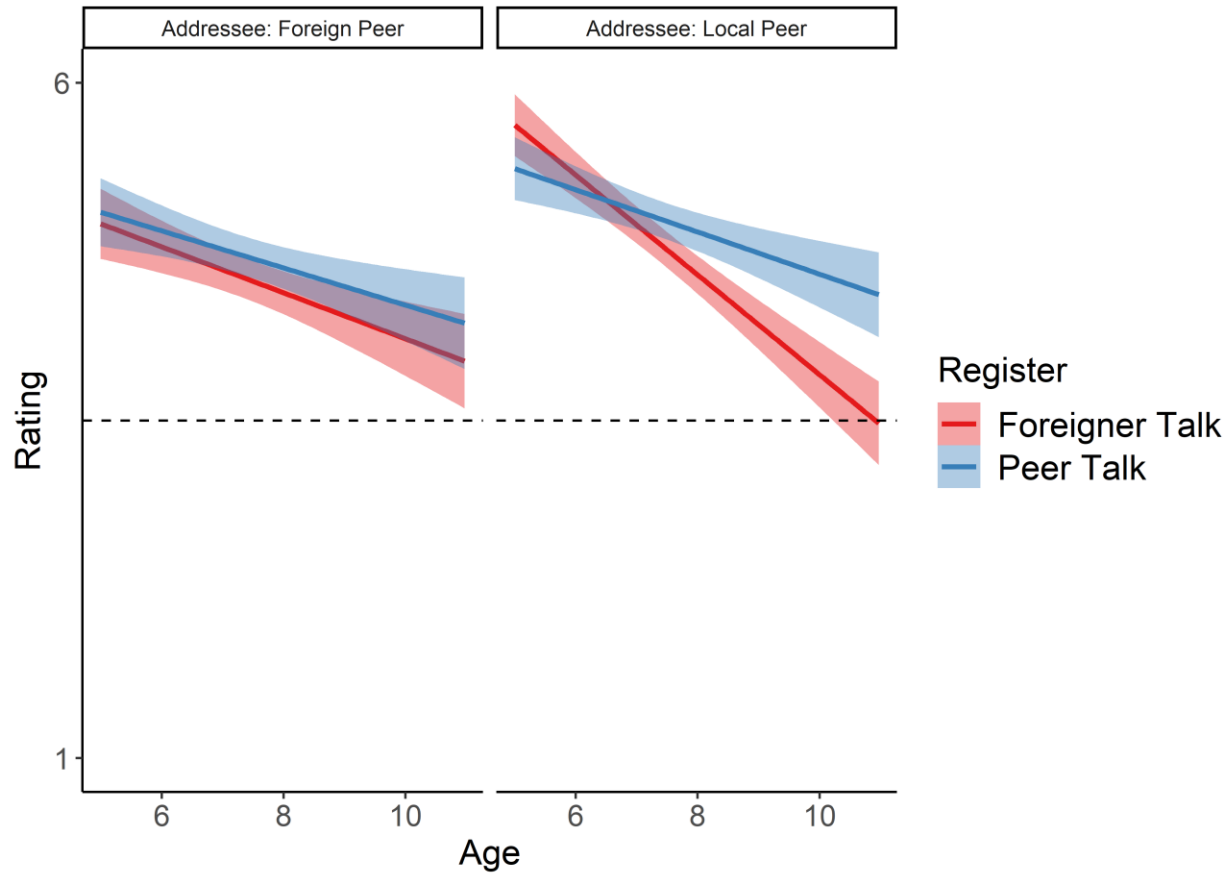




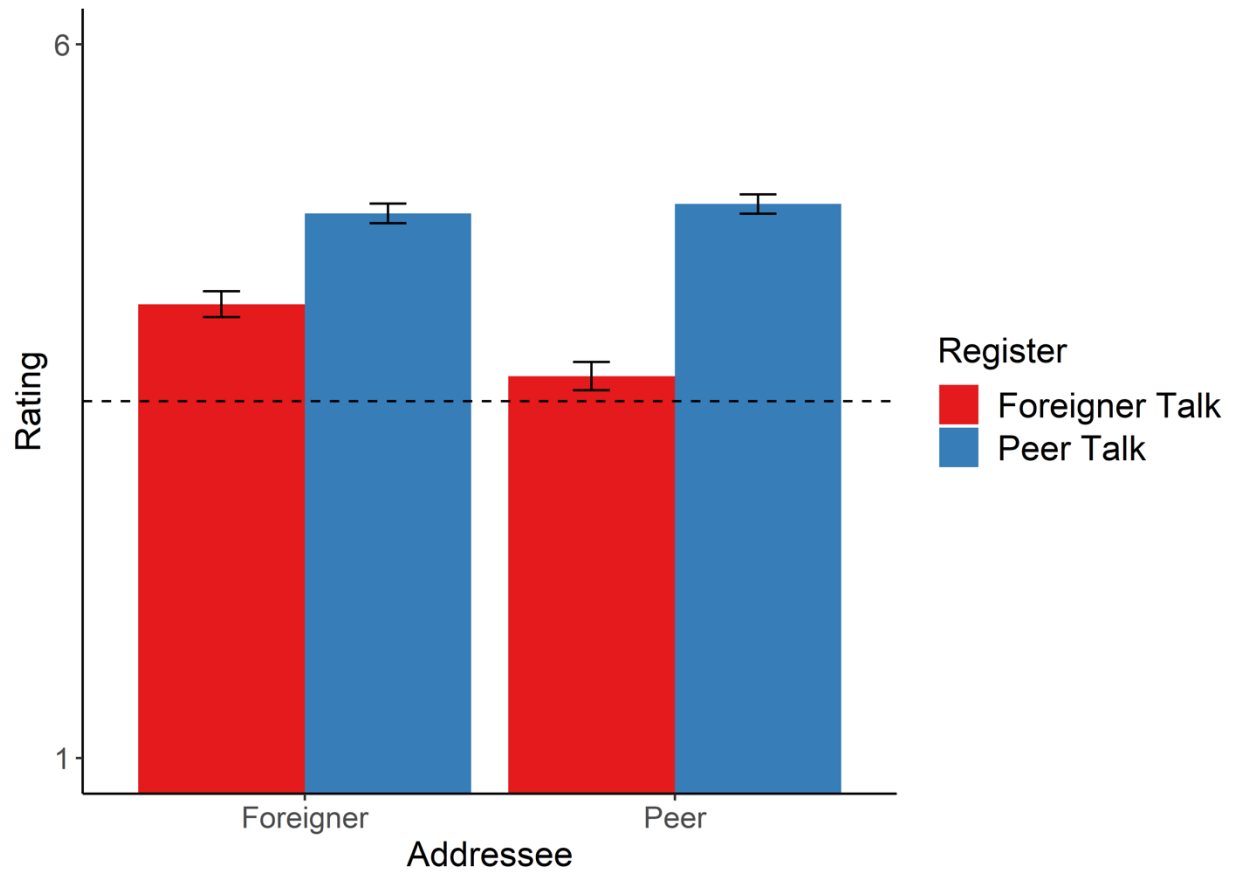
*Figure II.1.* Study 1 Children: Average child ratings on a scale of 1-6, as a function of child age and speech register. Higher scores indicate that addressees of the register receiving higher ratings on the dimensions of liking, niceness, intelligence and friendship.



*Figure II.2.* Study 1 Adults: Average adult ratings on a scale of 1-6, as a function of question and speech register. Higher scores indicate higher ratings for the addressee.



*Figure II.3.* Study 2 Children: Average child ratings on a scale of 1-6, as a function of child age, speech register, and addressee. Higher scores indicate that addressees of the register receiving higher ratings on the dimensions of liking, niceness, intelligence and friendship.



*Figure II.4. Study 2 Adults: Average adult ratings on a scale of 1-6, as a function of speech register and addressee. Higher scores indicate that addressees of the register receiving higher ratings on the dimensions of liking, niceness, intelligence and friendship.*

## CHAPTER III

### The Effect of Register on Children's Evaluations of Speakers

Studies 1 and 2 suggest that register is used to inform evaluations of addressees. However, register use may also be used to inform evaluations of speakers. The registers employed in any given conversation vary as a function of both who is being addressed and who is doing the addressing. For example, factors such as the speaker's status and social characteristics may influence how register is deployed (Biber & Conrad, 2009). Furthermore, as previously noted, Foreigner Talk could be seen as either a prosocial behavior—a speaker is adjusting their speech to ensure successful communication with a non-native speaker, or as an antisocial behavior—a speaker is being condescending to the non-native speaker. As such, Studies 3a and 3b are designed to test whether register use informs children's and adults' evaluations of *speakers* (vs. addressees), again with a focus on the register of Foreigner Talk.

#### **Study 3a: Children's Evaluations of Speakers Based on Baby Talk Use**

Study 3a is designed to lay the groundwork for Study 3b, which will focus on how Foreigner Talk speakers are evaluated. Whether children will evaluate *speakers* based on their register use (for any register) is currently unknown. On the one hand, children may not see register as providing meaningful social information about a speaker, because individuals often adjust aspects of their speech (e.g., tone, vocabulary, etc.) according to the context at hand. In other words, given that a speaker's register varies across contexts, children may view it as non-stable and thus uninformative. On the other hand, children may indeed see register as providing

meaningful social information about a speaker, because adjusting speech according to context indicates social sensitivity. As such, Study 3a presents a methodological first step to determine whether children will evaluate speakers based on the register they use and if so, at what age they may do so. To that end, Study 3a provides a maximal contrast of registers (Baby Talk vs. Teacher Talk) to gauge whether children rate speakers differently when their register use either matches the addressee (e.g., speaking Baby Talk to a baby) or mismatches the addressee (e.g., speaking Baby Talk to a teacher). I predicted that the latter would be viewed as socially unacceptable and therefore would negatively reflect on the speaker.

## **Method**

**Participants.** Participants were 5-8-year-olds ( $N = 71$ , 42 females;  $M = 6.69$ , range = 5.12-8.88). This age range was selected because Study 1 showed that children in this age range could use register to inform their evaluations of an interlocutor (i.e., an addressee). Unlike the previous two studies, I did not require that children have minimal interactions with non-native speakers, because there was no Foreigner Talk used in this study. As such, there was not a concern regarding how their closeness to a non-native speaker may affect their responses. However, as with the previous studies, I selected monolingual children (children who spoke English  $\geq 90\%$  of the time;  $M = 0.59\%$ ). This selection criteria was kept in place, because previous research suggests children with experience speaking languages with formal vs. informal second-person singular forms may develop understandings of formal registers (e.g., Teacher Talk) more quickly than monolingual English-speakers (as English currently only uses one set of singular second-person pronouns) (Wagner et al., 2014). Therefore, only monolingual children were selected for this study in order to keep children's capacity with register equivalent across studies. Ten participants were tested but excluded from the final sample due to being bilingual.

Participants were tested at a children's museum and an on-campus lab in a predominantly White (72.0%), middle class (median household income: \$57,697) university town in Southeast Michigan.

Additionally, 57 native-English-speaking, U.S. adults ( $M = 22.05$ , range = 18-56) were recruited on the campus of a Midwestern university located in the same town in which the children were tested.

**Materials.** Two brief speech samples were used: one employing Baby Talk and another employing Teacher Talk. Speech samples were taken from Labotka and Gelman (under review) where they had been pretested for how well they represented speech directed toward the intended addressee (i.e., a baby for Baby Talk, a teacher for Teacher Talk) on a 7-point scale (1 = Not well at all, 7 = Very well); the two samples were found to be highly representative of speech directed toward their intended addressee (Teacher Talk:  $M = 6.54$ ; Baby Talk:  $M = 6.51$ ) and not very representative of speech directed towards the other addressee in this study (ranging from 1.53-1.53).

In the experiment, speakers were represented by four different young, White girls, matched for hair color. The images of the speakers were selected to be similar in appearance to reduce the likelihood that children's ratings would be affected by physical differences between the speakers. The addressees were represented by pictures of either babies or women with items associated with teaching (e.g., an apple, chalkboard).

**Procedure.** All children were tested individually in a quiet space with a laptop computer in a museum or lab setting. Children in the museum also wore headphones to help cancel out any extraneous noise from the environment when listening to the speech samples.

Children were introduced to photographs of four girls, one at a time. They were told that each of the girls was going to introduce themselves to different people. The children were told that their job was to listen to the girls talk and to tell the experimenter what they thought about them.

For each trial, the participant saw a picture of one of the speakers on the left side of the screen and a picture of their intended addressee on the right side of the screen. The experimenter first pointed to the speaker and labeled her as a “girl” and then told the participant that the girl was talking to either “a little baby” or “a teacher”, depending on the trial, while pointing to the addressee on the right side of the screen. The experimenter then told the participant that they were going to hear what the speaker said to the addressee; the experimenter then played an audio recording of either Baby Talk or Teacher Talk, depending on the trial. After that, the experimenter reminded the participant of who the speaker and addressee were and played the audio again to ensure participants remembered the scenario accurately.

For half of the trials, the addressee was a baby, and for the other half, a teacher. In half the trials, the speaker used the appropriate register for the addressee (e.g., Teacher Talk for the teacher), and in the other half, the speaker used the inappropriate register for the addressee (e.g., Baby Talk for the teacher).

After playing the audio, the experimenter told the child that they had some questions about the girl who was talking. Children then were asked to rate the speaker based on how much the participant liked her, how nice she was, how smart she was, how in charge she was in relation to the addressee, and how good of friends she was going to be with the addressee. Questions were always presented in the same order to reduce the cognitive load across trials. Questions that pertained to children’s own evaluations of the speaker (i.e., like, nice, smart)



came first to ensure that children's responses were not affected by their reasoning about questions about the relationship between the speaker and addressee (i.e., who is in charge, friendship). Children indicated their ratings for each question on a two-part, child-friendly 6-point scale (see Appendix B). Children first responded to a dichotomous question (e.g., "Do you like or not like the girl who was talking?"), and then responded to a follow-up question that quantified their previous response (e.g., "How much do you (not) like her? A little bit, a medium amount, or a lot?"). The same procedure was done until the participant had received all four trials. The order of trials was randomized in a Latin Square design across participants.

Adults participated in a survey version of the study. In it, participants were provided a written version of the instructions and labels that children received verbally from the experimenter. They rated the responses on the same scale as children but without the child-friendly visual aids. Participants were tested in an outdoor space on a campus with an iPad and headphones.

## **Results**

Participants' responses were converted into numerical scores for each question ranging between 1-6. The lowest ratings (e.g., "not like" and "a lot") received a 1, and the highest ratings (e.g., "like" and "a lot") received a 6. Therefore, scores between 1-3 indicate a negative evaluation of the speaker whereas scores between 4-6 indicate a positive evaluation. Each question was coded in this manner except for the question of who is in charge. For this question, ratings between 1-3 indicated that the addressee was in charge, and ratings between 4-6 indicated that the speaker was in charge. As this question was coded differently from the rest, it was analyzed separately. Children and adults were analyzed separately for two reasons. First, there was a large age gap between the child and adult participants, making it inappropriate to use age

as a continuous variable in my analyses. Second, I had no theory-based reason to expect change throughout the adult age range, making it unnecessary to include age as a factor in my analysis of the adults' data.

**Child Analyses.** For children, I conducted a mixed-model regression on the ratings (excluding the 'in charge' question; see above), with age (as continuous), register (Baby Talk vs. Teacher Talk; reference level: Baby Talk), addressee (baby vs. teacher; reference level: baby), question (liking, niceness, intelligence, friendship; reference level: liking), and their interactions as fixed effects and participant as a random effect. My model found effects of register ( $F(1, 1034) = 12.29, p = .006$ ) and age ( $F(1, 69) = 20.19, p < .001$ ) as well as interactions between register and addressee ( $F(3, 1034) = 10.41, p = .011$ ), between register and age ( $F(1, 1034) = 49.39, p < .001$ ), and among age, register, and addressee ( $F(3, 1034) = 14.32, p < .001$ ) (see Figure III.1). Given that the lower-order effects are subsumed under the 3-way interaction, my subsequent analyses focused on this interaction.

As children's age increased, they provided progressively lower ratings of the speaker who used Baby Talk with a teacher compared to the one who used Teacher Talk with a teacher ( $\beta = 0.57, SE = 0.10, t(495) = -5.42, p < .001$ ). Children also provided lower ratings of the speaker who used Baby Talk with a baby than the one who used Teacher Talk with a baby ( $\beta = 1.05, SE = 0.11, t(495) = -9.60, p < .001$ ), although this did not interact with age ( $p = .079$ ). Children's ratings of a speaker who used Baby Talk got lower with participant age, regardless of addressee ( $\beta = -0.42, SE = 0.15, t(86.44) = -2.82, p = .006$ ). Finally, children increasingly with age provided higher ratings of the speaker who used Teacher Talk with a teacher than of the speaker who used Teacher Talk with a baby ( $\beta = 0.25, SE = 0.08, t(494.06) = 3.29, p = .001$ ).

I further explored how children rated speakers in different trials by calculating Johnson-Neyman intervals which indicate at what point in a moderating variable (in this case, age) the slope between two different trials becomes significant (Bauer & Curran, 2005). When a speaker used Baby Talk with either addressee, children of all ages rated the speaker lower than speakers who used Teacher Talk regardless of their addressee. Until 6.49, children rated speakers who used Baby Talk the same regardless of addressee, but after that point, children gave lower ratings to the speakers who used Baby Talk with a teacher than those who used it with a baby. Additionally, until 6.91, children provide equivalent ratings for speakers using Teacher Talk, but after that point, they provide higher ratings to the speaker who used Teacher Talk with a teacher than those who used it with a baby.

I additionally conducted one-sample t-tests of children's responses compared to the midpoint of the scale (3.5) by age group (5-6-year-olds and 7-8-year-olds), register, and addressee to determine whether their evaluations of speakers were positive or negative. Children always provided positive ratings to speakers who used Teacher Talk, regardless of who the addressee was ( $ps < .001$ ). Children in the younger age group likewise provided positive ratings to speakers using Baby Talk regardless of the addressee ( $ps < .001$ ), but 7-8-year-olds provided ratings equivalent to the midpoint when Baby Talk was used, both with a baby ( $t(99) = 0.51, p = .609$ ) and with a teacher ( $t(99) = -1.82, p = .072$ ).

