

A Theory and Test of How Speakers with Nonnative Accents are Evaluated in  
Entrepreneurial Settings

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Dissertation submitted in partial fulfillment of  
the requirements for the degree of Doctor  
of Philosophy of Business Administration in the Graduate School  
of Duke University

2016

ABSTRACT

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## **Abstract**

An abundance of research in the social sciences has demonstrated a persistent bias against nonnative English speakers (Giles & Billings, 2004; Gluszek & Dovidio, 2010). Yet, organizational scholars have only begun to investigate the underlying mechanisms that drive the bias against nonnative speakers and subsequently design interventions to mitigate these biases. In this dissertation, I offer an integrative model to organize past explanations for accent-based bias into a coherent framework, and posit that nonnative accents elicit social perceptions that have implications at the personal, relational, and group level. I also seek to complement the existing emphasis on main effects of accents, which focuses on the general tendency to discriminate against those with accents, by examining moderators that shed light on the conditions under which accent-based bias is most likely to occur. Specifically, I explore the idea that people's beliefs about the controllability of accents can moderate their evaluations toward nonnative speakers, such that those who believe that accents can be controlled are more likely to demonstrate a bias against nonnative speakers. I empirically test my theoretical model in three studies in the context of entrepreneurial funding decisions. Results generally supported the proposed model. By examining the micro foundations of accent-based bias, the ideas explored in this dissertation set the stage for future research in an increasingly multilingual world.

## **Dedication**

To my parents.

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# **1. Introduction, Literature Review, and Theory**

## ***1.1 Introduction***

As a result of increased immigration, globalization and technological advances, people increasingly have more opportunities to interact with others from different cultural backgrounds. According to the United Nations (2015), the number of international migrants worldwide has reached 244 million in 2015, an increase of 40 percent from 2000. One result of this trend is a rapid increase in the linguistic diversity in countries such as the United States. As of 2013, over 60 million U.S. residents—about one in five people—speak a language other than English at home (U.S. Census Bureau, 2010). Furthermore, a growing percentage of Americans report to be more fluent in a language other than English and prefer to use this language in work or educational settings (U.S. Census Bureau, 2010).

Managing a linguistically diverse society can be challenging for businesses and policy makers. Language-related differences are becoming an increasingly prominent source of tension and conflict in the American workplace and society at large. The Equal Employment Opportunity Commission (EEOC) reports that language-related discrimination suits are on the rise, as suits based on national origin, including language ability, rose 40 percent from 1997 to 2015 (EEOC, 2015). Poorly managed language policies can cause organizations to incur hefty costs, as illustrated by a California

hospital having to pay nearly \$1 million to settle a case over its English-only policy (EEOC, 2012). In healthcare, medical errors are more likely to occur among patients with limited English proficiency and when they occur, the consequences could be severe (Wasserman et al., 2014). In 2014, a nine-year old girl died due to the absence of interpretation services available at the hospital that treated her, which caused miscommunication that ultimately resulted in her death (Helms, 2014). As the country continues to become more linguistically diverse—the US Census Bureau (2015a) estimated an 85% increase of foreign-born population in the US from 2014 to 2060—it is crucial to understand how language diversity affects social interactions in the organizational life and American society at large.

In this dissertation, I focus on issues related to accent-based bias in the United States, where nonnative English speakers face social and economic backlash for speaking with a nonnative accent (Giles & Billings, 2004; Gluszek & Dovidio, 2010). As of June 1, 2015, 68 lawsuits that involve discrimination based on foreign accents have been filed in the US, an increase of 170% since 2000 (EEOC, 2015). As linguistic diversity in the US continues to rise, understanding why accent-based bias occur and designing interventions to reduce this type of bias are important issues for both management scholars and business practitioners alike.

Theoretically, an examination of accent-based bias contributes to organizational diversity research. Although language cues such as accents have been examined extensively in academic fields such as sociolinguistics, they have only recently received attention in organizational behavior research (Huang, Friedger, & Pearce, 2013; Huang, Friedger, & Pearce, 2014; Jonsen, Maznevski, & Schneider, 2011; Livingston, Schilpzand, & Erez, 2014). Consequently, management scholars know relatively little about the impact that nonnative accents have on individual and group level outcomes, and the processes through which these effects occur. Furthermore, whereas previous research on demographic diversity in organizations has primarily focused on people's perceptions of diversity based on visual cues, little research has focused on auditory cues such as accents. Thus, studying the effects of accent on interpersonal dynamics can help expand the ways that management scholars operationalize diversity in organizations.

In this dissertation, I propose and empirically test a theoretical model that explicates how speaker characteristics and perceiver characteristics interact to predict the evaluations of nonnative English speakers. Drawing on research from organizational behavior, social psychology, and sociolinguistics, this theoretical model proposes that accents evoke a complex set of inferences about the speaker's competence, values, and motivation to assimilate into the dominant culture, which in turn have important implications for how they are evaluated. Furthermore, this model explores the

conditions under which these inferences about the speaker are more or less likely to be made. Specifically, I examine how listeners' lay beliefs about whether accents can be controlled moderate their evaluations toward nonnative speakers. Taken together, this model and the empirical investigation of the model explore the psychological processes underlying evaluations of nonnative speakers and point to mechanisms that may help reduce accent-based bias.

The remainder of this chapter introduces the literature on interpersonal evaluations based on accents. I then introduce my conceptual model of how speakers are evaluated based on their accents. I empirically test my model in Chapter Two. Finally, Chapter Three discusses future directions and managerial implications. Taken together, this dissertation contributes to organizational diversity research by highlighting accent as a variable of interest in organizational behavior and providing a launch pad for future research in this area.

## ***1.2 Literature Review***

### **1.2.1 Accent: Definitions and Conceptual Issues**

The Oxford English Dictionary defines accent as a distinctive mode of pronunciation of a language, especially one associated with a particular nation, locality, or social class. Different accents have distinct phonological (e.g., pronunciation of vowels and consonants) and prosodic properties of speech (e.g., intonation, rhythm, and

tone) (Derwing & Munro, 2009). Accents can be distinguished into regional and foreign accents. A regional accent is a native speaker's variety that is characteristic for a certain region in a given country, whereas a foreign accent is characteristic of speakers from a different country (Mai & Hoffmann, 2014). Accents are produced when people pronounce sounds that do not exist in the language (or languages) that they first learned as a young child (Derwing & Munro, 2009).

Technically, everyone speaks with an accent, although speakers often do not recognize it themselves (Gluszek & Dovidio, 2010). For example, while General American is the widely accepted standard speech pattern in the United States (Mai & Hoffmann, 2014), it is perceived as a nonnative accent if it is spoken in a different country. Thus, whether or not a speaker is deemed to have a nonnative accent is highly relative depending on the respective language community (Mai & Hoffmann, 2014). Consistent with this notion, sociolinguists have generally defined a nonnative accent as "a manner of pronunciation with other linguistic levels of analysis (grammatical, syntactical, morphological, and lexical) more or less comparable with the standard language" (Gluszek & Dovidio, 2010, p. 215; see also Giles 1970). This definition emphasizes the idea that a nonnative accent differs from a native accent only in the way in which words are pronounced while keeping all other aspects of linguistic properties the same. In this dissertation, I limit my focus on nonnative English accents.

Accent is conceptually distinct from language fluency, which is broadly defined as one's ability to communicate information in a certain language to fulfill a social function (Jones, 1975). A nonnative speaker can still retain an accent even if he/she possess the same level of communication competency and clarity as a native speaker (Derwing & Munro, 2009; Giles, 1970; Gluszek & Dovidio, 2010). For example, Munro and Derwing (1995) found that, while native English speakers were able to accurately transcribe the messages delivered by nonnative English speakers from mainland China after a single hearing, they still rated the speakers as moderately or heavily accented.

In practice, however, the assessment of one's accent and language fluency are often correlated with each other, with speakers with a strong accent also deemed to be less fluent in the language (Chambers, 1997; Guillot, 1999; Schmidt, 1992; Wood, 2001). As I will discuss in more detail, people's subjective perception of a speaker's language fluency is much more complex to define as it is influenced by a variety of factors such as the listeners' language beliefs and the properties of the accent. For the purpose of this dissertation, and consistent with past research (Munro & Derwing, 1995), I will consider the presence of accents to be a subjective assessment made by the listener.

### **1.2.2 Detecting Accents in Others**

Beginning in the 1960s, an array of research in sociolinguistics has examined how listeners react to speakers with different accents. This research has found that people are

able to detect accent differences quickly and make rapid judgements based on these quick observations, possible even from a single word such as “hello” (Purnell, Idsardi, & Baugh, 1999). Moreover, listeners are able to finely discriminate accent strength, the extent to which an accented speech is different from a standard speech, and use this information to evaluate speakers (Nesdale & Rooney, 1996).

More recently, researchers in cognitive psychology have observed that accents can even trump visual stimuli such as one’s physical appearance in determining one’s ethnic background and in shaping people’s social preferences. Rakic, Steffens, & Mummendey (2011) found that, when both ethnic cues of looks and accents are available, observers were more likely to rely on another’s accent to infer their ethnic membership than on the basis of their looks. Kinzler and colleagues observed similar patterns in young children (Kinzler, Shutts, DeJesus, & Spelke, 2009). When the researchers showed a group of five-year olds a photo of another child who is either of the same race or a different race, the children preferred to play with the child of the same race. However, when the researchers included audio along with the photo, they found that the children would rather play with the child who spoke with the same accent, even if the other child is of a different race, than playing with a child who is the same race but spoke with a different accent. These findings shed new light on how people use visual versus auditory information to guide the social categorization process,

and found that people may rely on accents more heavily than on visual stimuli in certain situations.

According to some theorizing (Baker, 2001; Kurzban, Tooby, & Cosmides, 2001), people's sensitivity to accents and preferences for similar sounding others may reflect certain evolutionary advantages. In ancient times, people were not as geographically dispersed as they are now, so race was less likely to be a marker to distinguish between group members than it is now (Cosmides, Tooby, & Kurzban, 2003). Instead, social groups were differentiated along language cues such as accents. People used accents to determine whether others belonged to the same group, and whether they were well-intentioned towards one another (Kinzler et al., 2009). This message is not irrelevant to modern day society: Given the increasing number of biracials and multiracials in the United States, auditory cues such as accents may be more powerful in guiding the social categorization process than visual cues alone.