An additional mixed-model regression looked at children's ratings of who is in charge, including addressee (reference level: baby), register (reference level: Baby Talk), age, and their interactions as fixed effects, and participant as a random effect. The model found only a significant effect of addressee ( $F(1, 212) = 586.15, p < .001$ ), with children providing lower ratings of being in charge for speakers who were talking to teachers than speakers who were

talking to babies ( $\beta = -3.37$ ,  $SE = 0.14$ ,  $t(212) = -24.21$ ,  $p < .001$ ). Indeed, one sample t-tests to chance found that children rated the speaker as in charge of the baby ( $t(141) = 21.15$ ,  $p < .001$ ) but rated the teacher as in charge of the speaker ( $t(141) = 12.56$ ,  $p < .001$ ).

**Adult analyses.** I conducted a mixed-model regression with register (reference level: Baby Talk), addressee (reference level: baby), question (reference level: liking), and their interactions as fixed effects and participant as a random effect. I found effects of addressee ( $F(1, 836.2) = 60.58$ ,  $p < .001$ ), register ( $F(1, 836.2) = 378.99$ ,  $p < .001$ ), question ( $F(3, 836.1) = 64.80$ ,  $p < .001$ ), and interactions of addressee x register ( $F(1, 836.2) = 163.96$ ,  $p < .001$ ) and register x question ( $F(3, 836.1) = 11.41$ ,  $p < .001$ ) (see Figure III.2). Given that the main effects were subsumed under the 2-way interactions, my subsequent analyses focused on the latter.

*Addressee x Register Interaction.* Adults provided higher ratings of the speakers who used Teacher Talk compared to the speakers who used Baby Talk, regardless of their addressee ( $ps < .001$ ). They additionally provided higher ratings of the speaker who provided Teacher Talk to a teacher than of the speaker who provided Teacher Talk to a baby ( $\beta = 0.38$ ,  $SE = 0.11$ ,  $t(396.17) = 3.44$ ,  $p < .001$ ) and higher ratings of the speaker who provided Baby Talk to a baby than of the speaker who provided Baby Talk to a teacher ( $\beta = -1.52$ ,  $SE = 0.12$ ,  $t(397.09) = -13.05$ ,  $p < .001$ ). One sample t-tests to the midpoint of the scale found that adults gave negative ratings to the speaker who used Baby Talk with a teacher ( $t(226) = -9.76$ ,  $p < .001$ ), but they otherwise gave positive ratings to speakers ( $ps < .001$ ).

*Register x Question Interaction.* For each question asked, the adults provided higher ratings for the speaker who used Teacher Talk than the speaker who used Baby Talk ( $ps < .001$ ).

An additional mixed-model regression was conducted for adults' ratings of who was in charge, with fixed effects of register (reference level: Baby Talk), addressee (reference level:

baby), and their interaction and a random effect of participant. I found a main effect of addressee ( $F(1, 166.82) = 236.30, p < .001$ ) and an interaction between register and addressee ( $F(1, 166.82) = 4.78, p = .030$ ). Regardless of register, adults rated the speaker talking to the teacher as less in charge than the speaker talking to the baby ( $ps < .001$ ). Adults further rated the speaker who used Baby Talk with the teacher as more in charge than the speaker who used Teacher Talk with the teacher ( $\beta = -0.64, SE = 0.27, t(55.15) = -2.38, p = .021$ ). A one sample t-test to the midpoint found that adults rated both speakers who talked to babies to be the one in charge ( $ps < .001$ ). Both speakers who talked to a teacher were rated as being not in charge, both when using Teacher Talk ( $t(55) = -7.33, p < .001$ ) and when using Baby Talk ( $t(56) = -3.15, p = .003$ ).

## **Discussion**

In this study, I examined whether children and adults would differentially evaluate speakers based on their register use (i.e., the register as well as to whom it was addressed). Although speaking appropriately in a given situation is an important social skill, little work has been done to investigate the developmental trajectory of how register use can inform social evaluations of a speaker. To that end, I provided participants a maximal contrast of Baby Talk and Teacher Talk, wherein they rated speakers who used one of the registers with either a baby or a teacher.

Overall, both adults and children demonstrated sensitivity to the register a person used when providing evaluations. Children and adults provided lower ratings of speakers who used Baby Talk than to speakers who used Teacher Talk, indicating that at all ages, children in the study used the register a speaker employed to evaluate them. However, the youngest children tested evaluated speakers solely on the register they provided and did not take into consideration the context in which it was deployed. Before 6.5, children did not rate the speaker who used

Baby Talk with a teacher lower than the speaker who used Baby Talk with a baby, in contrast to older children and adults. Similarly, below 7 years of age, children did not rate the speaker who used Teacher Talk with a baby lower than the speaker who used Teacher Talk with a teacher. In contrast, older children and adults did show this distinction.

It is of note that both adults and children indicated that the speakers who spoke to babies were in charge and those who spoke to teachers were not, regardless of the register deployed. This indicates that although register can be an important source of social information, it is just one cue among others.

This study sets the stage for examining how Foreigner Talk use may affect children's evaluations of speakers. I confirmed that children of all ages evaluated a speaker based on the register they used, as evidenced by lower ratings for the speakers who used Baby Talk compared to the speakers who used Teacher Talk. However, given that children did not demonstrate sensitivity to context in their evaluations of speakers until 6 years of age, I focused on these older children in Study 3b.

### **Study 3b: Children's Evaluations of Speakers Based on Foreigner Talk Use**

In Study 3b, I examined whether Foreigner Talk affected children's and adults' ratings of speakers. This study built upon Studies 2 and 3a. Study 2 demonstrated that up through 10 years of age, children increasingly incorporated context and register in their evaluations of addressees who received Foreigner Talk. Study 3a showed that starting at about 6 years of age, children began to account for the context in which Baby Talk was deployed to inform their ratings of speakers. As such, Study 3b examined 6-10-year-old children.

### **Method**

**Participants.** Participants were 6-10-year-olds ( $N = 67$ , 36 females;  $M = 8.54$ ; range = 6.15-10.97). According to parental report, children were monolingual and spoke another language  $\leq 10\%$  of the time ( $M = 0.67\%$ ). Additionally, as with Studies 1 and 2, I only included children who had infrequent interactions with non-native speakers,  $< 50\%$  of the time ( $M = 5.49\%$ ). Ten additional children did not fit these requirements and were dropped from the final sample. An additional two children were dropped from the final sample for not completing all four trials of the study. Participants were tested in the same museums as in Study 3a.

Fifty-two native English-speaking adult participants ( $M = 23.82$ , range = 18-83) were recruited on the campus of a Midwestern university located in the same town in which the children were tested. An additional 5 adult participants were tested but were dropped for not attempting all trials.

**Materials.** The materials were the same as in Study 2 (i.e., audio, images). Participants saw four different child speakers talking to four different addressees—depicted either as local peers or as foreign peers. In each trial, participants heard audio clips of either Peer Talk or Foreigner Talk.

**Measure Development.** As in the previous studies, participants provided ratings on liking, niceness, intelligence, friendship, and who is in charge. Additionally, in order to ensure that my measures were tapping into relevant features of Foreigner Talk, I gathered open-ended responses from 98 non-native English-speaking adults and 97 native English-speaking adults regarding what they thought a speaker was doing when they used Foreigner Talk.

Responses were coded for mention of six, non-exclusive content categories: understanding (e.g., “I want to make sure they understand what I am telling them.”); language (e.g., “They might not know my language that well.”); social (e.g., “We are outsiders with much

lower status.”); intelligence (e.g., “I might think that they are less intelligent than I am.”); helping (e.g., “Usually they are just trying to be helpful.”); rudeness (e.g., “Very few do it to be rude.”). Reliability was established by two coders independently coding 20% of participants’ responses ( $\kappa_{\text{Average}} = 0.87$ ,  $\kappa_{\text{Range}} = 0.80-1$ ). Responses were also coded for their valence (positive, negative, neutral) ( $\kappa = .86$ ).

Using the coded responses from participants, I conducted a multiple correspondence analysis. The analysis yielded two main dimensions, with the first dimension accounting for 24.1% of the variance ( $\lambda = 0.28$ ) and the second dimension accounting for 18.4% of the variance ( $\lambda = 0.21$ ) (see Figure III.3). The first dimension corresponds to response valence, with the positive end closely associated with helping and the negative end closely associated with rudeness. The second dimension corresponds to competence vs. warmth, with responses of intelligence on one end and social responses on the other.

The second dimension of this analysis supported preexisting measures that I have used in previous studies (i.e., intelligence, friendship). However, from this analysis, I found that positive and negative responses regarding speakers of Foreigner Talk were partly driven by the ideas of helpfulness and rudeness. Given that these factors were not already covered in the extant measures, I included new questions of helpfulness and rudeness in this study.

**Procedure.** Participants were tested with the same procedure as in Study 3a. Participants were introduced in each trial to either a local or foreign peer as the addressee with the same labels and information provided as in Study 2. There were four trials total—two in which each addressee (local peer; foreign peer) received Foreigner Talk and two in which each addressee received Peer Talk. Trials were counterbalanced across participants with a Latin Square design.



Participants were provided the questions of liking, niceness, intelligence, who is in charge, and friendship in the same order as Study 3a. The two new questions added from the multiple correspondence analysis (helpfulness and rudeness) were asked after the original questions to keep the question order otherwise equivalent between the two studies. Rudeness was asked last due to its negative valence, to prevent it from affecting other responses.

As with the other questions, participants were first asked a dichotomous question for helpfulness and rudeness (e.g., “Was the girl being helpful or not helpful?”) and then were asked to quantify their choice on a three-point scale. For the rudeness question, the scale in Appendix B could not be presented to participants in the same way as it was for the other questions. As such, each question in this study received its own dichotomous scale. The full set of dichotomous scales is shown in Appendix C.

## **Results**

Responses were coded in the same manner as in Study 3a. Helpfulness was coded such that an affirmative response (i.e., “helpful”) was given the higher set of ratings (5-7). Non-affirmative responses (i.e., “not helpful”) were given the lower set of ratings (1-3). Rudeness was reverse coded such that an affirmative response (i.e., “rude”) was given the lower set of ratings (1-3), and non-affirmative responses (i.e., “not rude”) were given the higher set of ratings (5-7).

As with Study 3a, ratings of who is charge were analyzed separately, and children and adults received separated analyses.

**Child Analyses.** Preliminary analyses found no effects of question type for liking, niceness, intelligence, friendship, helpfulness, or rudeness. As such, question type was excluded as a factor. I conducted a mixed-models linear regression for children’s ratings of liking, niceness, intelligence, friendship, helpfulness, and rudeness, with age (as continuous), register

(Foreigner Talk vs. Peer Talk; reference level: Foreigner Talk), addressee (foreign peer vs. local peer; reference level: foreign peer), and their interactions as fixed effects and participant as a random effect. I found interactions of addressee x register ( $F(1, 1533) = 29.25, p < .001$ ) and age x addressee x register ( $F(1, 1533) = 47.42, p < .001$ ) (see Figure III.4). Given that the lower-order effects are subsumed under the three-way interaction, the subsequent analyses will focus on the latter.

As age increased, children gave higher ratings to the speaker who provided Foreigner Talk to the foreign peer addressee than the one who used Peer Talk with the same addressee ( $\beta = -0.27, SE = 0.07, t(735) = -4.01, p < .001$ ). A Johnson-Neyman interval found that this effect began at 7.00 years of age. In contrast, for items involving a peer addressee, older children gave lower ratings to the speaker who used Foreigner Talk than the one who used Peer Talk ( $\beta = 0.39, SE = 0.06, t(733) = 6.19, p < .001$ ). A Johnson-Neyman interval found that children started to make this distinction after 8.28.

Looking at the data another way: for a speaker using Foreigner Talk, older children gave higher ratings when the addressee was the foreign peer than when it was the local peer ( $\beta = -0.35, SE = 0.05, t(733) = -6.58, p < .001$ ), and according to a Johnson-Neyman interval, they started showing this distinction at 7.75. Conversely, for a speaker using Peer Talk, older children gave lower ratings when the addressee was the foreign peer than when it was the local peer ( $\beta = 0.31, SE = 0.06, t(735) = 5.24, p < .001$ ), and according to a Johnson-Neyman interval, they started showing this distinction at 7.30.

I additionally divided children into three different age groups (6-year-olds, 7-8-year-olds, 9-10-year-olds) to conduct one-sample t-tests against the midpoint of the scale (3.5) for their ratings by addressee and register. Each age group evaluated speakers using Peer Talk positively,

regardless of the addressee ( $ps < .001$ ). Likewise, each age group evaluated speakers using Foreigner Talk with the foreign peer addressee positively ( $ps \leq .001$ ). However, although the 6-year-olds and 7-8-year-olds evaluated speakers using Foreigner Talk with a peer addressee positively ( $ps \leq .005$ ), 9-10-year-olds ratings were neither positive nor negative ( $t(149) = -0.36, p = .721$ ).

A second mixed-models linear regression was conducted looking at children's ratings of who is in charge, with age (as continuous), addressee, register, and their interactions as fixed effects and participant as a random effect. I found no effects.

**Adult Analyses.** I conducted a mixed-models linear regression for adults' ratings of liking, niceness, intelligence, friendship, helpfulness, and rudeness with register (Foreigner Talk vs. Peer Talk; reference level: Foreigner Talk), addressee (foreign peer vs. local peer; reference level: foreign peer), question (reference level: liking), and their interactions as fixed effects and subject as a random effect. I found main effects of addressee ( $F(1, 1180) = 14.61, p < .001$ ), register ( $F(1, 1180) = 266.32, p < .001$ ), and question ( $F(5, 1180) = 19.89, p < .001$ ), as well as an interactions between register x question ( $F(5, 1180) = 4.96, p < .001$ ). Adults gave higher ratings to the speaker who talked to the local peer than the one who talked to the foreign peer ( $\beta = 0.25, SE = 0.07, t(1180) = 3.82, p < .001$ ). A one-sample t-test to the midpoint of the scale (3.5) found that adults rated speakers positively regardless of whether they were talking to the foreign peer ( $t(623) = -8.84, p < .001$ ) or local peer ( $t(619) = 13.26, p < .001$ ). Adults also gave lower ratings to the speaker who used Foreigner Talk than the one who used Peer Talk ( $\beta = 1.47, SE = 0.16, t(1180) = 9.09, p < .001$ ). Indeed, although there was an interaction between register and question, participants always rated the speaker who used Foreigner Talk lower than the speaker who used Peer Talk ( $ps < .001$ ). A further t-test against the midpoint of the scale found

that although adults rated the speaker who used Peer Talk positively ( $t(619) = 24.01, p < .001$ ), they did not rate the speaker who used Foreigner Talk positively or negatively ( $t(623) = 1.83, p = .067$ ).

Another mixed-models linear regression was conducted looking at adults' ratings of who is in charge, with addressee (reference level: foreign peer), register (reference level: Foreigner Talk), and their interaction as fixed effects and participant as a random effect. I found effects of addressee ( $F(1, 220.97) = 10.17, p = .002$ ) and register ( $F(1, 220.97) = 10.80, p = .001$ ).

Participants rated the speaker as more in charge when they were talking to foreign peers than to local peers ( $\beta = 0.25, SE = 0.07, t(1180) = 3.82, p < .001$ ) and when the speaker used Peer Talk instead of Foreigner Talk ( $\beta = 1.47, SE = 0.16, t(1180) = 9.09, p < .001$ ). One sample t-tests against the midpoint of the scale found that adults rated the speaker as in charge regardless of register or addressee ( $ps < .001$ ) (see Figure III.5).

## **Discussion**

In this study, I investigated whether children and adults differentially rated speakers who used Foreigner Talk depending on the context in which it was deployed. I found that children older than 7.00 began to differentially evaluate speakers based on their use of the Foreigner Talk register. In particular, children older than 7 rated speakers more positively when they spoke to a foreign addressee using Foreigner Talk than Peer Talk, as well as when they spoke to a peer addressee using Peer Talk than Foreigner Talk. Similarly, children older than 7 rated speakers higher when they gave Foreigner Talk to a foreign peer compared to a local peer and also when they gave Peer Talk to a local peer instead of a foreign peer. Children generally provided positive ratings for participants, but at the oldest age group, 9-10-year-olds, children's ratings of the speaker who used Foreigner Talk with the peer did not differ from the midpoint.

Adults showed different patterns than children. Most notably, adults always gave speakers who used Foreigner Talk lower ratings than the speakers who used Peer Talk, regardless of addressee. Furthermore, although adults gave positive ratings to the speakers who used Peer Talk, their ratings of the speaker who used Foreigner Talk did not differ from the midpoint on the scale. This suggests that adults although adults did not have positive feelings about the person who used Foreigner Talk, they did not have negative feelings about them either. Although the lack of interaction with addressee suggests that adults did not find Foreigner Talk more or less appropriate given the context of addressee, it may be that adults are ambivalent about the use of Foreigner Talk because they need more contextual information (e.g., hearing the addressee's language ability) in order to determine how the use of the register informs their evaluations of the speaker. It is also possible that adults' ratings of Foreigner Talk could be driven by adults falling into two categories: those with positive opinions of Foreigner Talk and those with negative opinions. However, of the 52 adult participants, only 19 participants always provided positive ratings (i.e., an average  $\geq 4$ ) for the speakers who used Foreigner Talk, and only 11 always provided negative ratings (i.e., an average  $\leq 3$ ) for those speakers. As such, a plurality of participants provided a mix of positive and negative evaluations for speakers who used Foreigner Talk. Therefore, more work is needed to understand what drives adults' ratings of speakers who use Foreigner Talk.

Although children in the observed age range undergo developmental change, the oldest children still made different inferences about speakers than adults. Younger children in this sample did not show differentiation in their ratings of speakers based on register or who they were addressing, but older children and adults did. Both older children and adults rated speakers similarly when they addressed a local peer—giving higher ratings when Peer Talk was used and

lower ratings when Foreigner Talk was used. However, older children rated speakers more positively when Foreigner Talk was used with a foreign peer whereas adults never gave more positive ratings when Foreigner Talk was used by a speaker. This indicates that although children were attending to a speaker's register use, they did not make more negative judgments based on Foreigner Talk use when adults did.

### **General Discussion**

Studies 3a and 3b sought to answer two questions: 1) whether/when children evaluate a speaker based on their register use, and 2) whether/when children use Foreigner Talk use to inform their evaluations of speakers. Although a sizeable body of research has demonstrated that children are sensitive to a speaker's linguistic choices as social information, it had yet to be investigated how they might do so with register. These studies suggest that children do use register to evaluate speakers, both Baby Talk versus Teacher Talk (Study 3a) and Foreigner Talk versus Peer Talk (Study 3b).