### **1.2.3 Bias against Speakers with Nonnative Accents**

A fairly consistent and robust finding from the body of research on social perceptions based on accents is that native-accented speakers are evaluated more favorably than speakers with nonnative accents (Giles & Billings, 2004). For example, native-accented speakers are perceived to be more competent and socially attractive than nonnative-accented speakers, with native speakers' messages perceived to be more

impactful, memorable, and credible (Giles & Billings, 2004; Gluszek & Dovidio, 2010; Lev-Ari & Keysar, 2010). Such preference for similar sounding others has been found across different age groups (Giles, Henwood, Coupland, Harriman, & Coupland, 1992; Kinzler et al., 2009), national cultures (Tsurutani, 2012), and a variety of socio-demographic categories (Cargile, 2002; Souza, Byers-Heinlein, Poulin-Dubois, 2013).

Many immigrants speak English with an accent, even after many years of living in the United States (Moyer, 2004; Munro & Derwing, 1995; Scovel, 2000). Speakers with a nonnative accent often face disadvantages in their everyday lives. In their review on the bias against nonnative speakers, Gluszek and Dovidio (2010) detailed how people with nonnative accents experience discrimination in housing (Zhao, Ondrich, & Yinger, 2006), the courts (Frumkin, 2007; Lippi-Green, 1997), higher education (Kavas & Kavas, 2008; Rubin, 1992), and employment settings (Kalin & Rayko, 1978; Matsuda, 1991; Nguyen, 1993). Compared to native speakers, speakers with a nonnative accent are rated as less qualified for jobs (Carlson & McHenry, 2006; Matsuda, 1991; Purkiss et al., 2006), less likely to be promoted to managerial positions (Hosoda, Nguyen, & Stone-Romero, 2012; Hosoda & Stone-Romero, 2010), and less likely to receive venture capital funding (Huang et al., 2013). Accent-based bias has been documented in a wide range of professions as well as levels of organizational rank (Fuertes, Potere, Ramirez, 2002; Huang et al., 2013; Mai & Hoffmann, 2014; Rao Hill & Tombs, 2011; Tombs & Rao Hill,

2014; Vaerenbergh & Holmqvist, 2013; Wang, Arndt, Singh, Biernat, & Liu, 2013).

Importantly, these disadvantages persist even after controlling for speakers' communication capabilities and comprehensibility (Gluszek & Dovidio, 2010).

Gluszek and Dovidio (2010) pointed out that accent-based discrimination is particularly problematic because both formal policies and social norms against language-based discrimination seem to be weaker than against other forms of discrimination such as those based on race and gender. Title VII of the Civil Rights Act of 1964 prohibits discrimination based on foreign accent unless the accent materially interferes with job performance. This implies that employers are protected from being sued for discrimination if they can prove that a person's accent impairs communication skills that are critical to the successful operation of a business (Ng, 2007; Nguyen, 1993). Because there are no objective criteria for assessing whether accents impede normal business operations, it is sometimes difficult for the court to discern whether employers' claims are accurate or whether the claims are based on their own subjective and sometimes biased opinions (Lippi-Green, 1994; Nguyen, 1993). Without more specific policies in place to protect nonnative speakers, accent-based bias can continue to deprive nonnative speakers' employment, advancement opportunities, and associated social and economic gains.

### 1.2.4 Evaluation of Different Nonnative Accents

While there is a general bias against speakers with nonnative accents, some research has found that the degree of negative evaluations toward nonnative speakers is partially determined by the specific variety of the accent (e.g., Canagarajah, 2015; Kroskrity, 2004; Lindemann, 2005; Lippi-Green, 1997). In one study, American undergraduates students, all of them native English speakers, were asked to rate nonnative English speakers across the world, including speakers from countries such as China, France, Germany, India, Italy, Jamaica, Japan, Mexico, Russia, and Spain (Lindemann, 2005). Nonnative English speakers from Mexico and China received the most negative ratings, whereas speakers from France, Italy, and Germany received the most favorable ratings. These results suggest that the evaluations of nonnative speakers are not based on the accent per se—because all accented speakers would be evaluated comparably if that’s the case—but rather information about cultures, as well as stereotypes associated with the specific social groups, that are conveyed by the accent. For example, Lippi-Green (1997) has argued that in the US, it is “not all foreign accents, but only accent linked to skin that isn’t white, or which signals a third-world homeland” that evoke the most negative reactions (p. 238-239). She has also pointed out that language attitudes in the United States are closely related to patterns of immigration, such that groups whose English has been most criticized have corresponded to the

largest recent immigrant groups. This observation is consistent with the broad research in sociolinguistics, which posits that the status of a language is closely associated with the socioeconomic status of the region or country that speaks it, such that languages associated with high status regions or countries are afforded high status whereas languages associated with low status regions or countries are afforded low status (Kroskrity, 2004; Schieffelin, Woolard, & Kroskrity, 1998). One implication of this theorizing is that, as the socioeconomic status of countries ebb and flow, so should the status of the language that is associated with it. Thus, language cues such as accents constitute a powerful marker of the speakers' social identity.

### **1.2.5 Social Identity Effects of Accent-based Evaluations**

The existing literature has provided strong evidence that people tend to discriminate against those with accents, and has offered some explanations to understand why people demonstrate a persistent bias towards nonnative speakers. The most predominant theory that has been used to explain accent-based evaluations is Social Identity Theory (SIT, Tajfel & Turner, 1986). According to SIT, people belong to social groups as a mean for uncertainty reduction and self-enhancement; consequently, different social groups compete against each other for prestige and status. Throughout this process, people are motivated to evaluate their own social group more positively and other social groups negatively, as to maximize the distinction between different

groups. The central concept of social identity theory is social categorization, a cognitive process through which people categorize others into social groups (Hogg et al., 2004; Hogg, 2006; Hogg & Abrams, 1988; Rubin & Hewstone, 1998; Tajfel, 1972; Tajfel & Turner, 1979). It can happen spontaneously and people put others into different social categories once they have enough information for cuing a meaningful social category (Hogg & Abrams, 1988). Once the categorization process is complete, people tend to see others according to their group membership rather than as individuals (Hogg, 2006; Hogg et al., 2004). Importantly, social categorization allows people to evaluate their own social group favorably while derogate outgroup members.

Accents serve as a sensitive marker that guides the social categorization process and provide rich information such as the speakers' socioeconomic, geographic, and ethnic backgrounds (Giles, 1970). Nonnative accents are one of the strongest signals that one is not native born. Subsequently, people use accents to ascribe speakers to different social groups. Because people are motivated to self-enhance and to maximize the distinction between the ingroup and outgroup, they tend to evaluate native accented speakers more positively and evaluate nonnative accented speakers more negatively.

While a few existing studies have drawn on SIT to explain why speakers with nonnative accents are often discriminated against, most of these studies have not empirically tested for mechanisms. Rather, they are based on "simple black-box

experiments” comparing a standard accent with nonnative accents (Mai & Hoffmann, 2014, p. 139). Furthermore, extant research has primarily focused on the effects of speaker characteristics, namely their accent, on the evaluation of the speakers. However, relatively little has examined how perceiver characteristics can interact with speaker characteristics to predict people’s attitudes toward nonnative speakers. Yet, an abundance of social perception research has found that perceivers’ beliefs (Jost, Glaser, Kruglanski & Sulloway, 2003; Kruglanski, Pierro, Mannetti, & De Grada, 2006) can play an important role in predicting people’s attitudes toward others. Thus, understanding potential moderators can further explicate the processes through which accent effects occur.

### ***1.3 Current Research***

The aims of the current research are: (a) to complement the existing emphasis on main effects of accents, which focuses on the general tendency to discriminate against those with accents, by examining moderators that shed light on the conditions under which accent-based bias is most likely to occur, and (b) to offer an integrative model to organize explanations for accent-based bias into a coherent framework. In doing so, the current research helps to advance management scholars’ collective understanding of this field of research and to design and implement policies to help reduce accent-based bias.

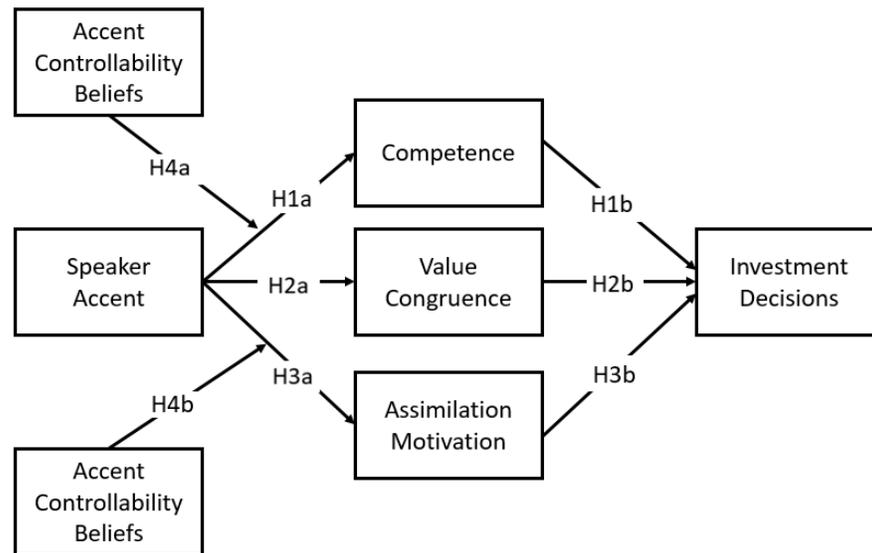
I situate my exploration of these ideas in the context of entrepreneurial evaluations. An increasing number of immigrants to the United States are pursuing entrepreneurial ventures (e.g. Kloosterman & Rath, 2001; Rath & Kloosterman, 2000). For example, the Kaufmann foundation, a leading nonprofit organization that focuses on entrepreneurship and education, estimated that 52% of all new Silicon Valley companies were founded by immigrants between 1995 and 2005 (Jackson, 2015). Given that securing funding from venture capitalists is essential for aspiring entrepreneurs, accent-based bias in this context can lead to blocked opportunities for foreign-born entrepreneurs and also undercut a major source of economic growth in the United States (Huang et al., 2013).

Theoretically, studying accent-based bias in this context can contribute to management scholars' understanding of entrepreneurial funding decisions. Previous research on entrepreneurial investment decisions has found that funders are often influenced by entrepreneurs' characteristics independent of the pitched idea or product (Elsbach & Kramer, 2003; Huang et al., 2013). For example, venture capitalists are more likely to fund entrepreneurs who demonstrate passion for their ideas or products (Chen, Yao, & Kotha, 2009). Building on this research, it is possible that accents can also affect the perceived quality of the business pitch through which entrepreneurs try to convince venture capitalists to invest in their products or services. Thus, entrepreneurial

evaluations provide an interesting setting to study accent-based bias for both practical and theoretical reasons.