Altogether, I found that younger children (5-6-year-olds) showed less sensitivity to using register to evaluate speakers than older children and adults. In Study 3a, children of all ages provided lower ratings to speakers who used Baby Talk compared to Teacher Talk. However, children younger than 6 did not attend to information about the addressee, in making their evaluations. This suggests that young children were attending to the register at hand but not necessarily how it was used in context. Moreover, in Study 3b, 6-year-olds did not show any distinction between their ratings of speakers based on register use (i.e., Foreigner Talk vs. Peer Talk). Children reliably select babies as the intended recipient of Baby Talk by the age of 3 (e.g., Wagner et al., 2010), and reliably select foreign addressees as the intended recipient of Foreigner Talk by the age of 5 (Labotka & Gelman, under review). As such, children's understanding of

the typical contexts in which a register is used may precede their ability to evaluate speakers based on whether they use registers in said contexts. Furthermore, in Study 1, children evaluated *addressees* by the register they received starting by 5.5 years—indicating that children may initially find register use more informative about addressees than speakers. However, these findings occurred in different contexts, so an investigation in which children evaluate speakers and addressees in the same context can help clarify whether children use register as information about an addressee before they use it as information about a speaker.

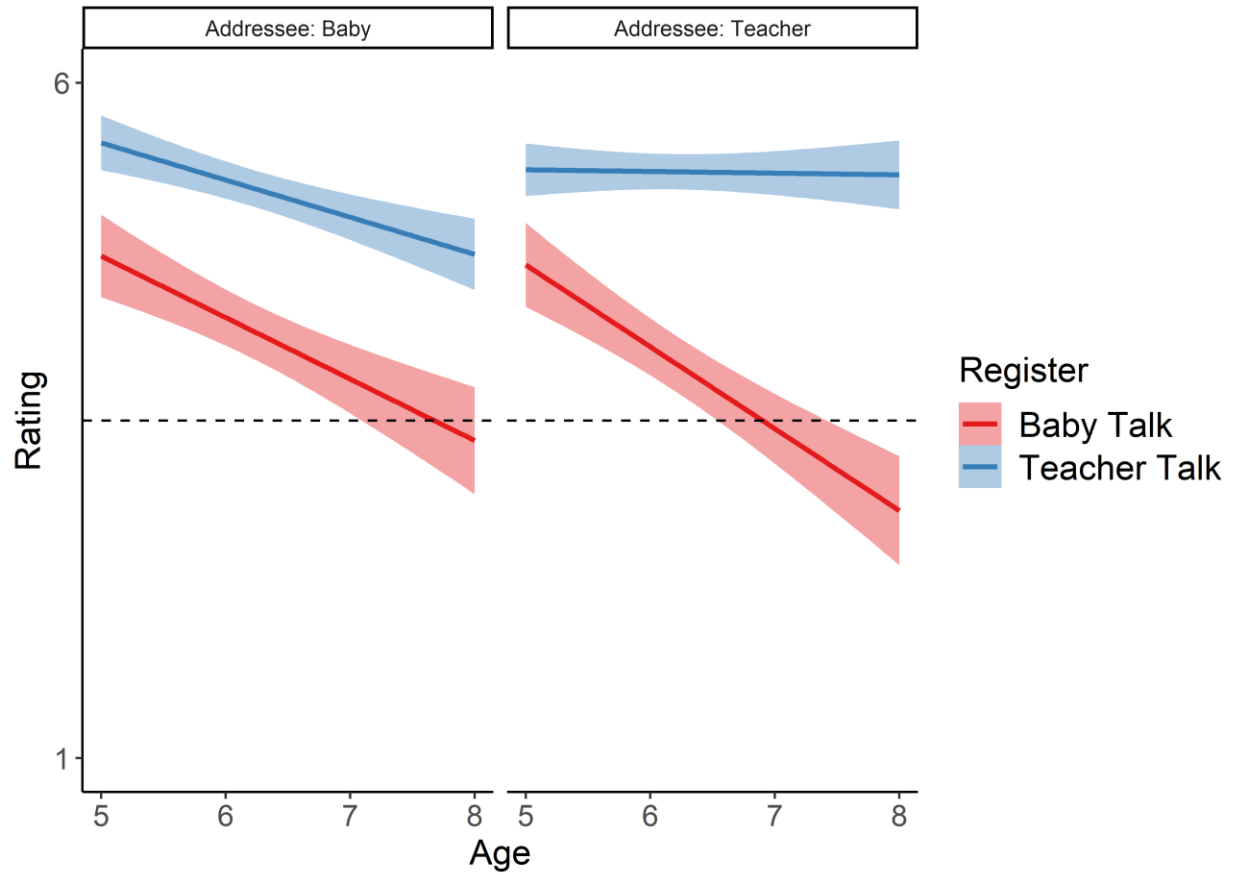
In contrast to the younger children, the older children in Studies 3a and 3b (7-10 years of age) provided ratings not only based on register but also the addressee to whom it is directed. In Study 3a, older children provided higher ratings when Baby Talk was used with a baby than when it was used with a teacher, and provided higher ratings when Teacher Talk was used with a teacher than when it was used with a baby. Similarly, children older than 7 in Study 3b provided higher ratings when speakers used both Foreigner Talk and Peer Talk with the recipient typically associated with each register (i.e., foreign peer and local peer, respectively). As such, both studies provide evidence that older children may evaluate speakers based on whether their language use is sensitive to the social context at hand.

However, it is of note that older children still differed from adults in Study 3b, as adults provided lower ratings for speakers using Foreigner Talk across the board. This difference may result from children understanding the contexts in which Foreigner Talk is typically used but not yet having a negative evaluation of its use, as adult speakers seem to do. Adults may view Foreigner Talk as rude or condescending (see also Ruscher, 2001). Indeed, roughly half of the 97 native speakers used in the measure development characterized Foreigner Talk with a negatively valenced description, and only 24% gave responses with a positive valence. This converging

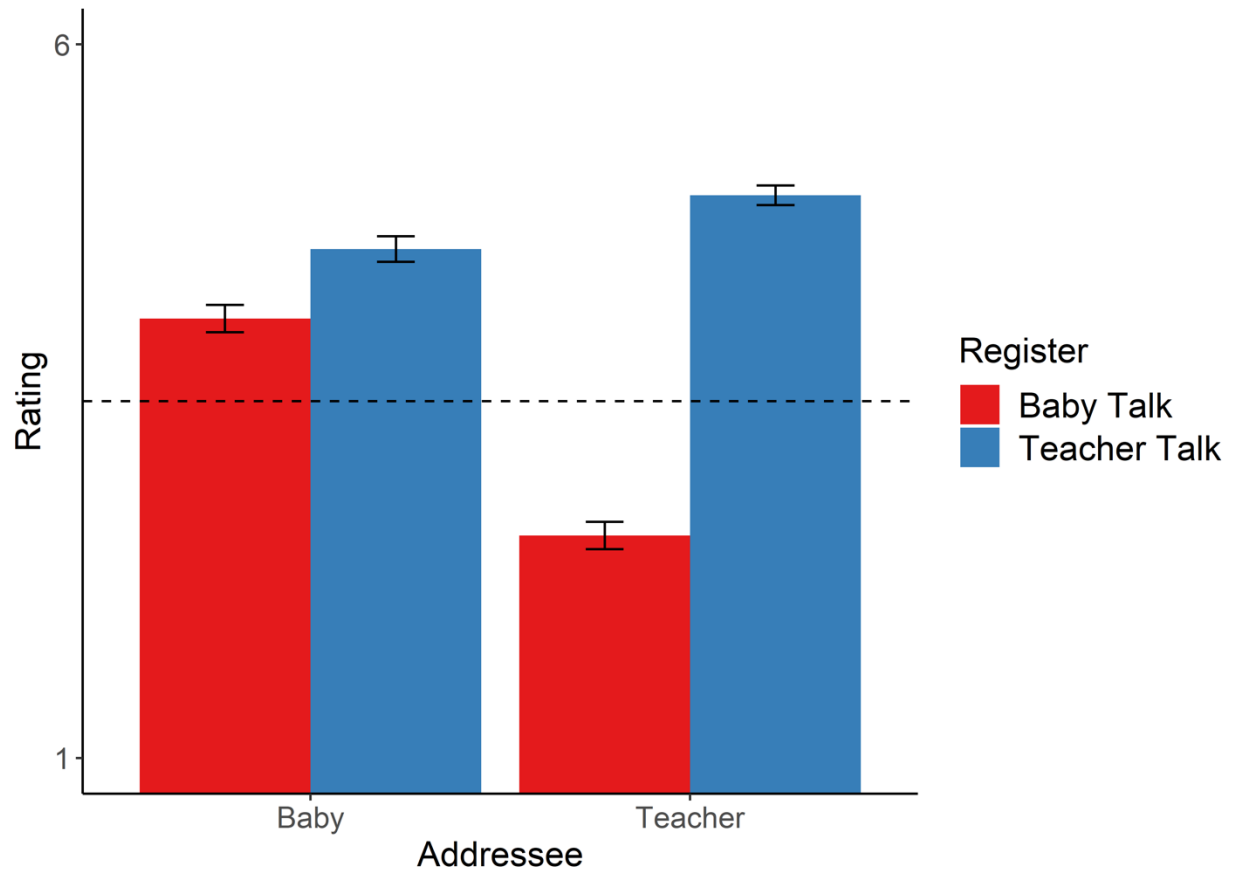
evidence suggests that adults may have a negative opinion regarding the use of Foreigner Talk, although where this stems from and how it interacts with preexisting biases against non-native speakers requires future investigation, especially given adults' demonstrated bias against non-native speakers (e.g., Gluszek & Dovidio, 2010).

In sum, these studies provide the first developmental investigation into how register use can affect evaluations of a speaker, and the role of context (i.e., addressee) in these evaluations. Younger children evaluated speakers based on their register use but did not incorporate the addressee information. Older children incorporated addressee information into their evaluations of speakers, but they still differed from adults in the way this was done when Foreigner Talk was employed. These findings provide insight into how children attend to register as social information about speakers both in and out of Foreigner Talk contexts.

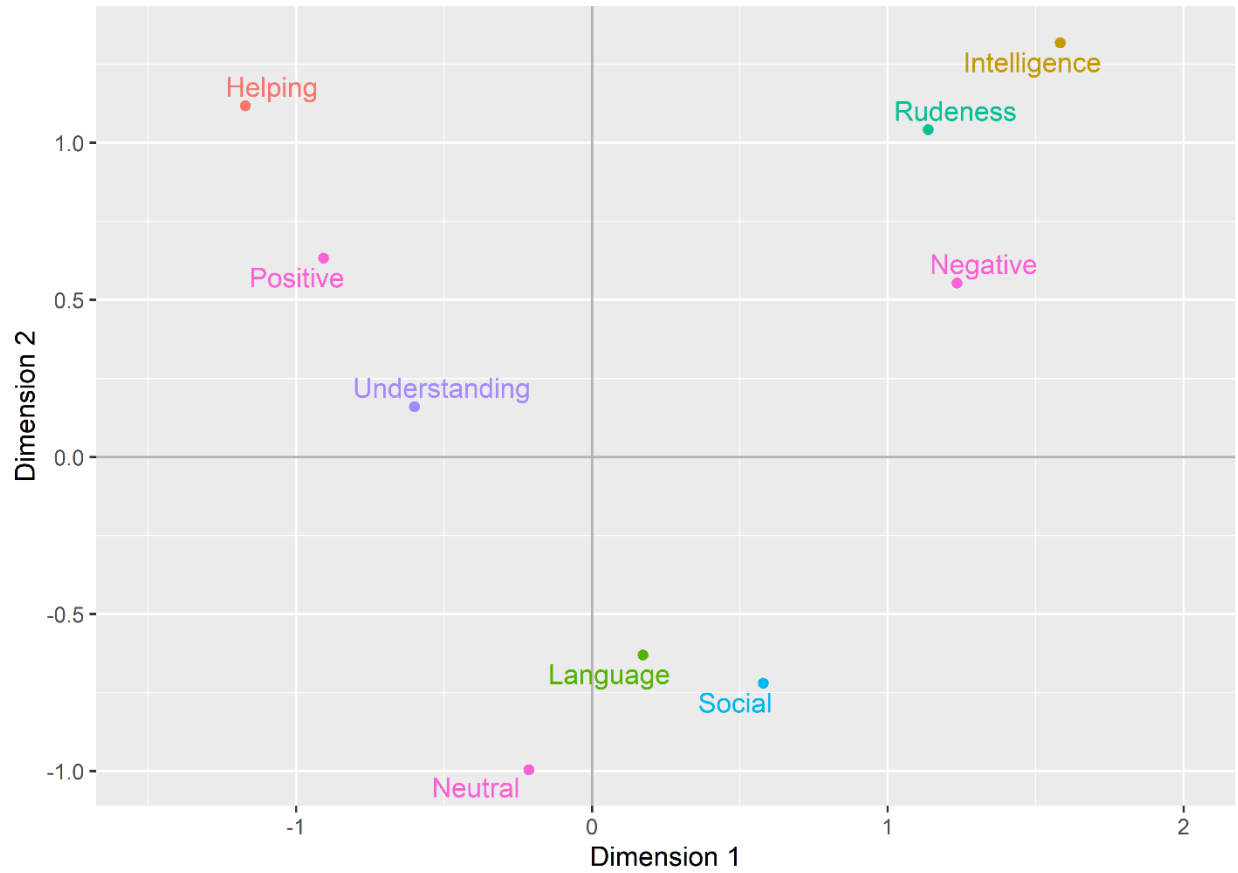




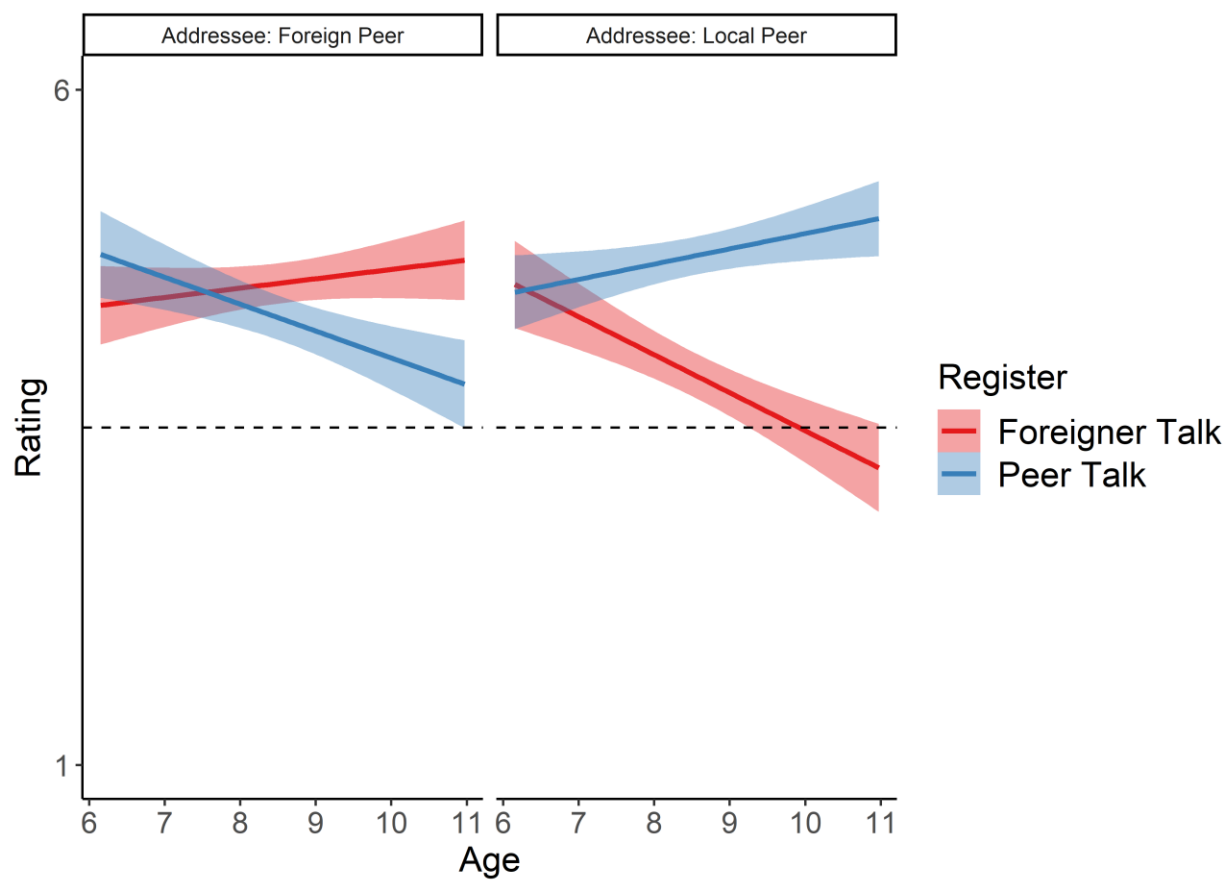
*Figure III.1.* Study 3a Children: The results of regression modeling children’s ratings for liking, niceness, intelligence, and friendship by age, addressee, and register. Responses are on a scale from 1-7 with the midpoint (3.5) marked by the dashed line.



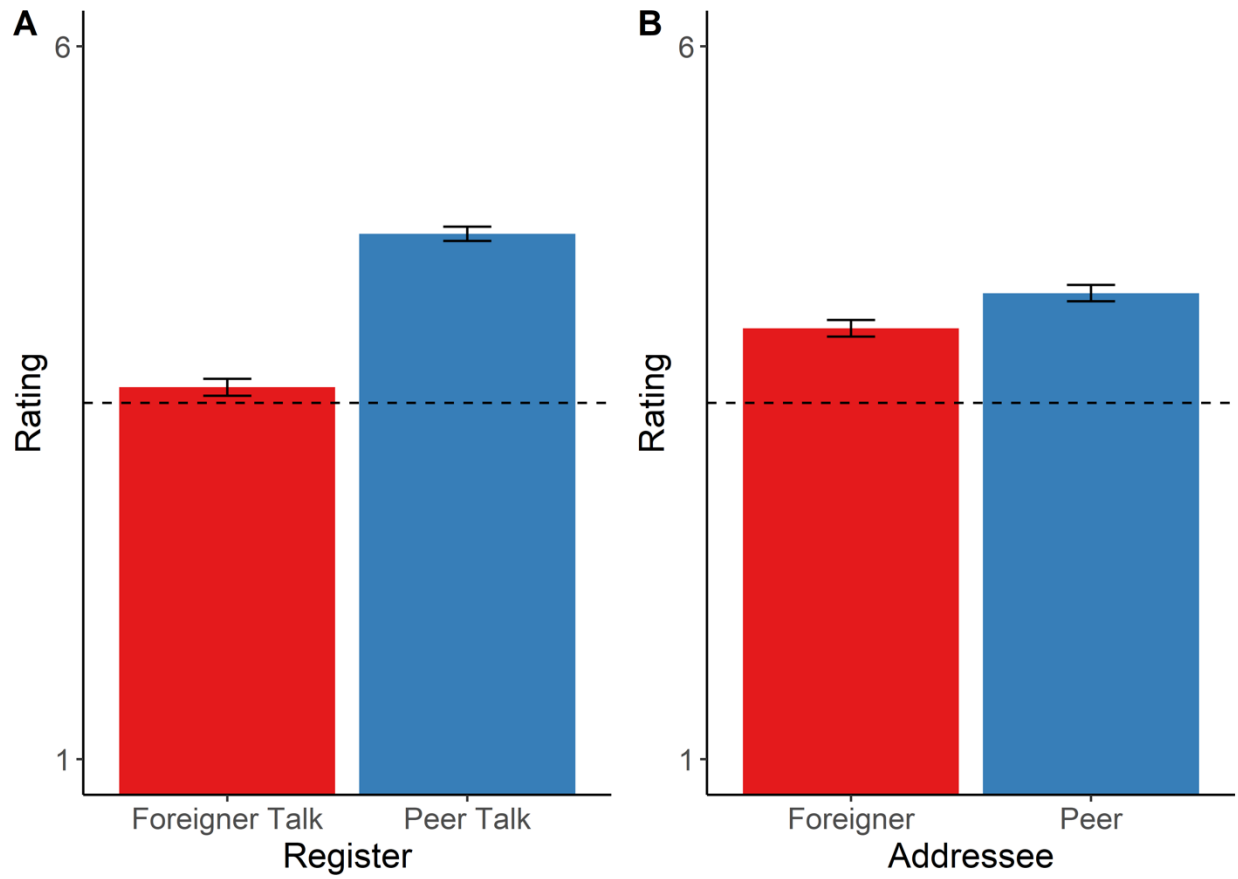
*Figure III.2.* Study 3a Adults: The results of regression modeling adults' ratings for liking, niceness, intelligence, and friendship by addressee and register. Responses are on a scale from 1-7 with the midpoint (3.5) marked by the dashed line.



*Figure III.3.* Study 3b Multiple Correspondence Analysis: The results of a multiple correspondence analysis showing two dimensions that account for 42.5% of participants' (adult native and non-native speakers) responses regarding what they think speakers using Foreigner Talk are thinking. Note that this graph only displays the positive instances of the coded categories; although the negative instances of each category were included in the analysis, they were not graphed here for the sake of interpretability.



*Figure III.4.* Study 3b Children: The results of regression modeling children's ratings for liking, niceness, intelligence, and friendship by age, addressee, and register. Responses are on a scale from 1-6 with the midpoint (3.5) marked by the dashed line.



*Figure III.5.* Study 3b Adults: Averages (and standard errors) of adults' ratings of liking, niceness, intelligence, friendship, helpfulness, and rudeness by register (A) and addressee (B). Responses are on a scale from 1-6 with the midpoint (3.5), marked by the dashed line.

## CHAPTER IV

### Study 4: Children's Evaluations of Interlocutors in Native/Non-Native Interactions

In the previous studies, I found that children and adults rated speakers and addressees differently based on Foreigner Talk use. For addressees, I found that evaluations varied based not just on whether Foreigner Talk was used but also on who it was used with. Older children and adults gave lower ratings to a local peer who received Foreigner Talk than to a foreign peer who did. For speakers, I again found that evaluations of those who use Foreigner Talk were not absolute for children. Instead, their ratings varied depending on who the addressee was, with children giving lower ratings to the speaker who used Foreigner Talk with a local peer than to the speaker who used it with a foreign peer. Together, these findings point to the importance of context in children's evaluations of interlocutors when Foreigner Talk is used. However, the context of these studies was limited to the social category of the addressee. In actuality, there are a number of contextual cues present in any given conversation that affect linguistic adjustments, and these additional contextual cues may affect the inferences about interlocutors drawn from register use. The present study investigates how Foreigner Talk affects evaluations of interlocutors in a more contextually rich interaction than presented in the previous studies.

To do so, the stimuli presented in this study represent a marked departure from the previous studies in two ways. First, this study entails a face-to-face dyadic conversation between a native and non-native speaker. In the previous studies, the recipient of the presented registers never produced utterances themselves. As such, participants' understanding of the addressee was

based not on observed accent but on the presentation of a number of cues that indicated the addressee was foreign (i.e., appearance, stated language ability, origin). In presenting non-native accent, this study builds upon the previous work presented here while putting the examination of Foreigner Talk in conversation with literature regarding children's preference for native over non-native speakers (e.g., Kinzler et al., 2007). In doing so, this study expands upon the literature regarding children's early bias against non-native speakers by examining how register variations in native/non-native speaker interactions may inform children's evaluations of non-native speakers.

The second major change to the stimuli presented in this study is the inclusion of a breakdown in communication. The previous studies always presented stimuli in which the speaker addressed their interlocutor in one manner (e.g., Foreigner Talk or Peer Talk) which did not capture the ways in which speakers sensitively adjust their language within a conversation according to their communicative and social goals (e.g., Dragojevic, Gasiorek, & Giles, 2015). In this study, participants were presented one of two conditions: a Foreigner Talk condition and a no Foreigner Talk condition. In both conditions, interlocutors experienced a breakdown in communication, and it is only after the breakdown occurs, that the native speaker employs Foreigner Talk in the Foreigner Talk condition. This design is intended to mirror previous research that has found that speakers tend to adjust their speech (e.g., slower, louder) after a breakdown in communication, especially with non-native speakers (Berger & di Battista, 1993). Together, the breakdown in communication and the added accent information provides this study with additional contextual information that can map onto either of the two theorized goals of Foreigner Talk (to improve communication or to reinforce social distance with a non-native speaker). As a result, it has the potential to shed light on how children extract social information

from Foreigner Talk in the presence of multiple, relevant contextual cues that could inform the intentionality behind the use of the register.

With these additional contextual cues, I predicted that children would provide lower ratings to non-native speakers than native speakers, consistent with previous research indicating that children prefer native speakers over non-native speakers. I further predicted that children would give higher ratings to the native speaker who used Foreigner Talk than the one who did not, because they would view Foreigner Talk as a sensitive and helpful attempt to repair communication. On the other hand, I predicted that children would give higher ratings to the non-native speaker who did not receive Foreigner Talk compared to the one who did because the register shift would highlight the non-native speaker's relatively lower language ability (as Foreigner Talk is not typically how communication is repaired with native speakers). As such, the production of Foreigner Talk would reinforce children's existing bias against non-native speakers.

For adults, I likewise predicted that they would provide higher ratings of the native speakers than of the non-native speakers because of preexisting accent bias (Gluszek & Dovidio, 2010). However, I predicted that the use of Foreigner Talk would not negatively affect the ratings of the native speaker. In Study 3b, I found that adults gave lower ratings to speakers who used Foreigner Talk regardless of who the addressee was, but I expected that adults would not penalize the person using Foreigner Talk when Foreigner Talk was given in direct response to a breakdown in communication, because it would clarify the speaker's communicative intent. As with children, I predicted that adults would give lower ratings to the non-native speaker who received Foreigner Talk than the one who did not, as the register would highlight their relative lack of language ability.



In sum, I anticipated that the additional context presented in this study would boost the ratings of native speakers using Foreigner Talk, as the communication breakdown would bring to the forefront the communicative nature of Foreigner Talk for participants. Conversely, I anticipated that the additional context of the study would not benefit the ratings of non-native speakers using Foreigner Talk, because it would draw further attention to the speaker's accent.

## Methods

### Participants

Participants were 5-10-year-olds ( $N = 116$ , 60 females;  $M = 7.96$ , range = 5.02-10.99). This age range was selected based on the prior studies. Specifically, 5-year-olds were the youngest age that was sensitive to register in evaluating an addressee (Study 1), and 10-year-olds were beginning to give similar evaluations of addressees as adults (Study 2), although their judgments still differed from those of adults. As with the other studies, I selected children who, according to parental report, were native, monolingual speakers of English (English spoken  $\geq 90\%$  of the time). Additionally, I only included children who had infrequent interactions with non-native speakers,  $< 50\%$  of the time ( $M = 5.94\%$ ). Twenty-six other children were tested but excluded from the final sample for not fitting these language requirements. Participants were tested at a children's museum and an on-campus lab in a predominantly White (72.0%), middle class (median household income: \$57,697) university town in Southeast Michigan.

Additionally, 103 native-English-speaking, U.S. adults ( $M = 35.50$ , range = 19-67) were recruited via Amazon Mechanical Turk. An additional four participants participated in the study but were excluded from the final sample because their native language was not English. An attention check was included at the end of the study to ensure participants had watched the video in the study. In it, participants were asked what the people in the video talked about; participants

whose responses did not include at least one piece of relevant information (i.e., directions, language ability) were dropped from the final sample ( $N = 25$ ).

An additional 195 adults participated in a survey used to inform the design of the videos (see Materials, below).

## **Materials**

Four videos were recorded with two different pairs of actresses. Each pair included one native speaker of English and one non-native speaker of English; all were White with dark brown hair. Both non-native speakers spoke Hungarian as their first language. In this study, a Hungarian accent was chosen because it was unlikely that participants in the study would be familiar with it. I wanted to avoid more familiar accents (e.g., Spanish, Arabic, Chinese) because participants may have preexisting associations with these accents (Lindemann, 2005). As such, a Hungarian accent was chosen so as to not confound results of this study with other factors such as prestige or race.

Prior to recording the videos, I gathered responses from 98 non-native English-speaking adults and 97 native English-speaking adults regarding what features they associated with Foreigner Talk. Participants were first given a basic definition of Foreigner Talk (“Foreigner Talk refers to the changes native speakers may make when talking to non-native speakers”). They were then told some of the features typically associated with Foreigner Talk: slow speech, loud speech, simplified speech, and enunciated speech. Participants were then asked to identify which of the listed features they associated with Foreigner Talk. A majority of participants identified slow speech (68%) and simplified speech (53%) as being features they associated with Foreigner Talk. A smaller percentage of participants also identified enunciated speech (38%) and

loud speech (23%) with Foreigner Talk. As such, the videos were designed with these four features in mind.

In each video, the non-native speaker asked the native speaker for directions. After receiving them, the non-native speaker told the native speaker that she did not understand, as she was still learning English. She then asked for clarification, which the native speaker provided (see Appendix D for full scripts). Two different videos were recorded with each pair of actresses: one contained the native speaker's switch into Foreigner Talk following the non-native speaker's request for clarification, and the other did not. In the videos with the Foreigner Talk switch, the native speaker spoke slower, louder, and with more enunciation. In addition, their syntax was more simplified, both syntactically (e.g., simple sentences instead of compound sentences) and lexically (e.g., “house” instead of “farmhouse”). Otherwise, the actresses were instructed to talk to each other as though they were talking to a friend, to keep a pleasant expression on their face, and to keep their hands at their sides.

### **Procedure**

Child participants were tested by an experimenter with a laptop. Participants who were tested in the museum wore headphones to block out extraneous noise. The experimenter explained that they were going to see some girls talk to each other and that after they were done, she was going to ask them about what they thought of the girls they saw. The experimenter then showed a single video to the participant twice, in order to ensure that the participant remembered the interaction accurately. Approximately half of the participants were assigned to the Foreigner Talk condition ( $N = 55$ ) and the others were assigned to the no Foreigner Talk condition ( $N = 61$ ). Which pair of actresses they saw was roughly counterbalanced across participants.

The experimenter then asked the participant to rate how much they liked each speaker, using the same 6-point scale in Appendix B. After that, the experimenter reminded the participant of the rating they gave each speaker and asked them to explain their response (e.g., “Remember you told me you liked this girl a little bit. Why is that?”) and wrote down the child’s response. Both during the first rating and during the explanation, the experimenter pointed to the speaker being asked about and showed their image encircled on the laptop so that it was clear which person the questions were about. The order in which the experimenter asked about each speaker was counterbalanced across trials such that roughly half of the participants in each condition provided ratings for the native speaker first and roughly half rated the non-native speaker first.

As an attention check, participants were then reminded that one of the people had said she did not understand what the other girl said and asked to point to the person who did not understand. The experimenter then asked the participant if either of the people changed how they talked in the video. If the participant said yes, they were asked to point to the person who did and then asked how they changed how they talked. Finally, the participant was asked to evaluate whether the native speaker was being helpful, on a 6-point scale. This question was provided at the end to ensure it did not affect children’s other responses. In particular, I did not want to prime children to think about helpfulness when providing their open-ended responses justifying their ratings or explaining how the person adjusted their speech.

Adults participated in a computerized survey version of the study, in which they were provided a written version of the instructions that children received. Approximately half participated in the Foreigner Talk condition ( $N = 58$ ) and the rest participated in the no Foreigner Talk condition ( $N = 45$ ). Adults were randomly assigned to condition via Qualtrics. Although

this method typically results in equivalent distribution of conditions across participants, the number of participants dropped from the no Foreigner Talk condition for failing the attention check happened to be more than those dropped from the Foreigner Talk condition. Adults rated their responses on the same scale as children but without the child-friendly visual aids. Adults additionally wrote out their own explanations that children provided verbally. Finally, adults were asked to describe what they saw in the video; this replaced the child attention check of identifying who did not understand.

## Results

**Manipulation Check.** I first examined participants' responses for whether a speaker made changes to their talk in the video, to check sensitivity to the condition manipulation. Participants were placed in one of three categories based on who they indicated changed their talk: Native Speaker, Non-Native Speaker, or Neither. For the Foreigner Talk condition, the correct response was Native Speaker, whereas for the no Foreigner Talk condition, the correct response was Neither. See Table IV.1 for data. I conducted a chi-square test to compare children's responses by condition. Children differed on who they indicated changed their talk between conditions ( $\chi^2 (2, N = 115) = 36.61, p < .001$ ). Children more often indicated that neither speaker changed their speech in the no Foreigner Talk condition than the Foreigner Talk condition ( $p < .001$ ), and more often indicated the native speaker changed their speech in the Foreigner Talk condition than the no Foreigner Talk condition ( $p < .001$ ). Children did not differ across conditions for how often they indicated that the non-native speaker changed their speech ( $p = .180$ ). Adults likewise differed in who they indicated changed their talk by condition ( $\chi^2 (2, N = 102) = 61.79, p < .001$ ). Adults more often indicated neither speaker changed their speech in the no Foreigner Talk condition than the Foreigner Talk condition ( $p < .001$ ) and more often

indicated the native speaker changed their speech in the Foreigner Talk condition than the no Foreigner Talk condition ( $p < .001$ ). Additionally, adults did not differ across for how often they indicated the non-native speaker changed their speech ( $p = .287$ ).

Participants who indicated that a speaker made changes to their language additionally provided open-ended responses regarding what changes were made. These responses were coded as mentioning one of the attributes typically associated with Foreigner Talk: slow, loud, enunciated, simplified speech (see Table IV.2 for full data). For children who indicated that the native speaker made a change in the Foreigner Talk condition, the most common adjustment mentioned was the speaker getting louder (45%), followed by slowness (17.5%); only 4 participants mentioned enunciation, and only one mentioned the language being simplified. For adults who indicated that the native speaker made a change in the Foreigner Talk condition, they mentioned slowness the most (82%), followed by loudness (28%), with a smaller number mentioning enunciation (17.5%), and only three mentioning simplified language.

**Evaluations.** Participants' evaluations for how much they liked each speaker and how helpful the native speaker was were converted to numerical scores between 1-6. The lowest possible rating ("not like/helpful" "a lot") received a 1, and the highest possible rating ("like/helpful" "a lot") received a 6. As such, scores between 1-3 indicated a negative evaluation, and scores between 4-6 indicated a positive evaluation.

*Children.* To examine children's responses for liking, I conducted a linear regression with condition, speaker, age (as continuous), and their interactions as fixed effects. The model only found an effect of condition ( $F(1, 230) = 8.16, p = .005$ ), so the other terms were dropped from the model. Children in the Foreigner Talk condition gave lower ratings to speakers than the children in the no Foreigner Talk condition ( $\beta = -0.16, SE = 0.16, t(230) = -2.86, p = .005$ ) (see

Figure IV.1). I further analyzed the data by comparing children's responses by condition to the midpoint of the scale (3.5). Overall, children provided positive ratings for speakers both in the Foreigner Talk condition ( $t(109) = 8.45, p < .001$ ) and the no Foreigner Talk condition ( $t(121) = 15.45, p < .001$ ).

To examine children's responses for the native speaker's helpfulness, I conducted an additional linear regression with condition, age (as continuous), and their interaction as fixed effects. The model found no effects. A one-sample t-test to the midpoint of the scale found that children reported the native speakers to be helpful ( $t(104) = 22.37, p < .001$ ).

*Adults.* I conducted a linear regression for adults' liking ratings with condition, speaker, and their interaction as fixed effects. The model found an effect of condition ( $F(1, 208) = 15.50, p < .001$ ) and of speaker ( $F(1, 208) = 23.63, p < .001$ ) and an interaction between speaker and condition ( $F(1, 208) = 22.90, p < .001$ ) (see Figure IV.2). Participants in the Foreigner Talk condition gave the native speaker lower ratings than participants in the no Foreigner Talk condition ( $\beta = -1.48, SE = 0.28, t(105) = -5.27, p < .001$ ). Additionally, participants in the Foreigner Talk condition gave the native speaker lower ratings than they gave to the non-native speaker ( $\beta = -1.56, SE = 0.23, t(115) = -6.78, p < .001$ ). Adults in the no Foreigner Talk condition did not rate the speakers differently from each other ( $p = .794$ ), and adults in both conditions rated the non-native speaker equivalently ( $p = .479$ ). To analyze these findings further, I subjected adults' ratings by speaker and condition to a one-sample t-test against the midpoint of the scale. Adults provided positive ratings for both the non-native speaker and the native speaker in the no Foreigner Talk condition ( $p < .001$ ), but although gave positive ratings of the non-native speaker in the Foreigner Talk condition ( $p < .001$ ), their ratings of the native speaker who used Foreigner Talk did not differ from the midpoint ( $t(58) = -0.64, p = .520$ ).