#### ***1.4 A Theory of How Nonnative English Speakers are Evaluated in Entrepreneurial Settings***

Drawing on theories of social identity, intergroup relations, and social stigma, I propose a model that explicates when and why accent-based bias occurs, and posit that the bias against nonnative speakers is a function of both speaker characteristics (i.e., the main effects of accents) and perceiver characteristics (i.e., the moderating variables). I situate this model in the entrepreneurial context and show how these processes can affect funding decisions (see Figure 1).



**Figure 1. A theoretical model examining the evaluations of speakers based on their accents in an entrepreneurial setting.**

In terms of accent main effects, this model proposes that past explanations on accent-based bias can be organized by their effects on assessments of the speaker (i.e., evaluations at the personal level), assessment of the speaker in relation to the perceiver (i.e., evaluations at the relational level), and assessment of the speaker in relation to the dominant social group (i.e., evaluations at the group level). I discuss each in turn below.

At the personal level, the model examines how nonnative accents affect the evaluation of the speaker him or herself. Specifically, I suggest that perceivers use accents as a cue to assess speaker's competence, which is generally defined as one's ability to effectively accomplish their goals (Fiske, Cuddy, Glick, & Xu, 2002).

Competence is likely an important trait to consider because it constitutes a fundamental dimension of social perception and competence related traits facilitate or hinder mainly the self and less so of the people around the judged person (Fiske et al., 2002). I propose that speakers with a nonnative accent will be perceived to be less competent than speakers without an accent (H1a), and this perception can lead to less favorable entrepreneurial funding decisions (H1b).

At the relational level, the model proposes that nonnative accents elicit concerns about how perceivers themselves might be impacted. In contrast to the analysis at the personal level, the focus at the relational level is on the perceivers themselves and not the speakers. Specifically, I suggest that perceivers use accents as a cue to assess speaker's values and whether these values are in line with their own values. In other words, perceivers use accents to assess the extent to which there is value congruence between the speaker and the perceiver. I chose to focus on value congruence as the central construct at the relational level because prior research has found it to be an important predictor of the quality of interpersonal relationships, particularly across different social and cultural groups (Byrne, 1971; Rokeach, 1973). I propose that speakers with a nonnative accent will be perceived to have less similar values as the perceiver (H2a), and this perception can lead to less favorable entrepreneurial funding decisions (H2b).

Finally, at the group level, the model examines how perceivers use speaker's accent to assess whether or not they want to fit in with the ingroup. This level of analysis focuses on the speaker's position in the dominant cultural group. Specifically, I suggest that perceivers use accents to infer speakers' assimilation motivation, an important determinant of how ethnic minorities are evaluated by majority members of the host society (i.e., Zagefka & Brown, 2002). I propose that nonnative accents can elicit the inference that the speaker is not motivated to assimilate into the dominant cultural group (H3a), and this perception can lead to less favorable entrepreneurial funding decisions (H3b).

In addition to integrating past research that explains the main effects of nonnative accents into a coherent framework, this model also seeks to complement the existing emphasis on main effects of accents by examining moderating variables that shed light on the conditions under which accent-based bias is most likely to occur. To this end, I explore how perceiver characteristics can constrain these negative evaluations of nonnative speakers, as past research has clearly demonstrated the role of perceiver beliefs in influencing social perceptions (e.g., Crandall & Eshleman, 2003; Jost et al., 2003). In particular, I examine the moderating role of people's lay beliefs about the controllability of nonnative accents. I propose that people should be more likely to use speaker accent as a cue to make inferences about the speakers' competence and

assimilation motivation to the extent that they believe that accents can be controlled (H4a and H4b).

In sum, this multi-level conceptualization of the effects of nonnative accent suggests that accent-based bias stem from multiple sources that involve the evaluations of speaker's competence, their perceived value congruence, and their perceived motivation to assimilate into the dominant cultural group. Furthermore, perceivers' beliefs about accent controllability can constrain the extent to which these processes are likely to occur. I discuss each element of the model in the section below.

### **1.4.1 Accents and Evaluation of Speakers' Competence**

#### **1.4.1.1 Assessing Competence in Others**

I suggest that, at the personal level, perceivers use accents as a cue to assess speaker's competence. According to the Stereotype Content Model (SCM; Fiske et al., 2002), competence refers to one's general capability to achieve goals and reflects traits that are related to perceived ability, such as intelligence, skill, creativity, and efficacy (Fiske et al., 2002). Competence is a fundamental dimension of social perception and critical to intergroup functioning. People are keen to assess others' competence and all social groups are thought to be evaluated along this dimension (Cuddy, Fiske, & Glick, 2007; Fiske et al., 2002; Fiske, Cuddy, & Glick, 2007). For example, in an analysis of 200

trait items, Wojciszke, Dowhyluk, and Jaworski (1998) found that competence perceptions accounted for 42% of global evaluations of a person.

Competence perceptions play a central role in predicting cognitive, affective, and behavioral responses toward individuals and social groups across a wide range of domains (e.g., Clausell & Fiske, 2005; Eckes, 2002; Glick & Fiske, 1996; Wojciszke & Klusek, 1996). According to the Behavior from Intergroup Affect and Stereotypes (BIAS) framework (Cuddy et al., 2007), perceptions of competence interact with perceptions of warmth to elicit unique affective and behavioral responses about most social groups, with high competence social groups eliciting emotions such as admiration, jealousy, and envy, and low competence social groups eliciting emotions such as pity, sympathy, and anger. In sum, competence perceptions play an important role in shaping individual and intergroup perceptions. Given its centrality in social perceptions, it will likely affect the evaluation of nonnative speakers as well.

#### **1.4.1.2 Using Accents to Infer Speakers' Competence**

Nonnative accents can evoke unfavorable inferences about speakers' competence, or their ability to effectively pursue their goals (Fiske et al., 2002).

Perceptions of competence may be negatively affected if one believes that nonnative speakers lack the ability to communicate effectively. Although accents and language fluency are different constructs conceptually, people might conflate the two in reality,

such that they may use accents to infer that the speakers' command of the language is poor (Chambers, 1997; Guillot, 1999; Schmidt, 1992; Wood, 2001). Furthermore, nonnative accents can negatively affect speech comprehension, even if the speaker has a perfect command of the language other than deviating from pronunciation norms (Munro & Derwing, 1995). Part of the challenge in comprehending nonnative speech may come from an increased difficulty in processing nonnative speech (Lev-Ari & Keysar, 2010; Munro & Derwing, 1995). Munro & Derwing (1995) found that while native speakers were able to transcribe nonnative speech accurately—an objective assessment of speaker comprehension—it also took them longer to process nonnative (vs. native) speech. Subsequently, they provided lower comprehension ratings for nonnative speech even though they were able to comprehend nonnative speech just as well as native speech, as judged by their accurate transcriptions of both native and nonnative speech. Lev-Ari and Keysar (2010) replicated these findings in a more recent study, and found that this was the case regardless of whether the speaker had a mild or heavy accent. These results are consistent with findings from the psychological literature on cognitive disfluency, which finds that people process information at varying degrees of ease, and information that is difficult to process can distort perceptions and lead to more negative evaluations (Alter & Oppenheimer, 2008). Thus, there seems to be some cognitive costs associated with listening to accented speech, such that it negatively

affects the comprehension of speakers and renders speakers' communication less effective.

Nonnative speakers may also be used as a cue to assess the speakers' ability to influence others. The ability to influence people is an important aspect of competence in most organizational environments, as success in achieving one's goals often requires the cooperation of others (e.g., Johnson, Maruyama, Johnson, Nelson, & Skon, 1981).

Because nonnative accents signal that the speakers are not native born, perceivers might assume that they have less knowledge of the dominant culture and norms as well as of the subtle needs and preferences of locals (Molinsky & Perunovic, 2008). To the extent that people assume nonnative speakers do not understand the prevailing social or cultural norms, they might also infer that nonnative speakers lack the ability to effectively navigate through social interactions, and perhaps more importantly, to have the ability to successfully influence others. Supporting this assertion, Huang et al. (2013) found that nonnative speakers were perceived to have weak political skills, and this perception led to less favorable evaluations of nonnative speakers as a potential job candidate.

Taken together, the processing difficulty of nonnative-accented speech, combined with the perception that nonnative speech reflects weaker language skills, and the belief that nonnative speakers are less effective at influencing others can all

contribute to the perception that nonnative speakers are less competent than native speakers. Consequently, this perception should lead to unfavorable evaluations of speakers with nonnative accents.

*Hypothesis 1a: Speakers with a nonnative accent are perceived to be less competent than speakers without an accent.*

Perceptions of competence have been documented to predict a wide range of individual outcomes in organizational contexts, such as job interview success (Arvey & Campion, 1982), promotion (Heilman, 2001), and leadership evaluations (Todorov, Mandisodza, Goren, & Hall, 2005). More specifically in entrepreneurial settings, individual founders' competence has been found to predict venture performance (Chandler & Hanks, 1994) and funding success (Baron & Markman, 2003). Furthermore, Harrison, Dibben, & Mason (1997) found that trust plays an important role in investor's funding decisions. Given that perceived competence is an important aspect of trust development (Mayer, Davis, & Schoorman, 1995), it is likely to predict entrepreneurial funding success. Thus, I predict that:

*Hypothesis 1b: Perceived competence will positively predict entrepreneurial funding decisions.*

## **1.4.2 Accents and Evaluation of Speakers' Value Congruence**

### **1.4.2.1 Assessing Values**

At the relational level, perceivers may use accents to infer whether the speaker shares similar values as they do. Values are goals of varying importance that serve as guiding principles in people's lives (Schwartz, 1992; Rokeach, 1973). Over the years, several models have been proposed to understand the psychological content of values (see Rohan, 2000 for a review). One of the most widely accepted conceptualization of the typology of values is the circumplex model of human values proposed by Schwartz (1992). The model describes a set of values all individuals and societies are responsive to (Schwartz, 1992; Schwartz & Bilsky, 1990). The circumplex model posits that the value system is consisted of two motivational dimensions, with each dimension describing a tension between two seemingly competing set of values. One dimension describes the tension between openness and change-conservation, which relates to the conflict between being motivated to "follow their own intellectual and emotional interests in unpredictable and uncertain directions" or "to preserve the status quo and the certainty it provides in relationships with close others, institutions, and traditions" (Schwartz, 1992, p. 43). The second dimension, labeled self-enhancement-self-transcendence, relates to the conflict between concern for the consequences of own and others' actions for the self (i.e., self-enhancement) and concern for the consequences of own and others' actions

in the social context (i.e., self-transcendence). Ten motivational value types, such as power, achievement, hedonism, and conformity, are arranged along these two dimensions. Individuals vary in their priorities of these values and they draw from these values to guide their decisions and actions (Schwartz, 1992).