For ratings of helpfulness, I conducted another linear regression with condition as a fixed effect. I found an effect of condition ( $F(1, 105) = 11.62, p < .001$ ) such that adults rated the native speaker in the Foreigner Talk condition as less helpful than the native speaker in the no Foreigner Talk condition ( $\beta = -0.71, SE = 0.21, t(106) = -3.41, p < .001$ ). I further examined adults' ratings of helpfulness by comparing their ratings to the midpoint of the scale for each condition. Adults rated native speakers in both conditions as helpful ( $ps < .001$ ).

**Explanations Secondary Analyses.** I conducted secondary analyses of participants' ratings of interlocutors in which I excluded participants who did not pass the manipulation check—i.e., they did not identify that the native speaker changed their speech in the Foreigner Talk condition or that there was no change in speech in the no Foreigner Talk condition.

*Children.* Forty children remained in the Foreigner Talk condition, and 42 children remained in the no Foreigner Talk condition. I conducted a linear regression examining children's ratings of liking with condition, speaker, age (as continuous), and their interactions as fixed effects. The model only found an effect of condition ( $F(1, 164) = 7.55, p = .007$ ), so the other terms were dropped from the model. Children in the Foreigner Talk condition gave lower ratings to speakers than the children in the no Foreigner Talk condition ( $\beta = -0.51, SE = 0.19, t(164) = -2.75, p = .007$ ). I further analyzed the data by comparing children's responses by condition to the midpoint of the scale. Overall, children provided positive ratings for speakers both in the Foreigner Talk condition ( $t(81) = 6.97, p < .001$ ) and the no Foreigner Talk condition ( $t(83) = 14.15, p < .001$ ).

I also conducted a linear regression examining children's ratings of helpfulness with condition, age (as continuous), and their interaction as fixed effects. The model only found an effect of condition ( $F(1, 76) = 4.12, p = .046$ ), so the other terms were excluded from the model.



Children provided lower ratings of helpfulness to the native speaker in the Foreigner Talk condition than the one in the no Foreigner Talk condition ( $\beta = -0.43$ ,  $SE = 0.21$ ,  $t(76) = -2.03$ ,  $p = .046$ ) A one-sample t-test to the midpoint of the scale found that children reported the native speakers to be helpful in both the Foreigner Talk condition ( $t(35) = 9.02$ ,  $p < .001$ ) and the no Foreigner Talk condition ( $t(41) = 25.43$ ,  $p < .001$ ).

*Adults.* Fifty-seven adults remained in the Foreigner Talk condition and 30 adults remained in the no Foreigner Talk condition. I conducted a linear regression for adults' liking ratings with condition, speaker, and their interaction as fixed effects. The model found an effect of condition ( $F(1, 168) = 23.18$ ,  $p < .001$ ) and of speaker ( $F(1, 168) = 20.14$ ,  $p < .001$ ) and an interaction between speaker and condition ( $F(1, 168) = 23.72$ ,  $p < .001$ ). Participants in the Foreigner Talk condition gave the native speaker lower ratings than participants in the no Foreigner Talk condition ( $\beta = -1.86$ ,  $SE = 0.32$ ,  $t(85) = -5.95$ ,  $p < .001$ ). Additionally, participants in the Foreigner Talk condition gave the native speaker lower ratings than they gave to the non-native speaker ( $\beta = -1.48$ ,  $SE = 0.24$ ,  $t(110) = -6.27$ ,  $p < .001$ ). Adults in the no Foreigner Talk condition did not rate the speakers differently from each other ( $p = .174$ ), and adults in both conditions rated the non-native speaker equivalently ( $p = .915$ ).

I conducted another linear regression for ratings of helpfulness with condition as a fixed effect. I found an effect of condition ( $F(1, 86) = 13.83$ ,  $p < .001$ ) such that adults rated the native speaker in the Foreigner Talk condition as less helpful than the native speaker in the no Foreigner Talk condition ( $\beta = -0.86$ ,  $SE = 0.23$ ,  $t(86) = -3.72$ ,  $p < .001$ ). I further examined adults' ratings of helpfulness by comparing their ratings to the midpoint of the scale for each condition. Adults rated native speakers in both conditions as helpful ( $ps < .001$ ).

I further subjected adults' ratings by speaker and condition to a one-sample t-test against the midpoint of the scale. Adults provided positive ratings for both the non-native speaker and the native speaker in the no Foreigner Talk condition ( $p < .001$ ), and the non-native speaker in the Foreigner Talk condition ( $p < .001$ ). However, their ratings of the native speaker who used Foreigner Talk did not differ from the midpoint ( $t(56) = -0.47, p = .634$ ).

**Explanations.** Participants' explanations for their evaluations were coded for mention of the following: 1) language ability (e.g., "She didn't talk the language."); 2) language adjustments (e.g., "She talks slower."); 3) positive characteristics (e.g., "She's nice and helping the other girl."); 4) negative characteristics (e.g., "She is a little bit mean."); 5) social category/status (e.g., "I think she's from China."); 6) attempt to foster communication/understanding (e.g., "She went over it again, so she could understand it clearly.") and 7) intelligence (e.g., "Talks to the individual as if they were stupid."). Additionally, responses in which the participants indicated that they did not know why they gave the rating they were coded as such. Responses that received no other code were coded as "Other." A subsample of 20% of responses were coded by two different coders to establish reliability ( $\kappa_{\text{Average}} = 0.83, \kappa_{\text{Range}} = 0.66-1$ ). See Table IV.3 for data.

To increase power, explanations for both children and adults were analyzed together with age group (i.e., children, adults) as a factor. The codes "I don't know" and "Other" were not analyzed as they are uninformative. Furthermore, I set a threshold that each coding category needed to be mentioned on at least 10% of the trials. Only one code, Intelligence, fell below this threshold (1.6%) and therefore was excluded from further analysis.

*Language Ability.* I conducted a binomial logistic regression investigating the mention of a speaker's language ability, with age group, condition, speaker, and their interactions as fixed

effects. The final model found an effect of age group ( $Wald \chi^2 (1, 428) = 5.37, p = .020$ ), speaker ( $Wald \chi^2 (1, 427) = 3.96, p = .057$ ), and an interaction with age group and condition ( $Wald \chi^2 (2, 425) = 6.54, p = .038$ ). Both children and adults mentioned language ability more often when justifying their ratings of the non-native speaker than the native speaker ( $\beta = 0.54, SE = 0.27, t(425) = 2.00, p = .046$ ). Overall, child participants more often mentioned language ability in their explanations than adult participants ( $\beta = 1.52, SE = 0.51, t(425) = 2.96, p = .003$ ). However, in the Foreigner Talk condition, adults and children mentioned language ability at equivalent rates ( $p = .699$ ), and in the no Foreigner Talk condition, children mentioned language ability more than adults ( $\beta = 1.51, SE = 0.51, t(204) = 2.95, p = .003$ ). Indeed, children mentioned language ability equally across conditions ( $p = .612$ ) whereas adults in the Foreigner Talk condition mentioned it more often than adults in the other condition ( $\beta = 1.20, SE = 0.52, t(201) = 2.30, p = .022$ ).

*Language Adjustments.* I conducted a binomial logistic regression investigating the mention of a speaker's adjustments to their language, with age group, condition, speaker, and their interactions as fixed effects. The final model found an effect of condition ( $Wald \chi^2 (1, 428) = 18.39, p < .001$ ) and speaker ( $Wald \chi^2 (1, 427) = 21.50, p < .001$ ). Language adjustments were mentioned more often in the Foreigner Talk condition than in the no Foreigner Talk condition ( $\beta = 1.08, SE = 0.26, t(427) = 4.09, p < .001$ ). Participants also more often mentioned language adjustments in explaining their evaluations of the native speaker than the non-native speaker ( $\beta = 1.17, SE = 0.26, t(201) = 4.45, p < .001$ ).

*Positive Characteristics.* I conducted a binomial logistic regression investigating the mention of the speaker possessing positive characteristics, with age group, condition, speaker, and their interactions as fixed effects. The final model found an effect of age group ( $Wald \chi^2 (1,$

428) = 23.35,  $p < .001$ ) and condition ( $Wald \chi^2 (1, 427) = 5.36, p = .021$ ) and an interaction between age group and speaker ( $Wald \chi^2 (2, 425) = 21.92, p < .001$ ). Participants mentioned fewer positive characteristics for the Foreigner Talk trial than for the no Foreigner Talk trial ( $\beta = -0.49, SE = 0.21, t(425) = -2.34, p = .019$ ). Adults more often mentioned positive characteristics when talking about the non-native speaker than the native speaker ( $\beta = 1.02, SE = 0.29, t(201) = 3.48, p < .001$ ), but children less often mentioned positive characteristics when talking about the non-native speaker than the native speaker ( $\beta = -0.91, SE = 0.30, t(220) = -3.01, p = .003$ ). Furthermore, adults and children mentioned positive characteristics for the native speaker at equivalent rates ( $p = .636$ ), but children provided fewer positive characteristics for the non-native speaker than adults did ( $\beta = -1.97, SE = 0.31, t(212) = -6.31, p < .001$ ).

*Negative Characteristics.* I conducted a binomial logistic regression investigating the mention of the speaker possessing negative characteristics, with age group, condition, speaker, and their interactions as fixed effects. The final model found an effect of age group ( $Wald \chi^2 (1, 428) = 7.89, p < .001$ ), speaker ( $Wald \chi^2 (1, 427) = 16.28, p < .001$ ), and condition ( $Wald \chi^2 (1, 426) = 15.28, p < .001$ ), and interactions between age group and speaker ( $Wald \chi^2 (1, 425) = 14.21, p < .001$ ) and between speaker and condition ( $Wald \chi^2 (1, 424) = 7.20, p = .007$ ). Children less often mentioned negative characteristics about the native speaker than adults did ( $\beta = -1.71, SE = 0.45, t(212) = -3.84, p < .001$ ), but the two age groups mentioned negative characteristics of non-native speakers at equivalent rates ( $p = .124$ ). Both age groups mentioned negative characteristics about the non-native speaker at equivalent rates across conditions ( $p = .989$ ), but more negative characteristics were mentioned when explaining evaluations of native speakers in the Foreigner Talk condition compared to the no Foreigner Talk condition ( $\beta = 2.11, SE = 0.51, t(212) = 4.09, p < .001$ ).

*Social Category/Status.* I conducted a binomial logistic regression investigating the mention of the speaker's social category/status, with age group, condition, speaker, and their interactions as fixed effects. The final model found an effect of age group ( $Wald \chi^2 (1, 428) = 11.61, p < .001$ ). Children more often mentioned a speaker's social category/status than adults ( $\beta = 1.63, SE = 0.55, t(428) = 2.95, p = .003$ ).

*Communication/Understanding.* I conducted a binomial logistic regression investigating the mention of communication/understanding, with age group, condition, speaker, and their interactions as fixed effects. I found no effects.

## **Discussion**

This study investigated how children rated interlocutors in native/non-native speaker interactions both when Foreigner Talk was used and when it was not. Participants were sensitive to this manipulation of register, with both children and adults more often reporting a change in speech in the Foreigner Talk condition than in the no Foreigner Talk condition. The prior studies presented in this dissertation suggested that Foreigner Talk informs both children's and adults' evaluations of interlocutors (both as addressees and speakers). The present study investigated this phenomenon further by introducing more contextualized interactions, including additional cues relevant to the use of Foreigner Talk such as a non-native accented addressee and a communicative breakdown. With this approach, I sought to examine how participants engaged with the potentially communicative and social nature of Foreigner Talk in their evaluations of interlocutors.

I had predicted that children would overall give higher ratings to the native speakers than the non-native speakers. Instead, children in this study only showed an effect of register: giving both speakers in the Foreigner Talk condition lower ratings than the speakers in the no Foreigner

Talk condition. These findings are particularly notable for the lack of preference for the native speaker over the non-native speaker, given that numerous studies have indicated children have a preference for those with native accents (e.g., Kinzler et al., 2007). Although children did not demonstrate a pro-native speaker bias in their ratings of speakers, they did more often identify positive characteristics when explaining their ratings of native speakers than non-native speakers. As such, children's explanations may still point to an underlying preference for native speakers not captured in their ratings of speakers. It is possible that children did not provide lower ratings for the non-native speakers on a whole because they both had engaged in successful communication with a native speaker. Furthermore, the casual manner of speech employed throughout the no Foreigner Talk condition may have signaled something positive about the non-native speaker to children (e.g., the native speaker likes them). Therefore, future investigations should consider whether observing successful, casual communication can influence children's attitudes towards non-native speakers.

I further had anticipated that using Foreigner Talk would result in higher ratings for the native speaker because it would be considered an attempt to repair communication, and conversely that receiving Foreigner Talk would result in lower ratings for non-native speakers because it would reinforce participants' biased social evaluations based on accent. However, children only demonstrated a main effect of register, giving lower ratings to those in the Foreigner Talk condition. The responses of children in the Foreigner Talk condition did not indicate they were any more attentive to the communicative nature of Foreigner Talk. Children in the Foreigner Talk condition did not rate the native speaker as any more helpful than the speaker in the no Foreigner Talk condition. This lack of difference in helpfulness ratings could be the result of both speakers fostering successful communication (i.e., they both provided the

requested directions), but children's explanations in the Foreigner Talk condition did not demonstrate sensitivity to the potentially communicative nature of the register either. Although participants more often mentioned the native speaker's linguistic adjustments in the Foreigner Talk condition, they were no more likely to mention trying to foster communication in the Foreigner Talk condition than in the no Foreigner Talk condition.

Additionally, the presence of Foreigner Talk did not seem to heighten children's attentiveness to the non-native speaker's accent. In explaining their ratings, children mentioned the non-native speaker's language ability and social group membership equally across conditions. As such, children's responses indicate that they did not more often consider the communicative nature of Foreigner Talk or a non-native speaker's social status in the Foreigner Talk condition. They did, however, more often attend to the manner in which the native speaker spoke when Foreigner Talk was used, which may indicate that their lower ratings in the Foreigner Talk condition stemmed from a dislike of the manner of speech itself without connection to a particular communicative or social purpose. These findings are interesting given that children have been documented as using features of Foreigner Talk to repair communication with non-native speaker classmates (Ravid, Olshtain, & Ze'elon, 2003). As such there may be a discrepancy between how children perceive Foreigner Talk use and how they use it to foster successful communication themselves.

Children's ratings running contrary to several predictions may have been a result of the design of this study differing from previous studies. In Studies 2 and 3b, I found interactions between register, addressee, and age with fairly large effect sizes (Study 2: *Cohen's d* = 1.82; Study 3b: *Cohen's d* = 3.11), but the design of the present study differed in two ways that reduced power. First, participants in this study were tested in a between-subjects design (as

opposed to within-subjects design as in the previous studies). Second, participants provided only one rating for the interlocutors in this study (whereas participants in the previous studies provided multiple ratings for each interlocutor). There is also some indication that children's ratings may not be a fully accurate reflection of their attitudes; although children did not demonstrate a pro-native speaker bias in their ratings, they more often mentioned positive characteristics of the native speakers than the non-native speakers across both conditions. As such, the findings presented here may partially be an artifact of the design, and caution should be taken in interpreting the results until further data are collected.

As with children, I had anticipated that adults would show a native speaker bias. However, adults also did not show this pattern in their ratings of how much they liked each speaker. In fact, adults were more likely to mention positive characteristics of non-native speakers than of native speakers in their explanations. This also is contrary to previous research indicating that adults have a bias against non-native speakers (e.g., Gluszek & Dovidio, 2010). It is possible that the non-native speaker in the conversations did not activate their accent bias for a number of reasons. First, it may be that adults did not feel biased against the non-native speaker, because she spoke English fluently in the video. It could also be that adults did not exhibit accent bias, because they had no preexisting stereotypes about the accent they heard (i.e., Hungarian). Additionally, participants' accent bias may have been counteracted by the non-native speaker being polite and successfully communicating with the native speaker. Finally, the present findings may be the result of adults demonstrating a social desirability bias (e.g., Grimm, 2010), in which they provide more positive responses when evaluating non-native speakers because they believe it to be a more socially acceptable response. Given the prominence of immigration in the political discourse at the time of data collection (2019-2020), participants may have



overreported their positive feelings towards the non-native speakers. Indeed, previous work regarding attitudes about immigrants has documented such a social desirability bias (e.g., Fussell, 2014).

Furthermore, I had predicted that adults would rate native speakers equally regardless of register use because despite giving lower ratings to speakers who use Foreigner Talk in Study 3b, I expected that having a clearer communicative reason for deploying the register would diminish this difference. I additionally predicted adults would provide lower ratings to the non-native speaker who received Foreigner Talk than the one who did not because Foreigner Talk would bring the non-native speakers' accent to the forefront. In contrast to these predictions, adults gave equivalent ratings of liking to the non-native speakers across conditions but gave differing ratings to the native speakers—giving lower ratings to the native speaker who used Foreigner Talk. Indeed, like children, adults did not mention communicative intent more in the Foreigner Talk condition than in the no Foreigner Talk condition. Moreover, adults reported that the native speaker in the Foreigner Talk condition was less helpful than the native speaker who did not use Foreigner Talk. As such, adults did not seem to tap into the communicative purpose of Foreigner Talk in making their evaluations of speakers.

On the other hand, adults did more often remark on the non-native speaker's language ability in the Foreigner Talk condition than the no Foreigner Talk condition. This suggests that the presence of Foreigner Talk may have highlighted the non-native speaker's language abilities. Indeed, this is condition effect is striking, given that the non-native speaker produced precisely the same speech across conditions. However, more attention on the non-native speakers' language ability did not map onto lower ratings for them. Instead, the only difference in adults' ratings was the native speaker who used Foreigner Talk. The findings suggest that adults may not

have felt that Foreigner Talk was appropriately accommodative communication, leading them to give lower ratings of the speaker who used it.

It remains unclear whether adults might find Foreigner Talk more appropriate in other situations. In this study, the non-native speaker was accented and noted that she was still learning the language—but her speech was nonetheless fluent (i.e., no grammatical errors, spoken at a typical speech rate). Adults may view Foreigner Talk more positively if the recipient is more clearly struggling with basic processing of English. It is also possible that adults simply do not view Foreigner Talk as an appropriate style of speech; as such, they may never find it appropriate, regardless of any manipulation of the addressee's language ability. How adults evaluate Foreigner Talk may also vary as a result of their own views regarding non-native speakers, as previous research has suggested that adults' accommodations in communication with a non-native speaker can vary as a byproduct of their personal experiences (Lorge & Kastos, 2019) and attitudes towards non-native speakers (Lindemann, 2002).

One limitation of the present study is that it did not include a baseline in which both interlocutors were native speakers of English. Such a baseline would allow us to test how Foreigner Talk in a functional context (addressed to a non-native speaker) compares to Foreigner Talk in a non-functional context (addressed to a native speaker). For example, participants may be relatively more positive about the use of Foreigner Talk when it has a plausible purpose (addressed to a non-native speaker) than when it has no discernible purpose (addressed to a native speaker). In other words, it may be that children and adults do not take into account the context in which Foreigner Talk is used in evaluating speakers because the register in and of itself provides negative social information. However, it may instead be that children and adults would provide even lower ratings of speakers when non-native accent is not present, indicating

attention to the purpose for which Foreigner Talk is deployed (i.e., social or communicative). Having this point of comparison would allow for us to understand better how linguistic adjustments can affect reasoning about social partners in native/non-native speaker interactions differently than in native speaker interactions.

### *Conclusions*

Study 4 provides important insight regarding how Foreigner Talk affects children's and adults' evaluations of speakers. In this study, the inclusion of non-native accent and communication breakdown provided both social and communicative reasons for Foreigner Talk to be deployed. The findings suggest that neither children nor adults tapped into the communicative nature of Foreigner Talk in making their evaluations. For both age groups, the native speaker who used Foreigner Talk received lower ratings than the native speaker who did not. Furthermore, neither age group used communication to explain their ratings more in the Foreigner Talk condition than in the no Foreigner Talk condition. However, adults did tap into the non-native speaker's language ability more often when Foreigner Talk was present than when it was not. This suggests that Foreigner Talk made the presence of a non-native accent more relevant to their ratings, although this did not map affect their evaluations of the non-native speaker (who was rated equivalently across conditions). Children, on the other hand, attended to social cues like language ability and social group membership equally across context, but this, too, did not affect their ratings, as they did not demonstrate a non-native speaker bias. These findings indicate that children draw upon the manner in which communication occurs to learn about interlocutors. The lack of preference for native speakers over non-native speakers in this study provides evidence that social variations in communication may be an important avenue of research for examining children's developing biases.

*Table IV.1. Manipulation Check: Counts for who participants indicated changed their speech by age group and condition.*

	Native Speaker	Non-Native Speaker	Neither
<b>Children</b>			
<i>Foreigner Talk</i>	40	3	11
<i>No Foreigner Talk</i>	11	8	42
<b>Adults</b>			
<i>Foreigner Talk</i>	57	0	0
<i>No Foreigner Talk</i>	12	3	30

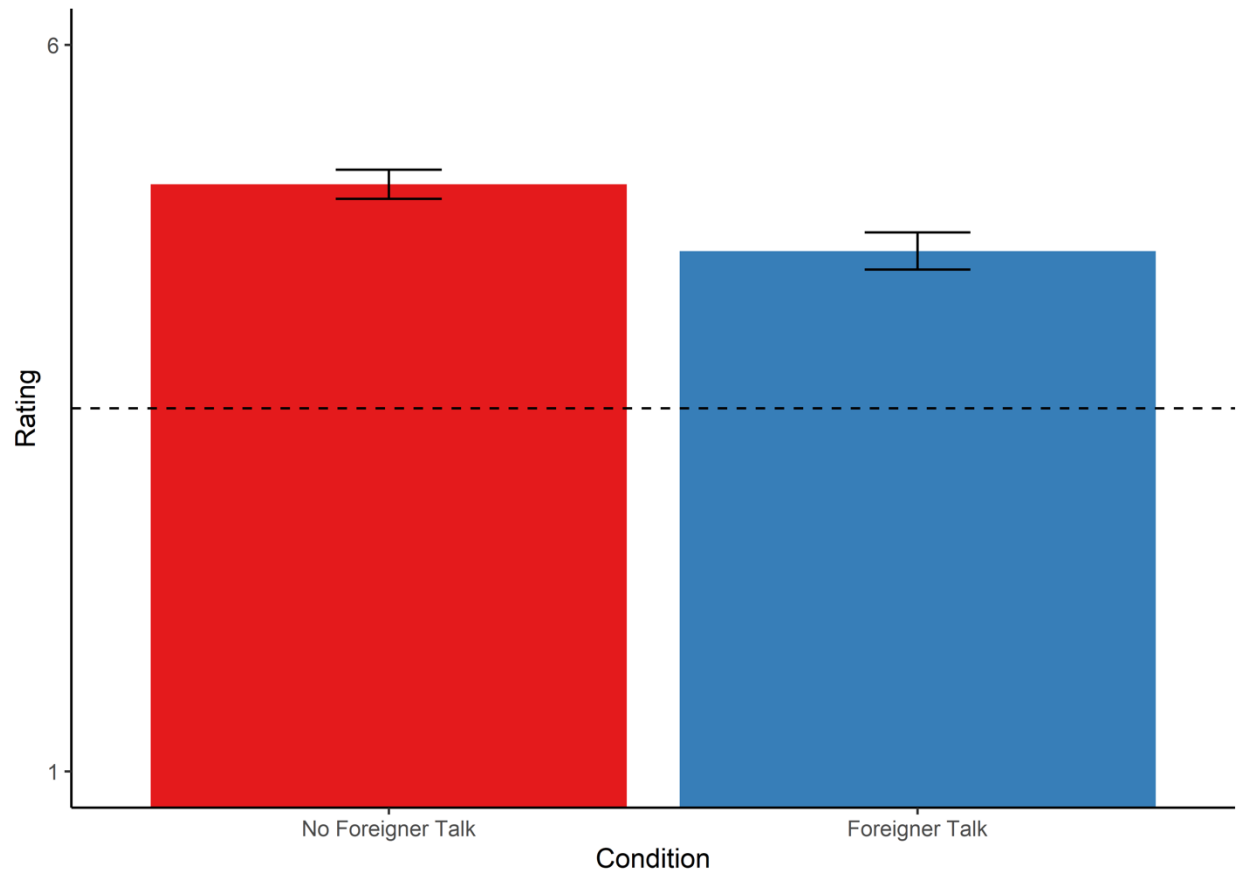
Table IV.2. *Foreigner Talk Adjustments: Counts number of times participants mentioned a given Foreigner Talk adjustment when describing how a speaker changed how they talked in the video they viewed.*

	Slow	Loud	Enunciated	Simplified
<b>Children</b>				
Foreigner Talk				
<i>Native Speaker</i>	7	18	4	1
<i>Non-Native Speaker</i>	0	0	0	0
No Foreigner Talk				
<i>Native Speaker</i>	1	3	0	2
<i>Non-Native Speaker</i>	0	0	0	0
<b>Adults</b>				
Foreigner Talk				
<i>Native Speaker</i>	47	16	10	3
<i>Non-Native Speaker</i>	0	0	0	0
No Foreigner Talk				
<i>Native Speaker</i>	6	3	3	1
<i>Non-Native Speaker</i>	0	0	0	0

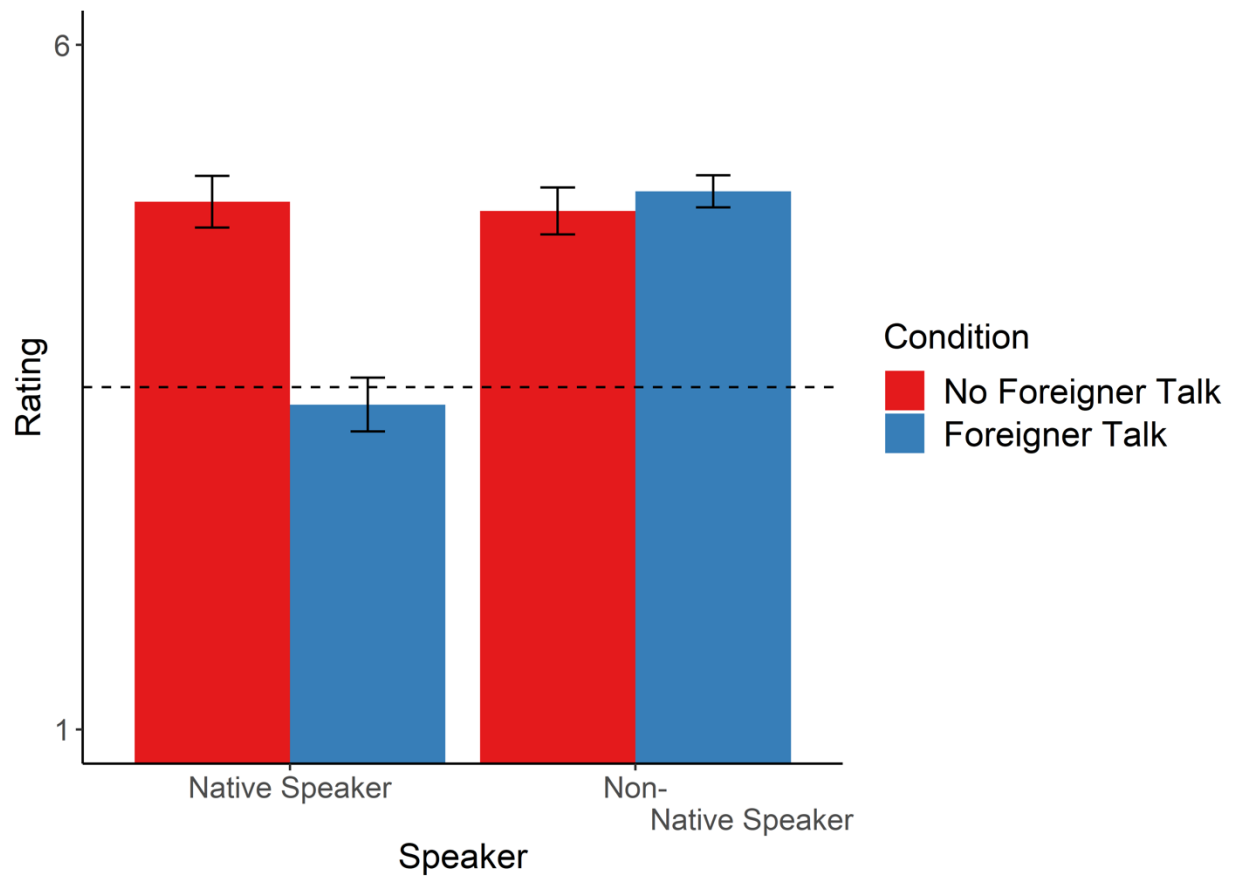
*Note.* A few children ( $N = 6$ ) responded that they did not know what changes were made, and a number of children ( $N = 25$ ) and adults ( $N = 7$ ) provided responses that did not indicate any of the listed features; of these children, six indicated something about the speaker speaking English or a language other than English, and six repeated parts of the instructions.

Table IV.3. Explanations of Interlocutor Ratings: number of responses (and proportion) receiving a given code by condition and speaker for children and adults.

Code	Foreigner Talk		No Foreigner Talk	
	Native Speaker	Non-Native Speaker	Native Speaker	Non-Native Speaker
<b>Language Ability</b>				
<i>Children</i>	5 (.09)	14 (.26)	11 (.19)	14 (.24)
<i>Adults</i>	9 (.20)	10 (.22)	2 (.04)	3 (.05)
<b>Language Adjustments</b>				
<i>Children</i>	19 (.36)	7 (.13)	7 (.12)	7 (.12)
<i>Adults</i>	29 (.64)	9 (.20)	9 (.16)	3 (.05)
<b>Positive Characteristics</b>				
<i>Children</i>	19 (.36)	10 (.19)	26 (.44)	14 (.24)
<i>Adults</i>	16 (.36)	28 (.84)	26 (.46)	29 (.51)
<b>Negative Characteristics</b>				
<i>Children</i>	6 (.11)	5 (.09)	2 (.03)	4 (.07)
<i>Adults</i>	27 (.60)	1 (.02)	3 (.05)	2 (.04)
<b>Communication/Understanding</b>				
<i>Children</i>	7 (.13)	11 (.21)	15 (.25)	11 (.19)
<i>Adults</i>	13 (.29)	14 (.31)	9 (.16)	12 (.21)
<b>Social Category</b>				
<i>Children</i>	1 (.01)	4 (.08)	7 (.12)	7 (.12)
<i>Adults</i>	2 (.04)	1 (.02)	0 (0)	1 (.02)
<b>Intelligence</b>				
<i>Children</i>	0 (0)	0 (0)	0 (0)	0 (0)
<i>Adults</i>	5 (.11)	1 (.02)	1 (.02)	0 (0)
<b>Other</b>				
<i>Children</i>	6 (.11)	4 (.08)	9 (.15)	6 (.10)
<i>Adults</i>	1 (.02)	1 (.02)	5 (.09)	4 (.07)
<b>I don't know</b>				
<i>Children</i>	3 (.06)	10 (.19)	3 (.05)	8 (.14)
<i>Adults</i>	0 (0)	0 (0)	0 (0)	0 (0)



*Figure IV.1.* Study 4 Children: The results of regression modeling an effect of condition for children's ratings for liking. Responses are on a scale from 1-6 with the midpoint (3.5) marked by the dashed line.



*Figure IV.2.* Study 4 Adults: The results of regression modeling a speaker by condition interaction for adults' ratings for liking. Responses are on a scale from 1-6 with the midpoint (3.5) marked by the dashed line.



## **CHAPTER V**

### **General Discussion**

Previous work has indicated that children express a bias against non-native speakers early in development (e.g., Kinzler et al., 2007). This bias likewise is demonstrated in adulthood and can manifest in tangible experiences of prejudice for non-native speakers (e.g., Gluszek & Dovidio, 2010; Lippi-Green, 1997). Given the increasing prevalence of native/non-native speaker interactions, it becomes ever the more important to understand what factors affect this tendency for accent bias.

To that end, I have examined how register use in native/non-native speaker interactions affects children's (ages 5-10) and adults' evaluations of interlocutors. In particular, I examined the effects of Foreigner Talk—a style of speech native speakers may use when talking to non-native speakers. Although some have posited potential social benefits to Foreigner Talk use (e.g., fostering communication), others have suggested that Foreigner Talk may reinforce social distance (e.g., Valdman, 1981; Zuengler, 1991). Previous research has documented children's use and awareness of Foreigner Talk (e.g., Labotka & Gelman, under review; Ravid, Olshtain, & Ze'elon, 2003), but no research has investigated whether children use Foreigner Talk to extract further information from native/non-native speaker interactions. In the studies presented in this dissertation, I examined how use of Foreigner Talk affected adults' and children's evaluations of interlocutors.

### **Present Studies**

In Chapter II, I investigated how Foreigner Talk use affects children's (ages 5-10) and adults' evaluations of *addressees*. Children (5.5 years and older) and adults provided lower ratings to the addressee who received Foreigner Talk compared to addressees of other registers, when register was the only information provided. Older children (age 7 and older) and adults also rated addressees of the same social group differently depending on the register they received (e.g., a local peer receiving Foreigner Talk versus one receiving Peer Talk). I also found that the oldest children (age 10 and older) and adults evaluated addressees of Foreigner Talk differently depending on their social group information (e.g., more positively for the foreign peer who received Foreigner Talk than the local peer who did).

In Chapter III, I found that children and adults used register to inform their evaluations of *speakers*. I first found that children as young as 5 evaluated speakers based on what register they used (e.g., lower ratings for speakers who used Baby Talk), but it was not until they were older (age 6 and older) that they accounted for social group information in their ratings. Particularly for Foreigner Talk, older children (by 7 years of age) gave higher ratings to speakers whose register mapped onto the addressee's social group (i.e., Foreigner Talk for foreign addressee; Peer Talk for peer addressee). On the other hand, adults gave lower ratings to the speakers who used Foreigner Talk, regardless of who their addressee was.

In Chapter IV, I investigated how children (ages 5-10) and adults evaluated interlocutors in native/non-native speaker interactions in which Foreigner Talk was or was not used. This study introduced additional contextual elements pertinent to the potentially communicative and social purposes of Foreigner Talk, such as communication breakdown and a non-native accented addressee. Across adults and children, I found no evidence of a bias against non-native speakers. Instead, children rated both interlocutors in the Foreigner Talk condition lower than the ones in

the Peer Talk condition, and adults rated the native speaker who used Foreigner Talk lower than the other interlocutors. The findings indicate that children attend to variations in communication in more naturalistic contexts and that Foreigner Talk use can negatively affect children's ratings of both addressees and speakers.

### **Developmental trajectory**

Together, these studies provide a developmental picture of how children use registers to inform their social evaluations of interlocutors, particularly in Foreigner Talk contexts. Previous research has indicated that children understand the social importance of context-dependent adjustments to speech as early as 2 (e.g., Weeks, 1971). The research presented here suggests that, by the age of 5, children can also use register to extract information about interlocutors—both those providing and those receiving a particular register. These studies further found that as children get older, they began to incorporate register information with other social information to inform their evaluations. Both in rating speakers and addressees, older children showed the ability to incorporate other contextual information (namely, social group) into their evaluations that younger children did not exhibit. However, even the oldest children's evaluations of speakers using Foreigner Talk did not map onto adults' evaluations. Adults always provided lower ratings to speakers who used Foreigner Talk than other interlocutors whereas children did not.

One possible explanation for these developmental differences is that children are not fully socialized into understanding Foreigner Talk. There is no inherent meaning behind the linguistic variations present in a given register; instead, a register acquires meaning through members of a linguistic community attaching social meaning to it (Agha, 2015). Young members of a linguistic community must be socialized into the repertoire of styles utilized by speakers and

their associated meanings, and this socialization occurs through various means (e.g., observed interactions, media representations; Lippi-Green, 1997; Schieffelin & Ochs, 1986). Children as young as 5 are aware of how Foreigner Talk differs from other registers, and recognize that Foreigner Talk is typically directed towards a foreign addressee (Labotka & Gelman, under review). However, children between the ages of 5 and 6 may have had enough socialization with Foreigner Talk to recognize its typical use but not enough to recognize that there are contexts in which its use would always be considered inappropriate, which may explain why their evaluations were not informed by addressee social group information.