#### **1.4.2.2 Inferring Value Congruence from Accents**

Perceivers may use nonnative accents to infer that the speakers have different values than they do, and this can negatively affect how they are evaluated. Accents serve as a sensitive marker that guides the social categorization process through which people sort others into social groups (Tajfel & Turner, 1979; Turner et al., 1987). The categorization process happens spontaneously and people put others into different social categories as soon as they encounter enough information sufficient for cuing a meaningful social category. Notably, people seek out prototypes—the most representative features of a group—to differentiate social groups (Turner, 1985). Because prototypes are characteristics that distinguish one’s social group from another, categorization based on prototypes allows for the maximization of ingroup similarities and outgroup differences. One of the most prototypical characteristics used to distinguish social groups is the language that the person speaks (Devos & Banaji, 2005), with the most prototypical members of the group speaking the language with a native accent (Kinzler et al., 2009). Thus, nonnative accents are one of the strongest signals that

one is not native born, or not raised by native-born parents. Consequently, nonnative speakers are categorized as a member of the outgroup (Giles, 1970). Because outgroup members are generally perceived to hold different values and beliefs than ingroup members (Biernat, Vescio, & Theno, 1996), perceivers may therefore assume that speakers with a nonnative accent have different values than they do.

*Hypothesis 2a: Speakers with a nonnative accent are perceived to have less value congruence as the perceiver than speakers without an accent.*

Perceived value congruence may in turn have downstream consequences for entrepreneurial funding decisions. An abundance of research has found that perceptions of value incongruence can lead to less favorable evaluations of the target (Newcomb, 1956; Rokeach, 1973; Schwartz, 1992, 1994; Struch & Schwartz, 1989). In particular, research on intergroup relations has found that perceived value incongruence significantly influences people's attitude towards outgroup members, such that greater perceived value incongruence is associated with more hostility and prejudice. For example, people are less willing to have social contact with and are more likely to discriminate against outgroup members who are perceived to have different values than they do (Insko, Nacoste, & Moe, 1983; Roccas & Schwartz, 1993). Similarly, Biernat et al., (1996) found that perceived value incongruence is positively correlated with Whites' anti-Black attitudes and their scores on the Modern Racism scale. Following previous

research, it is possible that a lack of perceived value congruence can also lead to less favorable entrepreneurial funding decisions.

*Hypothesis 2b: Perceived value congruence will positively predict entrepreneurial funding decisions.*

### **1.4.3 Accents and Evaluation of Speakers' Assimilation Motivation**

At the group level, observers may use speaker's accent to assess whether or not they belong to the ingroup. That is, in addition to inferences about value congruence, perceivers also use accents to infer speakers' cultural allegiance. A more audible accent can lead to the inference that the speaker is not motivated to assimilate into the dominant culture. An abundance of research examining the acculturation of immigrants has found that majority members have the most positive responses toward cultural minorities when they perceive a desire from minority groups to adapt to majority group's cultural norms (Arends-Toth & Van de Viiver, 2003; Maisonneuve & Testé, 2007; van Osch & Breugelmans, 2012; Verkuyten, 2011). This preference for minority group's adaption to host culture has been explained by perceptions of threat (López-Rodríguez, Zagefka, Navas, & Cuadrado, 2014), such that minority members who are seen to adapt the majority culture are perceived to be less threatening to majority group members than minority members who resist assimilation. A common marker people use to assess minority members' degree of assimilation is their ability to speak the host culture's

language (Waters & Jimenez, 2005). An accented-speech is likely to evoke the inference that one has not assimilated into the host culture than speeches that mimic more closely to native sounds. Thus, I predict that:

*Hypothesis 3a: Speakers with a nonnative accent are perceived to be less motivated to assimilate into the dominant culture than speakers without an accent.*

Assimilation motivation can in turn predict entrepreneurial funding decisions. Prior research has found that group membership is an important determinant of resource allocation and access to opportunities, with people allocating more resources and providing more access to opportunities to ingroup members relative to outgroup members. Yet, resource allocation to outgroup members may also vary, with outgroup members who are perceived to have adapted majority group's norms receive more positive outcomes than those who are seen to have refused to adapt. For example, minority group members who adopt Western aesthetic ideals have reported to experience greater social acceptance from majority members, more personal success, and higher degrees of upward social mobility (Robinson-Moore, 2008). Building on prior research, I predict that:

*Hypothesis 3b: Perceptions of assimilation motivation will positively predict entrepreneurial funding decisions.*

#### **1.4.4 The Moderating Role of Perceivers' Accent Controllability Beliefs**

The previous section suggests that accents evoke a complex set of inferences about the speaker. Accents lead to negative evaluations about the speaker's competence, perceptions of value congruence, and the inference that the speaker is not motivated to assimilate into the dominant culture. These inferences, in turn, can contribute to the disadvantages that nonnative English speakers face in various aspects of their lives, and in this case, their probability of obtaining entrepreneurial funding.

The negative effects of accent are so pervasive that having an accent has been labeled as a stigmatizing mark of the speaker (Allport, 1954). A stigma refers to an attribute of a person that is "deeply discrediting" and reduces the person "from a whole and usual person to a tainted, discounted one" (Goffman, 1963, p. 3). Scholars examining social stigma have generally agreed that any characteristic that can be devalued in a social context can be considered stigmatizing (Dovidio, Major, & Crocker, 2010). Because nonnative accents—especially accents that are associated with low status immigrant groups—are devalued across a wide range of social contexts, they have been characterized as a stigmatizing feature of nonnative English speakers (Gluszek & Dovidio, 2010).

However, an abundance of social perception research has found that perceiver characteristics, such as their beliefs and motivation (Jost et al., 2003; Kruglanski et al.,

2006), play an important role in moderating people's attitudes toward stigmatized individuals. In particular, perceived controllability is an important determinant of people's evaluations toward individuals with stigmatized characteristics.

Building on this research, I suggest that perceivers' belief about whether accents can be controlled can play a significant role in determining perceivers' evaluations toward nonnative English speakers. In the next section, I first review the literature on the role of perceived controllability and evaluations of stigmatized individuals. I then discuss how people's beliefs about the controllability of accents can play a key role in accent-based bias.

#### **1.4.4.1 Perceived Controllability and Bias against Stigmatized Individuals**

Social psychological research on stigmatization has found that whether people express a bias toward stigmatized groups often depends on the specific attributes of the stigmatized feature (Crandall & Eshleman, 2003; Crocker, Major, & Steele, 1998; Jones et al., 1984). In particular, perceived controllability is an important determinant of people's evaluations toward individuals with stigmatized characteristics. People tend to evaluate stigmatized individuals more harshly when the stigma is perceived as controllable and when the individual is perceived as responsible for having it (Crandall & Moriarty, 1995; Crocker et al., 1998; Herek, 2000; Jones et al., 1984; Shaver, 1985; Weiner, 1986). For example, people who were told that weight is within an individual's control expressed

greater dislike and disgust toward overweight and obese people, and rated them as lacking willpower compared to people who were told that weight is not within an individual's control (Agerström & Rooth, 2011; Crandall, 1994).

Perceived controllability affects people's evaluation of stigmatized others by influencing their attributions of responsibility, such that greater perceived controllability elicits greater attribution of responsibility (Heider, 1958). That is, to the extent that the stigmatized feature is perceived to be controllable, individuals with the feature are deemed responsible for their action, as they could have chosen to behave in a way that would have made the harm less likely but did not do so (Pepitone, 1975).

Attribution of responsibility, in turn, affects the emotional, attitudinal, and behavioral responses to stigmatized individuals and groups (Weiner, Perry, & Magnusson, 1988). Whereas uncontrollable stigma elicits pity, sympathy, and helping behavior (Menec & Perry, 1998; Rush, 1998; Weiner et al., 1988), controllable stigma elicits anger, hostility, and a refusal to help. Furthermore, perceived controllability of stigma lead people to express greater prejudice toward stigmatized individuals and groups, such as sexual minorities (Haslam, Rothschild, & Ernst, 2002; Herek, 2000), people with HIV/AIDS (Anderson, 1992), people with alcoholism (Humphreys & Rapaport, 1993), the physically ill (Crandall & Moriarty, 1995), the poor (McCoy &

Major, 2007; Zucker & Weiner, 1993), and people with Alzheimer's, cancer, and blindness (Weiner et al., 1988).

Not only do people express more prejudice toward stigmatized individuals to the extent that they believe the stigma is controllable, they are also more likely to blame these individuals for their own fate (Weiner, 1993, 1995, 1996). Third-party observers were less likely to attribute prejudice to those who behaved in a discriminatory way toward persons whose flaws are perceived as within their control than persons whose flaws are perceived to be beyond their control (Rodin, Price, Sanchez, McElligot, 1989). For example, people were more likely to blame a manager for not hiring an overweight job candidate when the job candidate's weight was attributed to a hormonal imbalance than when it was attributed to overeating (Rodin et al., 1989). Taken together, the literature on social stigma provides strong evidence that perceptions of controllability of stigma have a significant impact on how stigmatized individuals and groups are evaluated and treated.

#### **1.4.4.2 The Controllability of Accents and Evaluations of Speakers with a Nonnative Accent**

Given that people's beliefs about the controllability of stigmatized features have been shown to be critical in shaping responses to a range of stigmas (Crocker et al., 1998; Weiner et al., 1988), it seems very likely to be relevant in the context of accents (Gluszek

& Dovidio, 2010). While there are some instances where people can modify their accents with long-term practice (Flege, 1987; Moyer, 2007), there is a general agreement amongst researchers that it is unlikely for individuals who learn a language later in life to acquire a native-like pronunciation (Flege, Yeni-Komshian, & Liu, 1999; Johnson & Newport, 1989). Psycholinguistics research has found that accents often persist regardless of speaker's motivation, level of self-consciousness, and identification with the dominant social group (Flege et al., 1999). However, people may hold the belief that accents can be changed based on anecdotal stories of instances in which people have obtained native-like accents (Moyer, 2007) and the media portrayal of actors successfully imitating various accents (Gluszek & Dovidio, 2010). Furthermore, the existence of a growing industry of accent reduction training programs implies that nonnative accents are controllable and can be changed or eliminated at the will of the speaker (Montgomery, 1999). Thus, although research suggests that accents are generally difficult to change, it is possible that people may have different lay theories about whether accents can be changed.

People's different lay theories about the controllability of accents can moderate their evaluations of nonnative speakers. To the extent that perceivers believe accents can be controlled, hearing a nonnative accent can exacerbate the inference that the speaker is not competent. That is, one might infer that a speaker with a nonnative accent lacks the

ability to correct their utterance to make their speech more effective. In contrast, for those who believe that accents are difficult to control, they should be less likely to link a speaker's accented speech to a lack of capability to correct their accents, and consequently should be less likely to use accents to infer a speaker's competence.