Furthermore, older children in these studies may have responded differently to speakers using Foreigner Talk than adults did, because they are still acquiring social knowledge about the use of the register as well. Indeed, in these studies, I examined a narrow set of children: monolingual children with minimal interactions with non-native speakers. As a result, children in the studied population may not have had many socializing experiences with Foreigner Talk as children with more frequent contact with non-native speakers. Conversely, the participants in my samples were recruited from a college town with a higher percentage of non-native speakers than many places in the United States. Therefore, these children may still have had more socializing experiences with native/non-native speaker interactions than children from less linguistically diverse regions. Adults' responses were also a product of their language socialization. Given that adults were recruited from populations that typically skew more liberal (i.e., college students and MTurk workers; see Berinsky, Huber, & Lenz, 2012), it is possible that the adults in the present studies were more critical of Foreigner Talk (e.g., perceiving it as condescending) than adults from less liberal populations would be. Future work should examine children and adults with

more varied linguistic experiences to gauge the role of language socialization in evaluations of registers.

Another possible explanation for these developmental differences is that children may not have accounted for interlocutors' perspectives as readily as adults. Perspective-taking is an important factor in communication accommodation (Gasiorek, Dragojevic, & Vincze, 2019; Pitts & Harwood, 2015). Nonaccommodation is the result of a speaker's adjustments either being less than what is perceived necessary (underaccommodation) or more than what is perceived as necessary (overaccommodation) (Giles & Gasiorek, 2013). Either form of nonaccommodation can lead to lower ratings of speakers (Gasiorek & Dragojevic, 2017; 2019) and when they overaccommodate (Lowry-Kinberg, 2018; Ryan, Hamilton, & See, 1994). Importantly, however, a given adjustment is not objectively accommodative or nonaccommodative, but instead depends on how it is perceived by an addressee. Adults may find Foreigner Talk to be nonaccommodative more often than children as a result of their more ready capacity to take the perspective of the addressee, and provide lower ratings as a result. Therefore, perspective-taking should be examined in future research to determine its role in children's evaluations of interlocutors based on register use.

### **Future Directions**

The present work provides insight into two key issues: (1) how register can be used to signal social information across development, and (2) how the use of Foreigner Talk can affect evaluations of speakers in native/non-native speakers. These studies demonstrated that children can use Foreigner Talk as social information, but there are open questions regarding how variations in Foreigner Talk (e.g., who is the addressee; how Foreigner Talk is deployed) affect the perception of using the register. Additionally, these studies indicated that children's

evaluations of individuals in native/non-native speaker interactions can be affected by Foreigner Talk use, but future research should examine how register may affect social inferences not just at the individual level, but also the group level.

More work is needed in order to understand how Foreigner Talk affects ratings of individuals, as there are a number of additional factors, not examined here, that may influence such ratings. For example, Fedorova (2015) found that Russians' use of Foreigner Talk varied across social settings: urban settings with high status Western visitors versus border settings with lower status Asian immigrants. These foreign groups who differed along numerous social factors such as race, status, and occupation—all of which would be interesting to vary systematically in future research. For example, one important factor that may affect evaluations in the U.S. context is the race of the non-native speaker. Americans have a tendency to identify anyone of Asian descent as foreign to the United States (Cheryan & Monin, 2005; Wu, 2002), and to expect even native-born Asians to be non-native speakers of English (Hua & Wei, 2016; Jun, 2012). Furthermore, American listeners have been found to report that the same speech clip is more accented when played over an Asian face compared to a White face (Rubin, 1992; Zheng & Samuel, 2017). These stereotypes may lead listeners may find it more acceptable to use Foreigner Talk with an Asian addressee.

Another factor that may influence the way in which Foreigner Talk is perceived is the non-native speaker's proficiency with English. Gluszek and Dovidio (2012) proposed that one of the reasons that non-native accent arouses bias is because of the disfluency (i.e., difficulty processing the language) it causes for the listener. Indeed, such disfluency has been found to evoke mistrust in statements made by a non-native speaker (Lev-Ari & Keysar, 2010). Furthermore, native speakers have been found to give lower ratings to heavily-accented non-

native speakers compared to mildly-accented non-native speakers as a result of additional processing difficulty (Dragojevic, Giles, Beck, & Tatum, 2017), and reducing this processing difficulty can result in more positive evaluations of a non-native speaker (Dragojevic, 2019). In the present studies, I presented non-native speech only in Study 4, and the non-native speakers in these stimuli were fluent, though accented. In future research it would be valuable to systematically vary the fluency of the speaker in these evaluations.

Additionally, more work is needed to understand how variations in the production of Foreigner Talk may affect the evaluations drawn from such interactions. Given that registers are comprised of clusters of features (Agha, 2015), some speakers may use certain features more than others based on their communicative intent, which, in turn, may map onto the ways in which Foreigner Talk is perceived. For example, in the studies presented here, Foreigner Talk included a speaker both slowing down and speaking louder. Although slower speech may help aid language comprehension for a non-native speaker (Blau, 1990; Zhao, 1997), getting louder does not necessarily do so (Ruscher, 1991). Indeed, some research has indicated that native speakers who put more effort into processing a non-native speaker's speech speak more slowly than those who did not (Lev-Ari, Ho, & Keysar, 2018). Future investigations should consider whether some features of Foreigner Talk are viewed as more communicative and if this affects evaluations of Foreigner Talk interactions.

In a similar vein, although I manipulated several typical features of Foreigner Talk, there are variations associated with the register that were not considered in these studies that could likewise affect interpretations of Foreigner Talk. One component of communication not examined here is gesture. Gestures have been found to aid in language comprehension (Dargue, Sweller, & Jones, 2019), and non-native speakers have been found to benefit from gestures in

second language word acquisition (Kushch, Igualada, & Prieto, 2017; Repetto, Pedroli, & Mecedonia, 2017) and overall listening comprehension (Dahl & Ludvigsen, 2014; Sueyoshi & Hardison, 2005). Moreover, the use of gestures when communicating with a non-native speaker may even foster more positive interactions (McCafferty, 2002). Different variations in Foreigner Talk not investigated here should be considered in future work.

As noted earlier, previous work on Foreigner Talk has suggested two potential consequences of using the register: successful communication and social distance (e.g., Valdman, 1981; Zuengler, 1991). The research presented here has largely indicated that Foreigner Talk leads to less positive associations with those who receive it. This could have implications for children's developing biases against non-native speakers. Developmental Intergroup Theory (Bigler & Liben, 2007) posits that when children see a social dimension used, they construct a hypothesis about its importance, which can result in more intergroup bias. For example, Patterson and Bigler (2006) conducted a study in which preschoolers were assigned a novel social group (i.e., red shirts and blue shirts). In experimental classrooms, teachers regularly used these novel groups to organize the classroom, but in the control classrooms, teachers did not. At the end of three weeks, the children in the classrooms where the novel social group was regularly used exhibited more ingroup bias than children in the control classrooms. That is, when the social dimension was made salient through use, children demonstrated more intergroup bias. A number of factors contribute to the salience of a given dimension such as perceptual discriminability, proportional group size, explicit labeling and use of the category, and implicit use of the category.

Using register like Foreigner Talk consistently with a given group (i.e., non-native speakers) may be an implicit way in which adult language practices contribute to children's



construction of prejudices based on accent. Indeed, a number of studies have shown that adults' nonverbal behavior—an implicit use of social category—affects children's biases. Such studies have indicated that children use adults' nonverbal behavior (e.g., smiling vs. scowling) not just to inform their evaluations of individuals (e.g., Brey & Shutts, 2018; Skinner, Osnaya, Patel, & Perry, 2019) but also to extract biases against other individuals and groups (Castelli, De Dea, & Nesdale, 2008; Skinner, Meltzoff, & Olson, 2017; Skinner, Olson, & Meltzoff, 2019). For example, preschool-aged children have been found to favor one novel social group after one of its members received positive nonverbal signals from an adult, over another novel social group after one of its members received negative nonverbal signals from an adult (Skinner et al., 2019). Register may likewise be another way in which implicit behavior directed toward a social group (in this case, those with non-native accents) can introduce biases among children.

In addition to examining the effects of register use on intergroup bias, research should consider whether register also informs children's understanding of social categories. Children's developing understanding of the social world is influenced by the information they receive from their observation of others (Over & McCall, 2018). Language serves as an important source of information regarding social categories. Although explicit labels can influence children's categorization of people (e.g., Dunham, Baron, & Carey, 2011), implicit variations in language also affect children's learning about the social world. For example, variations in language use, such as parent talk and generic language use have been found to inform children's essentialist beliefs about social categories (Rhodes, Leslie, & Tworek, 2012; Segall, Birnbaum, Deeb, & Diesendruck, 2015). In the studies presented here, I found that Foreigner Talk use affected ratings of foreign individuals, but it is unknown whether register use has downstream effects for children's knowledge of social categories. One avenue of research to consider is whether

children infer a shared social category among addressees who receive the same register. Another avenue of research to consider is whether register encourages multiple categorization (i.e., thinking about an individual's multiple identities; Crisp & Hewstone, 2007). Any given person can be addressed in numerous ways depending on which of their social roles is activated in a conversation. An open question is whether children would be more likely to engage in multiple categorization after observing the different ways in which a single person can be addressed. Such research can speak to how registers may inform children's knowledge of the social world.

Finally, future work should consider the first-hand experience of being a person who produces or receives Foreigner Talk. Native speakers come to native/non-native interactions with their own sets of beliefs and experiences that may influence their communicative choices. For example, Lindemann (2002) found that native speakers' attitudes about non-native speakers affected their communication with them. Those with negative views of non-native speakers engaged in more problematizing communication techniques, such as halting collaboration until the non-native speaker used the native speaker's preferred terminology even when communication had not broken down. On the other hand, Lorge and Kastos (2019) found that late bilingual adults more sensitively adjusted their language according to a non-native speaker's needs compared to monolingual speakers, which the authors posited was the result of late bilinguals' own experiences with communicating in a non-native language. The ways in a native speaker chooses to communicate with a non-native speaker may have social ramifications. Native speakers who engaged in problematizing communication strategies had less positive evaluations of their interaction with a non-native speaker than native speakers who did not, despite having successful communication (Lindemann, 2002). Indeed, the effects of communicative choices should be considered developmentally given that children who mimicked

negative non-verbal behavior towards a social agent were more like to acquire biases against them than children who did not (Skinner, et al., 2019).

Additionally, the effects of Foreigner Talk on native/non-native speaker interactions must be understood from the perspective of non-native speakers. Previous research has found that a communication breakdown between a native and non-native speaker can result in the non-native speaker feeling more negatively about the native speaker (Au et al., 2017). If Foreigner Talk is perceived as accommodative by a non-native speaker, it could help repair attitudes towards native speakers after communication breakdown. However, if Foreigner Talk is perceived as nonaccommodative by a non-native speaker, it could worsen their attitudes towards native speakers. The perspective of non-native speakers is vital in understanding the social effects of Foreigner Talk in native/non-native speaker interactions. Examining those who participate in Foreigner Talk can contribute to our understanding of the underlying social cognitive processes both leading into and out of such interactions.

The United States has always been a nation of immigrants and continues to be one to this day. However, American language ideology often excludes non-native English speakers from the narrative (Silverstein, 1996). The work presented in this dissertation represents a first investigation into how children use conversational factors like Foreigner Talk to learn about non-native speakers. Across the studies presented here, children's evaluations of both speakers and addressees were affected by register use. Particularly, children often provided lower ratings to those who were recipients of Foreigner Talk and those who used it. These findings lay the foundation for future investigation into how the interactions children observe between native and non-native speakers may contribute to their developing attitudes towards non-native speakers.

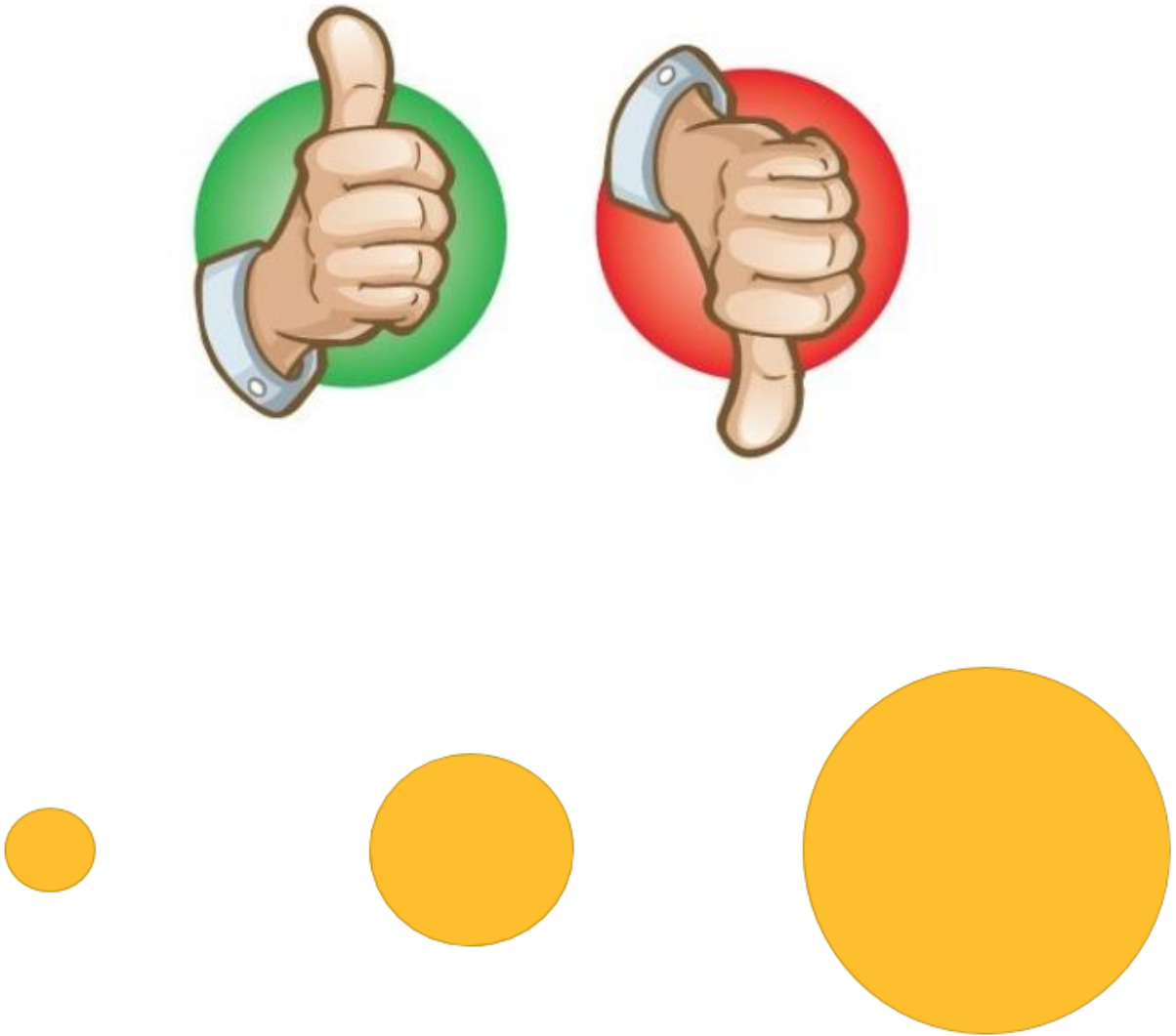
## APPENDIX A

*Table Appendix A.1: Question Wording for Each Evaluation*

Preliminary Rating	Follow-up Rating
Do you like or not like the person Annie was talking to?	How much did you (not) like them?
Was the person Annie was talking to nice or not nice?	How (not) nice were they?
Was the person Annie was talking to smart or not smart?	How (not) smart were they?
Who is in charge? Annie or the person she was talking to?	How in charge are they/is Annie?
Do you think Annie and the person she was talking to are going to be friends or not friends?	How (not) good friends are they going to be?

**APPENDIX B**

*Figure Appendix B.1: Two-Part, Child-Friendly 6-Point Scale*



APPENDIX C

Figure Appendix C.1: Dichotomous Scales for Study 3b



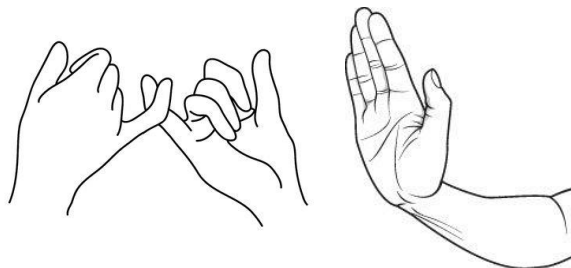
Like



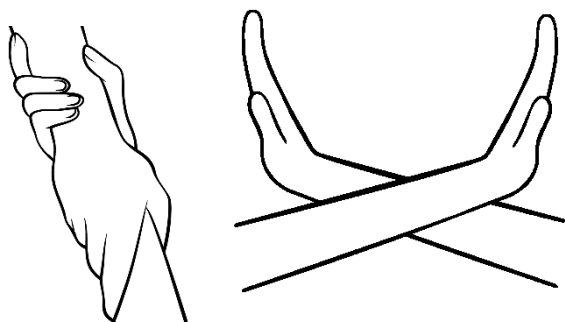
Nice



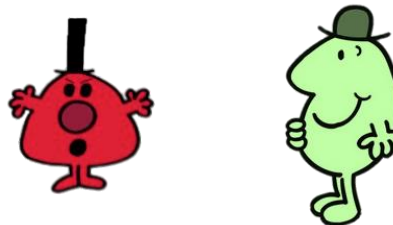
Smart



Friends



Helpful



Rude

## APPENDIX D

### Video Scripts for Study 4

*Script 1 (Foreigner Talk condition)*

Interlocutor 1: Hey! What's your name?

Interlocutor 2: Hi! My name is XXX. What's your name?

Interlocutor 1: My name is XXX. It's nice to meet ya!

Interlocutor 2: Nice to meet you, too! I was wondering if you could tell me how to get to the bus station.

Interlocutor 1: Sure! Ya just go down this street and then turn right when you see the little, blue schoolhouse. Continue walking until you see the orange building. That's the bus station.

Interlocutor 2: I'm sorry, but I did not understand you. I'm not from around here, and I don't know how to speak English. I'm still learning the language. Could you go over that again?

Interlocutor 1: **(slowly & loudly)** I am sorry you did not understand me. You go down this street. You turn right when you see the small, blue house. You walk until you see the orange building. That is the bus station.

Interlocutor 2: Okay! Do you know how often the bus comes?

Interlocutor 1: **(Slowly & loudly)** Bus comes every 15 minutes. You have time to catch next one.

Interlocutor 2: Thank you so much! I will see you later.

Interlocutor 1: **(Slowly & loudly)** See you later. Goodbye.

*Script 2 (No Foreigner Talk condition)*

Interlocutor 1: Hey! What's your name?

Interlocutor 2: Hi! My name is XXX. What's your name?

Interlocutor 1: My name is XXX. It's nice to meet ya!

Interlocutor 2: Nice to meet you, too! I was wondering if you could tell me how to get to the train station.

Interlocutor 1: Sure! Ya just go down this street and then turn left when you see the large, red farmhouse. Continue walking until you see the green building. That's the train station.

Interlocutor 2: I'm sorry, but I did not understand you. I'm not from around here, and I don't know how to speak English. I'm still learning the language. Could you go over that again?

Interlocutor 1: Sure! Ya just go down this street and then turn left when you see the large, red farmhouse. Continue walking until you see the green building. That's the train station.

Interlocutor 2: Okay! Do you know how often the train comes?

Interlocutor 1: The train should arrive every 30 minutes. You will have enough time to catch the next one.



Interlocutor 2: Thank you so much! I will see you later.

Interlocutor 1: See ya later! Bye!

## BIBLIOGRAPHY

- Agha, A. (2003). *Language & Communication*. Cambridge University Press.
- Agha, A. (2015). Enregisterment and communication in social history. In A. Agha & Frog (Eds.), *Registers of Communication*. Helsinki: Finish Literature Society.
- Andersen, E. S. (1990). *Speaking with Style*. Routledge.
- Au, T. K., Kwok, A. F., Tony, L. C., Chen, L., Tse, H. M., & Jun, S. (2017). The social costs in communication hiccups between native and nonnative speakers. *Journal of Cross-Cultural Psychology, 48*(3), 369-383.
- Bauer, D. J., & Curran, P. J. (2005). Probing interactions in fixed and multilevel regression: Inferential and graphical techniques. *Multivariate Behavioral Research, 40*(3), 373-400.
- Berger, C. R., & diBattista, P. D. (1993). Communication failure and plan adaptation: If at first you don't succeed, say it louder and slower. *Communications Monographs, 60*, 220-238.
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2012). Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk. *Political Analysis, 20*(3), 351-368.
- Biber, D. & Conrad, S. (2009). *Register, Genre, and Style*. Cambridge University Press
- Biersack, S., Kempe, V., & Knapton, L. (2005). Fine-tuning speech registers: A comparison of the prosodic features of child-directed and foreigner-directed speech. In *Ninth European Conference on Speech Communication and Technology*, 2401-2404.
- Bigler, R. S., & Liben, L. S. (2007). Developmental intergroup theory: Explaining and reducing children's social stereotyping and prejudice. *Current Directions in Psychological Science, 6*(3), 162-166.
- Blau, E. K. (1990). The effect of syntax, speed, and pauses on listening comprehension. *TESOL Quarterly, 24*(4), 746-753.
- Brey, E., & Shutts, K. (2018). Children use nonverbal cues from an adult to evaluate peers. *Journal of Cognition and Development, 19*(2), 121-136.

- Byers-Heinlein, K., Behrend, D. A., Said, L. M., Girgis, H., & Poulin-Dubois, D. (2017). Monolingual and bilingual children's social preferences for monolingual and bilingual speakers. *Developmental Science*, *20*(4), e12392.
- Castelli, L., De Dea, C., & Nesdale, D. (2008). Learning social attitudes: Children's sensitivity to the nonverbal behaviors of adult models during interracial interactions. *Personality and Social Psychology Bulletin*, *34*(11), 1504-1513.
- Cheryan, S., & Monin, B. (2005). "Where are you really from?": Asian Americans and identity denial. *Journal of Personality and Social Psychology*, *89*(5), 717-730.
- Crisp, R. J., & Hewstone, M. (2007). Multiple social categorization. *Advances in Experimental Social Psychology*, *39*, 163-254.
- Dahl, T. I., & Ludvigesen, S. (2014). How I see what you're saying: The role of gestures in native and foreign language listening comprehension. *The Modern Language Journal*, *98*(3), 813-833.
- Dargue, N., Sweller, N., & Jones, M. P. (2019). When our hands help us understand: A meta-analysis into the effects of gesture on comprehension. *Psychological Bulletin*, *145*(8), 765-784.
- DeJesus, J. M., Hwang, H. G., Dautel, J. B., & Kinzler, K. D. (2017). Bilingual children's social preferences hinge on accent. *Journal of Experimental Child Psychology*, *164*, 178-191.
- Dovidio, J. F., & Gluszek, A. (2012). Accents, nonverbal behavior, and intergroup bias. In *The handbook of intergroup communication* (pp. 109-121). Routledge.
- Dragojevic, M. (2019). Extending the fluency principle: Factors that increase listeners' processing fluency positively bias their language attitudes. *Communication Monographs*, 1-21.
- Dragojevic, M., Giles, H., Beck, A. C., & Tatum, N. T. (2017). The fluency principle: Why foreign accent strength negatively biases language attitudes. *Communication Monographs*, *84*(3), 385-405.
- Dunham, Y., Baron, A. S., & Carey, S. (2011). Consequences of "minimal" group affiliations in children. *Child Development*, *82*(3).
- Edwards, H., & Noller, P. (1993). Perceptions of overaccommodation used by nurses in communication with the elderly. *Journal of Language and Social Psychology*, *12*(3), 207-223.
- Ervin-Tripp, S., Guo, J., & Lampert, M. (1990). Politeness and persuasion in children's control acts. *Journal of Pragmatics*, *14*(2), 307-331.

- Fedorova, K. (2015). Foreigner talk a register or registers? In A. Agha & Frog (Eds.), *Registers of Communication*. Helsinki: Finish Literature Society.
- Ferguson, C. A. (1975). Toward a characterization of English foreigner talk. *Anthropological Linguistics*, 17, 1-14.
- Fiske, S. T., Cuddy, A. J., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences*, 11(2), 77-83.
- Freed, B. F. (1981). Foreigner talk, baby talk, native talk. *International Journal of the Sociology of Language*, 28, 19-40.
- Fuertes, J. N., Gottdiener, W. H., Martin, H., Gilbert, T. C., & Giles, H. (2012). A meta-analysis of the effects of speakers' accents on interpersonal evaluations. *European Journal of Social Psychology*, 42, 120-133.
- Fussell, E. (2014). Warmth of the welcome: Attitudes toward immigrants and immigration policy in the United States. *Annual Review of Sociology*, 40, 479-498.
- Gasiorek, J., & Dragojevic, M. (2017). The effects of accumulated underaccommodation on perceptions of underaccommodative communication and speakers. *Human Communication Research*, 43(2), 276-294.
- Gasiorek, J., & Dragojevic, M. (2019). The effects of speaker group membership and stereotypes on responses to accumulated underaccommodation. *Journal of Language and Social Psychology*, 38(4), 514-522.
- Gasiorek, J., Dragojevic, M., & Vincze, L. (2019). Perspective-taking and language competence as predictors of language accommodation by adolescents from monolingual and bilingual households. *International Journal of Bilingual Education and Bilingualism*, 1-8.
- Gasiorek, J., & Giles, H. (2015). The role of inferred motive in processing nonaccommodation: Evaluations of communication and speakers. *Western Journal of Communication*, 79(4), 456-471.
- Gluszek, A & Dovidio, J. F. (2010). The way they speak: A social psychological perspective on the stigma of non-native accents in communication. *Personality and Social Psychology Review*.
- Grimm, P. (2010). Social desirability bias. *Wiley international encyclopedia of marketing*.
- Hosoda, M., Nguyen, L. T., & Stone-Romero, E. F. (2012). The effect of Hispanic accents on employment decisions. *Journal of Managerial Psychology*, 27(4), 347-364.
- Hua, Z., & Wei, L. (2016). "Where are you really from?": Nationality and Ethnicity Talk (NET) in everyday interactions. *Applied Linguistics Review*, 7(4), 449-470.

- Hwang, H. G., & Markson, L. (2018). Locals don't have accents: Children weigh phonological proficiency when categorizing individuals. *Journal of Child Language*, *45*(4), 1018-1034.
- Jun, J. (2012). Why are Asian Americans silent? Asian Americans' negotiation strategies for communicative discriminations. *Journal of International and Intercultural Communication*, *5*(4), 329-348.
- Katz, J. R. (1981). Children's second-language acquisition: The role of foreigner talk in child-child interaction. *International Journal of the Sociology of Language*, *28*, 53-68.
- Kinzler, K. D., Corriveau, K. H., & Harris, P. L. (2011). Children's selective trust in native-accented speakers. *Developmental Science*, *14*(1), 106-111.
- Kinzler, K. D., & DeJesus, J. M. (20013). Northern = smart and Southern = nice: The development of accent attitudes in the United States. *Quarterly Journal of Experimental Psychology*, *66*(6), 1146-1158.
- Kinzler, K. D., Dupoux, E., & Spelke, E. S. (2007). The native language of social cognition. *Proceedings of the National Academy of Sciences*, *104*(30), 12577-12580.
- Kinzler, K. D., Dupoux, E., & Spelke, E. S. (2012). 'Native' objects and collaborators: Infants' object choices and acts of giving reflect favor for native over foreign speakers. *Journal of Cognition and Development*, *13*(1), 67-81.
- Kinzler, K. D., Shutts, K., DeJesus, J., & Spelke, E. S. (2009). Accent trumps race in guiding children's social preferences. *Social Cognition*, *27*(4), 623-634.
- Kyratzis, A., Marx, T., & Wade, E. R. (2001). Preschoolers' communicative competence: Register shift in the marking of power in different contexts of friendship group talk. *First Language*, *21*, 287-431.
- Kushch, O., Igualada, A., & Prieto, P. (2018). Prominence in speech and gesture favour second language novel word learning. *Language, Cognition, and Neuroscience*, *33*(8), 992-1004.
- Levi-Ari, S., Ho, E., & Keysar, B. (2018). The unforeseen consequences of interacting with non-native speakers. *Topics in Cognitive Science*, *10*, 835-849.
- Lev-Ari, S. & Keysar, B. (2010). Why don't we believe non-native speakers? The influence of accent on credibility. *Journal of Experimental Social Psychology*, *46*(6), 1093-1096.
- Labotka, D., & Gelman, S. (under review). The development of children's identification of Foreigner Talk.
- Lindemann, S. (2002). Listening with an attitude: A model of native-speaker comprehension of non-native speakers in the United States. *Language in Society*, *31*, 419-441.

- Lindemann, S. (2005). Who speaks “broken English”? US undergraduates’ perception of nonnative English. *International Journal of Applied Linguistics*, 15, 187-212.
- Lippi-Green, R. (1997). *English with an accent: Language, ideology, and discrimination in the United States*. Psychology Press.
- Long, M. H. (1981). Input, interaction, and second-language acquisition. *Annals of the New York Academy of Sciences*, 379, 259-278.
- Lorge, I., & Kastos, N. (2019). Listener-adapted speech: Bilinguals adapt in a more sensitive way. *Linguistic Approaches to Bilingualism*, 9(3), 376-397.
- Lowrey-Kinberg, B. V. (2018). Procedural justice, overaccommodation, and police authority and professionalism: Results from a randomized experiment. *Police Practice and Research*, 19(2), 111-124.
- McCafferty, S. G. (2002). Gesture and creating zones of proximal development for second language learning. *The Modern Language Journal*, 86(2), 192-203.
- Munro, M. J. (2003). A primer on accent discrimination in the Canadian context. *TESL Canada Journal*, 20(2), 38-51.
- Neeley, T. (2012). Global business speaks English. *Harvard Business Review*, 90(50), 116-124.
- Over, H., & McCall, C. (2018). Becoming us and them: Social learning and intergroup bias. *Social and Personality Psychology Compass*, 12(4), e12384.
- Palomares, N. A., Giles, H., Soliz, J., & Gallois, C. (2106). Intergroup accommodation, social categories, and identities. *Communication accommodation theory: Negotiating personal relationships and social identities across contexts*, 123-151.
- Patterson M. M., & Bigler, R. S. (2006). Preschool children’s attention to environmental messages about groups: Social categorization and the origins of intergroup bias. *Child Development*, 77(4), 847-860.
- Pitts, M. J., & Harwood, J. (20105). Communication accommodation competence: The nature and nurture of accommodative resources across the lifespan. *Language & Communication*, 41, 89-99.
- Rao Hill, S. & Tombs, A. (2011). The effect of accent of service employee on customer service evaluation. *Managing Service Quality: An International Journal*, 21(6), 649-666.
- Ravid, D., Olshtain, E., & Ze’elong, R. (2003). Gradeschoolers’ linguistic and pragmatic speech adaptation to native and non-native interlocution. *Journal of Pragmatics*, 35, 71-99.

- Repetto, C., Pedroli, E., & Macedonia, M. (2017). Enrichment effects of gestures and pictures on abstract words in a second language. *Frontiers in Psychology*, 8, 2136.
- Rhodes, M., Leslie, S. J., & Tworek, C. M. (2012). Cultural transmission of social essentialism. *Proceedings of the National Academy of Sciences*, 109(34), 13526-13531.
- Roche, J. (1998). Variation in xenolects (foreigner talk). *Sociolinguistica*, 12, 117-139.
- Rubin, D. L., (1992). Nonlanguage factors affecting undergraduates' judgments of nonnative English-speaking teaching assistants. *Research in Higher Education*, 33(4), 511-531.
- Ruscher, J. B. (2001). *Prejudiced communication: A social psychological perspective*. Guilford Press.
- Ryan, E. B., Hamilton, J. M., & See, S. K., (1994). Patronizing the old: How do younger and older adults respond to baby talk in the nursing home? *The International Journal of Aging and Human Development*, 39(1), 21-32.
- Schieffelin, B. B., & Ochs, E. (1986). Language socialization. *Annual Review of Anthropology*, 15, 163-191.
- Segall, F., Birnbaum D., Deeb, I., & Diesendruck, G. (2015). The intergenerational transmission of ethnic essentialism: How parents talk counts the most. *Developmental Science*, 18(4), 543-555.
- Shatz, M. & Gelman, R. (1973). The development of communication skills: Modifications in the Speech of young children as a function of listener. *Monographs of the Society for Research in Child Development*, 38(05), 1-38.
- Silverstein, M. (1996). Monoglot 'standard' in America: Standardization and metaphors of linguistic hegemony. In Brenneis, D., Macaulay, R. (Eds.), *The Matrix of Language: Contemporary Linguistic Anthropology*. Westview, Boulder, pp. 284-306.
- Skinner, A. L., & Meltzoff, A. N. (2019). Childhood experiences and intergroup biases among children. *Social Issues and Policy Review*, 13(1), 211-240.
- Skinner, A. L., Meltzoff, A. N., & Olson, K. R. (2017). "Catching" social bias: Exposure to biased nonverbal signals creates social biases in preschool children. *Psychological Science*, 28(2), 216-224.
- Skinner, A. L., Olson, K. R., & Meltzoff, A. N. (2019). Acquiring group bias: Observing other people's nonverbal signals can create social group biases. *Journal of Personality and Social Psychology*.
- Skinner, A.L., Osnaya, A., Patel, B., Perry, S. P. (2019). Mimicking others' nonverbal signals is associated with increased attitude contagion. *Journal of Nonverbal Behavior*, 1-15.

- Skinner, A. L., & Perry, S. (2019). Are attitudes contagious? Exposure to biased nonverbal signals can create novel social attitudes. *Personality and Social Psychology Bulletin*, 1-11.
- Snow, C. E., van Eedn, R., & Muysken, P. (1981). The interactional origins of Foreigner Talk: Municipal employees and foreign workers. *International Journal of Social Language*, 28, 81-91.
- Sueyoshi, A. & Hardison, D. M. (2005). The role of gestures and facial cues in second language listening comprehension. *Language Learning*, 55(4), 661-699.
- Tarone, E. (1980). Communication strategies, foreigner talk, and repair in interlanguage. *Language Learning*, 30(2), 417-431.
- U.S. Census Bureau. (2015). *Detailed languages spoken at home and ability to speak English*.
- U.S. Census Bureau. (2016). *2012-2016 American community survey 5-year-estimates*.
- Uther, D., Knoll, M. A., & Burnham, D. (2007). Do you speak E-NG-L-I-SH? A comparison of foreigner- and infant-directed speech. *Speech Communication*, 49, 2-7.
- Valdman, A. (1981). Sociolinguistic aspects of foreigner talk. *International Journal of the Sociology of Language*, 28, 41-52.
- Wagner, L., Greene-Havas, M., & Gillespie, R. (2010). Development in children's comprehension of linguistic register. *Child Development*, 81, 1678-1686.
- Wagner, L., Vega-Mendoza, M., & Van Horn, S. (2014). Social and linguistic cues facilitate children's register comprehension. *First Language*, 34, 299-314.
- Weeks, T. E. (1971). Speech registers in young children. *Child Development* 42(4), 119-1131.
- Wu, F. H. (2002). Where are you really from? Asian Americans and the perpetual foreigner syndrome. *Civil Rights Journal*, 6(1), 14.
- Zhao, Y. (1997). The effects of listeners' control of speech rate on second language comprehension. *Applied Linguistics*, 18(1), 49-68.
- Zheng, Y., & Samuel, A. G. (2017). Does seeing an Asian face make speech sound more accented? *Attention, Perception, & Psychophysics*, 79(6), 1841-1859.
- Zuengler, J. (1991). Accommodation in native-nonnative interactions: Going beyond the "what" to the "why" in second language research. *Contexts of Accommodations: Developments in Applied Sociolinguistics*, 223-244.



Zwicky, A. M. & Zwicky, A. D. (1982). Register as a dimension of linguistic variation. In R. Kittredge & J. Lehrberger (Eds.), *Sublanguage: Studies of language in restricted semantic domains* (pp. 213-218). New York: Walter de Gruyter.