*Hypothesis 4a: Accent controllability beliefs will moderate the effect of nonnative accents on speakers' perceived competence, such that individuals who believe that accents can be controlled will be more likely to rate speakers with a nonnative accent as less competent than individuals who believe that accents cannot be controlled by the speaker.*

Similarly, accent controllability beliefs should moderate the likelihood that listeners will use accents to infer speakers' assimilation motivation. To the extent that people believe accents are controllable, they should be more likely to attribute the nonnative accent to the speaker's lack of motivation to fit in with the dominant culture. That is, they should be more likely to infer that the speaker had a choice to "correct" their accent and to sound more like a native speaker, but *chose* not to do so. In contrast, to the extent that people believe accents are not controllable, they should be less likely to hold nonnative speakers responsible for having an accent, and the negative evaluation should be attenuated.

*Hypothesis 4b: Accent controllability beliefs will moderate the effect of nonnative accents on speakers' perceived motivation to assimilate, such that individuals who believe that accents*

*can be controlled will evaluate speakers with a nonnative accent as less motivated to assimilate than individuals who believe that accents cannot be controlled.*

## **2. Empirical Chapter**

### ***2.1 Overview of Studies***

I empirically tested my theoretical model in three studies where participants listened to and evaluated a business pitch by either a native or nonnative English speaking entrepreneur. Each study built on the previous one by adding an additional element of the model to test. Study 1 examined how nonnative accents affected perceptions of speakers' competence (H1a), and whether competence mediated funding decisions (H1b). It also tested whether participants differed in their beliefs about the controllability of accents, and to the extent they did, whether their belief moderated the effect of accents on competence assessment (H4a). Study 2 built on Study 1 by examining how speaker accent interacts with perceiver accent controllability beliefs to affect perceptions of both competence and assimilation motivation, and whether these perceptions in turn predicted entrepreneurial funding decisions. Finally, Study 3 tested the overall model by examining how speaker accent affects perceptions of competence (H1a), value congruence (H2a), and assimilation motivation (H3a), and whether these perceptions in turn predicted entrepreneurial funding decisions (H1b, H2b, and H3b). Study 3 also examined the moderating role of accent controllability beliefs on perceptions of competence (H2b) and assimilation motivation (H4b).

## ***2.2 Study 1***

In Study 1, I examined whether accents affected speaker competence, and whether competence evaluations predicted entrepreneurial funding decisions. I also measured whether people held different beliefs about whether accents can be controlled, and to the extent they did, whether these beliefs moderated the effect of accent on competence perceptions. Participants listened to and evaluated an entrepreneur who gave a business pitch during an entrepreneurial competition. Participants were randomly assigned to one of two experimental conditions. In the native accent condition, participants heard a business pitch delivered by a speaker with an American accent. In the nonnative accent condition, participants heard the same pitch delivered by a speaker with a Chinese accent. I predicted that people who believed that accents were controllable would evaluate the Chinese accented entrepreneur less favorably than people who believed that accents were difficult to control. However, given that the American accented entrepreneur is unlikely to trigger inferences about accents, accent controllability beliefs should not affect the evaluation of the American accented entrepreneur.

## 2.2.1 Method

### 2.2.1.1 Participants

I recruited 400 native English speakers (42% female;  $M_{age} = 33.61$ ,  $SD = 10.81$ ; 70% White, 7% Black, 13% Asian, 8% Hispanic, 2% Other) from Amazon Mechanical Turk. I followed the recommendation of Gervais, Jewell, Najle, & Ng (2015) and collected 100 observations per cell. Past research has shown that samples collected from Amazon Mechanical Turk are demographically and geographically diverse and provide similar quality data as those obtained through traditional survey methods (Berinsky, Huber, & Lenz, 2012; Buhrmester, Kwang, & Gosling, 2011; Mason & Suri, 2012; Paolacci, Chandler, & Ipeirotis, 2010). Furthermore, online experiments have been demonstrated to be as effective as paper-and-pencil surveys and laboratory experiments for experimental behavioral research (Booth-Kewley, Edwards, & Rosenfield, 1992; Crump, McDonnell, & Gureckis, 2013).

Furthermore, using an online sample such as Amazon Mechanical Turk may be particularly appropriate in this context given the increasing popular practice of crowdfunding in entrepreneurial financing. Crowdfunding is a grassroots movement whereby aspiring entrepreneurs can raise financial capital for their business through the collective effort from a large number of people, typically via the internet (Belleflamme, Lambert, & Schwienbacher, 2014). Instead of relying on traditional financing methods by

approaching banks, angel investors, and venture capital firms, entrepreneurs increasingly rely on crowdfunding to start their business or launch their product. Given that Amazon Mechanical Turk recruit participants from a wide range of age, work experiences, and occupations, this population may have real decision power when it comes to entrepreneurial financing decisions in crowdfunding contexts.

### **2.2.1.2 Materials and Procedure**

Participants were informed that the purpose of the study was to evaluate entrepreneurial ideas. They were told that a team of investors had recently served as judges in an entrepreneurial competition that was open to all American citizens.

Participants were then given the opportunity to listen to one of the pitches that was given during the competition and were asked to evaluate the pitch. Next, participants were shown a brief profile of an ethnically Chinese entrepreneur. The profile included the entrepreneur's name, a photo of the entrepreneur, and the title of the business idea. The photo was used to control for the inferred ethnicity of the speaker, such that all participants believed that the entrepreneur was an American citizen who was ethnically Chinese (see Appendix A for study materials). I chose the ethnicity Chinese because Asians represent a large and growing population amongst immigrant entrepreneurs in the United States (United States Department of Labor, 2011). Furthermore, Asian-owned firms are most likely to be owned by people of Chinese, Asian Indian, or Vietnamese

background (United States Census Bureau, 2015b). Thus, an examination of possible bias against Chinese-accented speakers seems particularly relevant in this context.

After participants read the profile of the entrepreneur, they then listened to a one-minute audio clip of a business idea about a digital testing solution software (see Appendix B for audio script). Participants were randomly assigned to one of two experimental conditions. In the native accent condition, participants heard the pitch delivered by a speaker with an American accent. In the nonnative accent condition, participants heard the same pitch delivered by a speaker with a Chinese accent. Consistent with past research, which has found that actors instructed to portray accented speech tend to exaggerate accent differences, thereby creating noises in the study design that influence rater evaluations (Callan, Gallois, & Forbes, 1983; Giles & Bourhis, 1976), the audios used in this study were created by recruiting an American born male of Chinese descent and a Chinese male who had lived in the United States for 10 years but spoke English with a marked accent to create the native and nonnative English speeches, respectively. After listening to the audio recordings, participants

answered a follow-up questionnaire that contained our key dependent variables: competence, funding decisions, and accent controllability beliefs<sup>1</sup>.

*Competence.* Participants indicated the extent to which they thought the entrepreneur was competent, intelligent, capable, skillful, and efficient. These adjectives were chosen because they were commonly used in past research to examine competence perceptions (Fiske et al., 2002). All statements used a 6-point Likert-type scale, where 1 = *not at all* and 6 = *extremely*,  $\alpha = .95$ . I averaged participants' scores on these five adjectives to form a composite competence score, with higher scores indicating higher competence ratings.

*Funding decision.* Funding decision was measured using two items, "As the investor, how likely would you be to meet with this entrepreneur? (1 = *very unlikely* and 6 = *very likely*)" and "How willing would you be to 'take a chance' on this entrepreneur? (1 = *very unwilling* and 6 = *very willing*)" ( $r = .80$ ,  $p < .001$ ). I averaged the responses to these two items to form a composite score of funding decision.

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<sup>1</sup> I also included a measure of warmth in Study 1. Participants rated the entrepreneur perceived warmth using five adjectives (i.e., good-natured, friendly, sincere, warm, and kind). All statements used a 6-point Likert-type scale, where 1 = *not at all* and 6 = *extremely*,  $\alpha = .94$ . I did not find a significant speaker accent main effect, a perceiver accent controllability belief main effect, or a speaker accent-perceiver accent controllability interaction effect,  $ps > .20$ .

*Accent controllability beliefs.* Finally, participants filled out a four-item questionnaire that measured their belief about the controllability of accents on a 6-point Likert-type scale (1 = *strongly disagree* and 6 = *strongly agree*). I included this scale at the end of the survey to make sure that participants' evaluations of the entrepreneur would not be affected by their response to this scale. I created the questionnaire based on items used in past research examining attitudes toward stigmatized groups (Crandall, 1994; Haslam et al., 2002; Herek & Capitanio, 1995). The items used were "Non-native English speakers can lose their foreign accents through regular practice (reverse-coded)", "A non-native English speaker can't really control how they sound, like their accents," "A non-native English speaker's accent is something that's hard-wired, and it can't be changed very much," and "A non-native English speaker can't really change the way they speak, like their accents" ( $\alpha = .91$ ). I averaged the responses to these items to form a composite score of accent controllability belief, with higher scores indicating a greater endorsement for the belief that accents cannot be controlled. This scale was normally distributed, with a range of 1 to 6, a mean score of 3.43 and a standard deviation of 1.09.

*Manipulation check.* Finally, participants completed a manipulation check where they indicated whether the entrepreneur had a nonnative accent (yes vs. no).

## 2.2.2 Results

*Manipulation check.* Seven participants failed the manipulation check and so I excluded their responses. Thus, the following analyses included responses from 393 participants.

*Descriptive statistics.* Means, standard deviations, and correlations between Study 1 variables are reported in Table 1.

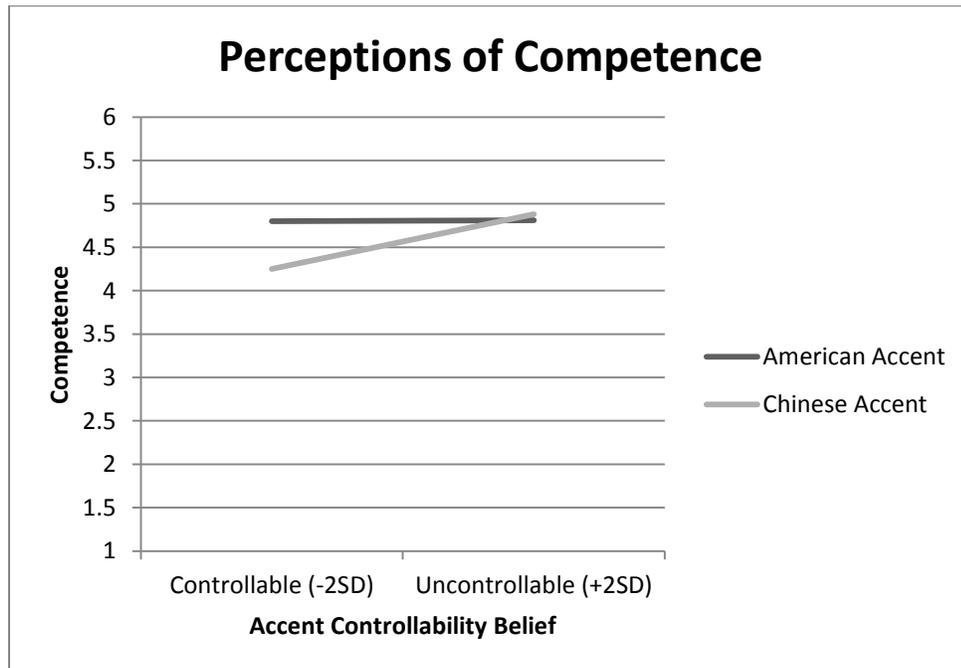
**Table 1: Means, Standard Deviations, and Intercorrelations of Variables, Study 1**

	Variable	<i>M</i>	<i>SD</i>	1	2	3
1.	Competence	4.73	.90	(.95)		
2.	Entrep. Evaluation	4.33	1.06	.67**	(.80)	
3.	Accent beliefs	3.43	1.09	.14*	.17**	(.91)

*Note.* When appropriate, coefficient alpha or composite reliability estimates are listed on the diagonal. The intercorrelations are based on the scale scores of the variables.  $N = 393$ . \*  $p < .01$ , \*\*  $p < .001$ .

*Competence.* I conducted a multiple regressions analysis with accent condition (dummy coded with American accent = 0 and Chinese accent = 1), accent controllability belief (mean-centered), and their interaction term as the independent variables and the competence composite score as the dependent variable. This analysis revealed a significant main effect of accent condition, where Chinese accented speaker received lower competence scores compared to the American accented speaker,  $b = -.24$ ,  $SE = .09$ ,  $t = -2.63$ ,  $p = .009$ . However, this was qualified by a significant two-way interaction,  $b =$

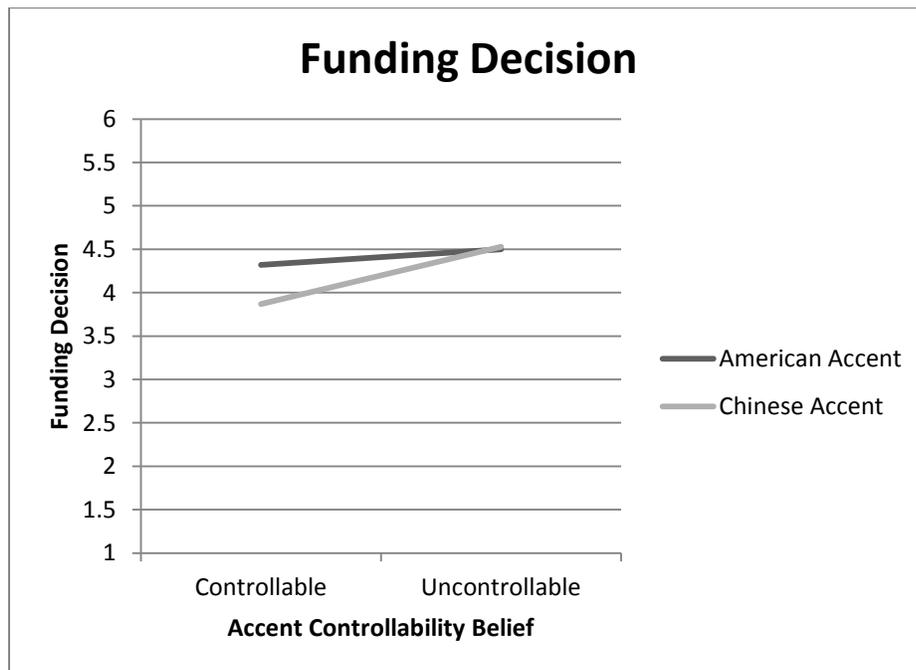
.29,  $SE = .08$ ,  $t = 3.42$ ,  $p = .001$ . Simple slope analyses (Cohen, Cohen, West, & Aiken, 2003) revealed the predicted pattern (see Figure 2). Participants who believed that accents were controllable rated the American accented speaker as more competent than the Chinese accented speaker,  $b = -.55$ ,  $SE = .13$ ,  $t = -4.2$ ,  $p < .001$ . However, participants who believed that accents were not controllable evaluated the American accented and Chinese accented speakers as similarly competent,  $b = .08$ ,  $SE = .13$ ,  $t = .60$ ,  $p = .55$ . Furthermore, within participants who listened to the business pitch by the Chinese accented speaker, accent controllability belief significantly predicted competence evaluations,  $b = .30$ ,  $SE = .06$ ,  $t = 4.77$ ,  $p < .001$ . Participants who believed that accents were controllable were more likely to evaluate the entrepreneur negatively than participants who believed that accents were not controllable. In contrast, within participants who listened to the business pitch given by the American accented speaker, accent controllability belief did not predict competence evaluations,  $b = .01$ ,  $SE = .06$ ,  $t = .18$ ,  $p = .86$ .



**Figure 2: Competence evaluation as a function of speaker accent and participant accent controllability belief, Study 1.**

*Funding decision.* I conducted a multiple regressions analysis with accent condition (dummy coded with American accent = 0 and Chinese accent = 1), accent controllability belief (mean-centered), and their interaction term as the independent variables. This analysis revealed a significant main effect of accent condition, such that participants evaluated the Chinese accented entrepreneur less favorably than the American accented entrepreneur,  $b = -.21$ ,  $SE = .11$ ,  $t = -2.00$ ,  $p = .046$ . As predicted, this was qualified by a significant interaction,  $b = .22$ ,  $SE = .10$ ,  $t = 2.18$ ,  $p = .03$ . Simple slope analyses revealed the predicted pattern (see Figure 3). Participants who scored high on

the belief that accents are controllable were less likely to provide funding to the Chinese accented entrepreneur than to the American accented entrepreneur,  $b = -.45$ ,  $SE = .16$ ,  $t = -2.9$ ,  $p = .004$ . In contrast, participants who believed that accents were not controllable rated the Chinese and the American accented entrepreneurs comparably,  $b = .09$ ,  $SE = .07$ ,  $t = 1.31$ ,  $p = .19$ . Furthermore, in the Chinese accent condition, participants high on the belief that accents could be controlled provided less favorable funding decisions than participants who believed that accents could not be controlled,  $b = .31$ ,  $SE = .07$ ,  $t = 4.45$ ,  $p < .001$ . In contrast, accent controllability belief did not predict funding decision in the American accent condition,  $b = .09$ ,  $SE = .07$ ,  $t = 1.31$ ,  $p = .19$ .



**Figure 3: Funding decision as a function of speaker accent and participant accent controllability belief, Study 1.**

*Mediation analysis.* Next, I examined whether perceptions of competence mediated the interactive effect of speaker accent and perceiver accent beliefs on funding decision. I conducted a moderated mediation analysis using Hayes' (2013) PROCESS macro (Model 7) with 5,000 biased bootstrap samples in SPSS. I entered accent (American accent = 0, Chinese accent = 1) as the independent variable, participants' accent controllability beliefs as the moderator, competence as the mediator, and funding decision as the dependent variable. This analysis revealed that competence significantly mediated the effect of accent controllability beliefs on the evaluation of Chinese accented

entrepreneur [indirect effect = .1978, SE = .04, 95% CI (.1102, .2960)], but not on the evaluation of American accented entrepreneur [indirect effect = .0067, SE = .03, 95% CI (-.0682, .0785)].

### **2.2.3 Discussion**

Results from Study 1 provided support for H1a, H1b, and H4a. Participants evaluated the entrepreneur with a Chinese accent to be less competent than the entrepreneur with an American accent (H1a). However, this accent was moderated by participants' accent beliefs (H4a). To the extent that participants endorsed the belief that accents are controllable, they were more likely to be biased against the Chinese accented entrepreneur, rating him as less competent than the American accented entrepreneur. In contrast, participants who believed that accents were not controllable did not demonstrate this bias. Perceptions of competence, in turn, predicted entrepreneurial funding decisions (H1b).

### **2.3 Study 2**

Study 2 built on Study 1 in several ways. First, instead of measuring accent controllability beliefs as an individual difference, Study 2 experimentally manipulated accent controllability beliefs. By using an experimental design, Study 2 was able to clarify the causal relationship between accent controllability beliefs and evaluation of

nonnative speakers. Second, to enhance the generalizability of the findings from Study 1, Study 2 used a different accent, contrasting participants' evaluation of an American-accented speaker and an Indian-accented speaker. Similarly, to ensure that the effects observed in Study 1 was not tied to the specific business idea, participants in Study 2 listened to an entrepreneurial pitch in a different business context as Study 1.

Study 2 tested for H1a, H1b, H3a, H3b, and H4a and H4b. First, Study 2 aimed to replicate findings from Study 1 by examining whether an experimental manipulation of accent controllability beliefs would moderate the effect of accent on competence ratings, and in turn, funding decision. In addition, Study 2 introduced a measure of assimilation motivation perception, and examined whether this perception is affected by nonnative accents and accent controllability beliefs. Furthermore, I tested whether assimilation motivation would predict entrepreneurial funding decisions.

Study 2 used a 2 (accent controllability belief: controllable vs. not controllable) x 2 (accent: American vs. Indian) between-subjects design. Participants completed a two-part study online. They first read three news articles about languages with the accent controllability belief manipulation embedded. Next, they listened to and evaluated an entrepreneurial idea using a similar paradigm as the one described in Study 1. Following these manipulations, participants rated the entrepreneur's competence, assimilation motivation, and their funding decisions.

## **2.3.1 Method**

### **2.3.1.1 Participants**

I recruited 250 participants from Amazon Mechanical Turk (45% female;  $M_{\text{age}} = 34.03$ ,  $SD_{\text{age}} = 11.65$ ; 79% White, 9% Asian, 5% Black, 5% Hispanic, 2% Other). Sample size was predetermined at 50 observations per cell, for a total of 200 observations. I oversampled to make sure that enough data points would be collected to meet this standard.

### **2.3.1.2 Materials and Procedure**

Participants were told that the purpose of the study was to examine how people make social judgements and were instructed to complete two studies that were described as independent of each other. In the first part of the study, participants were told that the purpose of the study was to examine how people remembered social information. Participants were asked to read three short news articles and then recall the central message of the article afterwards (Appendix C). Embedded in the articles was the accent controllability belief manipulation. In the accent is controllable condition, participants read:

*Can people lose their accents? After conducting extensive field study and archival research, scientists from Princeton University concluded that non-native English*

*speakers can significantly change the way they speak, such as their accents. In other words, foreign accents are very easy to change. Most people have control over their accents. As long as they try hard and practice, foreign speakers will be able to lose their accent. Many non-native English speakers have been living in the United States for a very long time, and they speak English everyday without a foreign accent.*

In the accent is not controllable condition, participants read:

*Can people lose their accents? After conducting extensive field study and archival research, scientists from Princeton University concluded that non-native English speakers cannot significantly change the way they speak, such as their accents. In other words, foreign accents are very hard to change. Most people have very little control over their accents. No matter how hard people try and how much they practice, foreign speakers will always have an accent. Many non-native English speakers have been living in the United States for a very long time, and even though they speak English everyday, they still retain a foreign accent.*

To bolster our cover story, participants subsequently answered recall questions examining their memory of the central message that appeared in each of the three articles. This also served as our manipulation check (Appendix C). Next, participants proceeded to the second part of the study, which followed the same procedure as Study 1. They were first given some basic information about an ethnically Asian Indian male

entrepreneur, which included a photograph of the person, his name, and the idea of his business pitch (Appendix D). I chose an Indian accent in this study because Asian Indians represent a large portion of ethnic minority entrepreneurs in the United States (US Census Bureau, 2015b). Participants listened to the business pitch, which was about a high-end men's wear designer (Appendix E). In the Indian accent condition, participants listened to a pitch that was delivered by an Indian-accented actor. In the American accent condition, participants listened to a pitch that was delivered by an American-accented actor. Following these manipulations, participants answered a follow-up questionnaire that included our dependent variables<sup>2</sup>.

*Competence.* Participants rated the entrepreneur's perceived competence ( $\alpha = .95$ ) using the same items as described in Study 1 on a 7-point scale, where 0 = *not at all* and 6 = *very much so*. I formed a competence composite score by averaging the ratings on the individual adjectives.

*Assimilation motivation.* Participants rated the entrepreneur's assimilation motivation using four items on a 7-point scale, where 0 = *Not at all* and 6 = *Very much so*.

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<sup>2</sup> Study 2 also included a measure of warmth perceptions using the same items as described in Study 1. I found a significant accent main effect,  $F(1, 242) = 8.88, p = .003$ , such that the entrepreneur with an Indian accent was rated as significantly less warm ( $M = 5.10, SD = 1.01$ ) than the entrepreneur with an American accent ( $M = 5.48, SD = .98$ ). The accent belief main effect and the interaction term were not significant,  $ps > .46$ .

The items included “To what extent do you think this entrepreneur has tried hard to fit into American culture?”, “To what extent do you think this entrepreneur is interested in fitting into American culture?”, “To what extent do you think the entrepreneur values American culture?”, and “To what extent do you think this entrepreneur is motivated to learn about American culture?”. I generated these items based on past research that examined the assimilation of immigrants (Waters & Jiménez, 2005). The reliability of the scale was high ( $\alpha = .91$ ) so I averaged the scores of these four items to form a composite motivation to fit in score, with higher scores indicating greater motivation to assimilate.

*Funding decision.* Participants evaluated the entrepreneur using the same two items as described in Study 1 ( $r = .75, p < .001$ ). I formed a composite score by averaging the ratings on the two items.

*Manipulation check.* Finally, participants completed a manipulation check where they indicated whether the entrepreneur had a nonnative accent (yes vs. no).

### **2.3.2 Results**

*Manipulation check.* Four participants failed the manipulation checks and so I excluded their responses. Thus, the following analyses included data points from 246 participants.

*Descriptive statistics.* Means, standard deviations, and correlations between Study 2 variables are reported in Table 2.

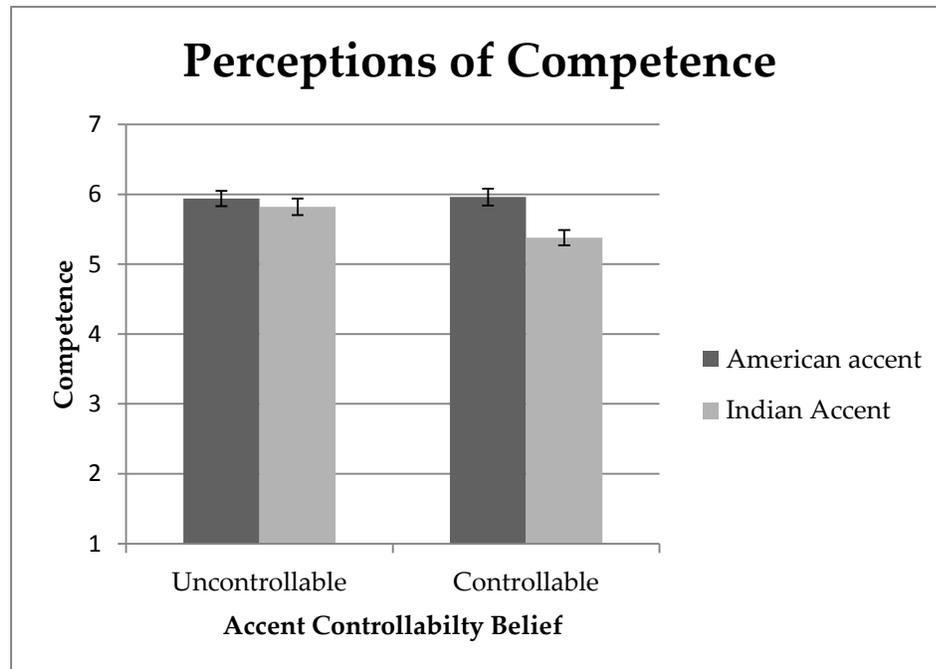
**Table 2: Means, Standard Deviations, and Intercorrelations of Variables, Study 2**

	Variable	<i>M</i>	<i>SD</i>	1	2	3
1.	Competence	5.77	0.93	(.95)		
2.	Assim. Motivation	5.27	1.14	.61**	(.91)	
3.	Entrep. Evaluation	4.25	0.93	.63**	.60**	(.75)

*Note.* When appropriate, coefficient alpha or composite reliability estimates are listed on the diagonal. The intercorrelations are based on the scale scores of the variables.  $N = 246$ . \*\*  $p < .001$ .

*Competence.* Using a 2 (accent controllability belief: controllable vs. not controllable)  $\times$  2 (accent: American vs. Indian) ANOVA, I found a significant accent main effect,  $F(1, 242) = 9.20, p = .003, \eta^2 = .04$ . Supporting H1a, participants rated the native speaking entrepreneur as more competent ( $M = 5.95, SD = .87$ ) than the nonnative speaking entrepreneur ( $M = 5.58, SD = .96$ ). I also found a marginally significant accent controllability belief main effect,  $F(1, 242) = 3.30, p = .07, \eta^2 = .01$ . Participants who read that accents cannot be controlled provided higher competence ratings ( $M = 5.89, SD = .81$ ) than participants who read that accents can be controlled ( $M = 5.65, SD = 1.02$ ). As predicted, these effects were qualified by a significant interaction,  $F(1, 242) = 4.15, p = .04, \eta^2 = .02$ . Analyses of simple effects revealed that, within participants who read that accents could be changed, they rated the Indian accented speaker ( $M = 5.38, SD = 1.05$ ) as significantly less competent than the American accented speaker ( $M = 5.96, SD = .92$ ),  $F(1, 242) = 13.01, p < .001, \eta^2 = .05$ . In contrast, participants who read that accents could not be changed rated the Indian accented speaker ( $M = 5.82, SD = .78$ ) as comparably

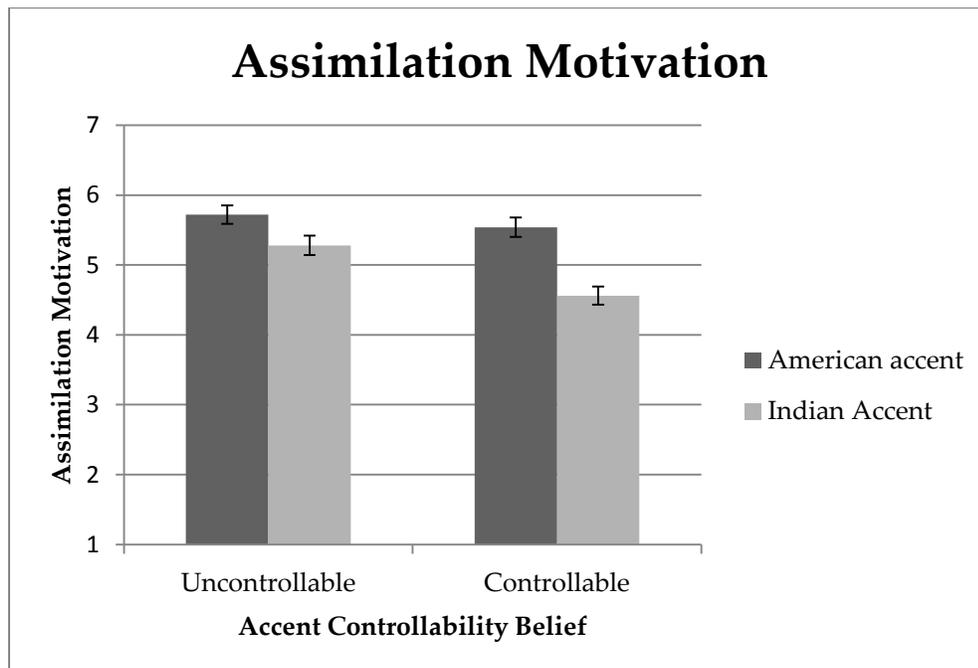
competent as the American accented speaker ( $M = 5.94$ ,  $SD = .83$ ),  $F(1, 242) = .49$ ,  $p = .48$ ,  $\eta^2 = .002$ . Furthermore, participants who read that accents could not be changed rated the Indian accented speaker as significantly more competent than participants who read that accents could be changed,  $F(1, 242) = 7.24$ ,  $p = .008$ ,  $\eta^2 = .03$ . In contrast, accent controllability manipulation did not affect participants' rating of the American accented speaker,  $F(1, 242) = .03$ ,  $p = .88$ ,  $\eta^2 = .00$  (see Figure 4).



**Figure 4: Competence evaluations as a function of speaker accent and accent controllability belief, Study 2.**

*Assimilation motivation.* Using a 2 (accent controllability belief: controllable vs. uncontrollable) x 2 (accent: American accent vs. Indian accent) between-subjects analysis

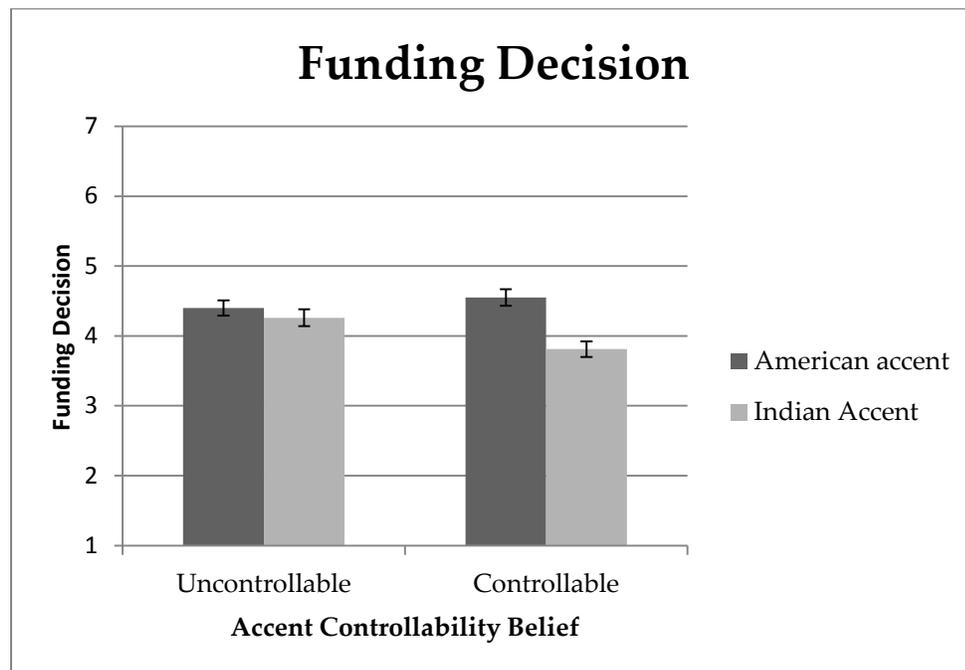
of variance (ANOVA), I found a significant main effect of accent condition,  $F(1, 242) = 27.84, p = .001, \eta^2 = .10$ . Supporting H3a, participants rated the native speaking entrepreneur as more motivated to assimilate ( $M = 5.63, SD = .97$ ) than the nonnative speaking entrepreneur ( $M = 4.89, SD = 1.18$ ). I also found a significant main effect of accent belief,  $F(1, 242) = 11.15, p < .001, \eta^2 = .04$ . Participants who read that accents cannot be controlled provided higher assimilation motivation ratings ( $M = 5.52, SD = .94$ ) than participants who read that accents can be controlled ( $M = 5.02, SD = 1.26$ ). However, these main effects were qualified by a significant interaction,  $F(1, 242) = 4.18, p = .04, \eta^2 = .02$  (see Figure 5). Participants who read that accents could be changed perceived the Indian-accented speaker as less motivated to fit in with American culture ( $M = 4.55, SD = 1.25$ ) than did participants who read that accents could not be changed, ( $M = 5.28, SD = .96$ ),  $F(1, 242) = 14.13, p < .001, \eta^2 = .06$ ; there was no difference on the evaluation of the American-accented speaker across the accent controllability belief conditions,  $F(1, 242) = .86, p = .36, \eta^2 = .004$ .



**Figure 5: Assessment of speaker’s assimilation motivation as a function of speaker accent and accent controllability beliefs, Study 2.**

*Funding decision.* Using a two-way ANOVA with accent controllability belief and speaker accent as the between-subjects factors, I found a significant accent main effect,  $F(1, 242) = 15.14, p < .001, \eta^2 = .06$ , which was further qualified by a significant interaction,  $F(1, 242) = 7.09, p = .008, \eta^2 = .03$ . Planned comparison tests revealed that, within participants who read that accents could be changed, they rated the Indian accented entrepreneur ( $M = 3.81, SD = 1.07$ ) less favorably than the American accented entrepreneur ( $M = 4.55, SD = .87$ ),  $F(1, 242) = 21.73, p < .001, \eta^2 = .08$ ; in contrast, participants who read that accents could not be changed rated the Indian accented

entrepreneur ( $M = 4.26, SD = .74$ ) and the American accented entrepreneur ( $M = 4.40, SD = .80$ ) comparably,  $F(1, 242) = .75, p = .39, \eta^2 = .003$ . Furthermore, participants who read that accents could not be changed rated the Indian accented entrepreneur more favorably than participants who read that accents could be changed,  $F(1, 242) = 7.88, p = .005, \eta^2 = .03$ ; there was no difference in the evaluation of the American accented entrepreneur across the accent controllability belief conditions,  $F(1, 242) = .87, p = .35, \eta^2 = .004$  (see Figure 6).



**Figure 6: Funding decision as a function of speaker accent and accent controllability beliefs, Study 2.**

*Mediation analysis.* Next, I examined whether perceived competence and assimilation motivation mediated the interactive effect of speaker accent and accent controllability beliefs on funding decisions. I tested a moderated mediation model using Hayes (2012)'s PROCESS macro (Model 7) with 5,000 biased bootstrap samples in SPSS. I used accent controllability belief (uncontrollable = 0, controllable = 1) as the independent variable, accent condition (1 = American accent, 2 = Indian accent) as the moderator, competence and assimilation motivations as two parallel mediators, and funding decision as the dependent variable. This analysis revealed that competence significantly mediated the effect of accent controllability belief on evaluations of the Indian accented speaker [indirect effect =  $-.18$ , SE =  $.08$ , 95% CI ( $-.3737$ ,  $-.0518$ )], but not for the American accented speaker [indirect effect =  $-.01$ , SE =  $.07$ , 95% CI ( $-.1242$ ,  $.1426$ )]. Similarly, assimilation motivation was also found to be a significant mediator for the Indian accented entrepreneur [indirect effect =  $-.21$ , SE =  $.07$ , 95% CI ( $-.3723$ ,  $-.0818$ )] but not for the American accented entrepreneur [indirect effect =  $-.05$ , SE =  $.05$ , 95% CI ( $-.1676$ ,  $.0421$ )].

### **2.3.3 Discussion**

Results from Study 2 provided support for H1a, H1b, H3a, H3b, H4a, and H4b. Participants rated the Indian accented entrepreneur as less competent and less motivated to assimilate into American culture. Both of these perceptions, in turn, led to

less favorable funding decisions. Study 2 also found support for the moderating role of accent controllability beliefs. Participants who were led to believe that accents were controllable were more likely to demonstrate a bias against Indian-accented entrepreneur than participants who were led to believe that accents were not controllable.

### ***2.4 Study 3***

Study 3 built on Studies 1-2 and provided a test of the overall model. In addition to examining how accents affected perceptions of competence and assimilation motivation, it also examined how accents affected perceived value congruence and how these perceptions in turn predicted entrepreneurial funding decisions. Furthermore, it tested the moderating role of accent controllability beliefs on perceptions of competence and assimilation motivation.

In addition, Study 3 aimed to address several shortcomings in Studies 1-2. While previous studies provided a photo of the entrepreneur in order to control for the ethnicity of the entrepreneur, it would have been useful to provide additional background information such as time spent in the US to make sure that participants made similar assumptions about the entrepreneur. For example, it is possible that participants might be more forgiving of a speaker with a nonnative accent who has just moved to the United States than a nonnative speaker who has lived in the United State

for many years. Thus, Study 3 included this background information in order to minimize variance as a result of different assumptions people may have about the entrepreneur.

Study 3 also included an additional measure of funding decisions. Whereas Studies 1-2 asked about participants' willingness to "take a chance" on the entrepreneur, Study 3 used a more direct measure of the likelihood that participants would be willing to provide funding to the entrepreneur.

Finally, Study 3 included several additional control variables. First, to alleviate concerns that the negative evaluation of the nonnative speaker was due to a lack of understandability of the speaker and not due to the inferences people made about the speaker based on his accent, Study 3 explicitly controlled for the strength of accent as well as participants' perception of speaker's command of the English language. Secondly, Study 3 included a social desirability scale to control for participants' impression management concerns. Finally, Study 3 included additional demographic questions, such as participants' occupation, employment status, and disposable income to reduce variance due to differences in participants' socioeconomic status and job experience.

## **2.4.1 Method**

### **2.4.1.1 Participants**

I recruited 800 participants from Amazon Mechanical Turk to take part in the study. Sample size was calculated based on the effect size obtained from Study 2 using the software G\*Power (Faul, Erdfelder, Buchner, & Lang, 2009). This analysis revealed that a sample size of 787 was needed to obtain a power of .80. Based on this estimate, I oversampled and recruited 800 participants. Of these, 795 completed the survey (50% female;  $M_{\text{age}} = 37.40$ ,  $SD_{\text{age}} = 12.72$ ; 75% White, 6% Asian, 9% Black, 7% Hispanic, 2% Other).

### **2.4.1.2 Materials and Procedure**

Study 3 utilized a 2 (accent controllability belief: controllable vs. not controllable) x 2 (accent: American vs. Indian) between-subjects design. First, I administered the accent controllability belief manipulation using the same procedures as described in Study 2. Next, participants were asked to evaluate an entrepreneurial pitch. In addition to a photo of the entrepreneur, participants were given background information about the entrepreneur including their length of residence in the US (Appendix F). Following this, participants listened to a business pitch given by an entrepreneur who either had an Indian accent or an American accent, using the same procedure and pitch described in Study 2. Afterwards, participants completed a follow-up questionnaire that contained

key dependent variables as well as control variables. The order in which measures of competence, assimilation motivation, and value congruence appeared was completely randomized.

*Competence.* Participants rated the entrepreneur's perceived competence ( $\alpha = .95$ ) using the same items as described in Study 2 on a 7-point scale, where 0 = *not at all* and 6 = *very much so*. I formed a competence composite score by averaging the ratings on the individual adjectives.

*Assimilation motivation.* Participants rated the entrepreneur's assimilation motivation using the same four items as described in Study 2 on a 7-point scale, where 0 = *Not at all* and 6 = *Very much so*. The reliability of the scale was high ( $\alpha = .92$ ) so I averaged the scores of these four items to form a composite assimilation motivation score, with higher scores indicating greater assimilation motivation.

*Value congruence.* Value congruence was measured using ten items. I created this scale based on the Schwartz Social Value Survey (Schwartz, 1992). This survey assessed people's preferences for ten motivational values that all humans are deemed to be responsive to. The ten values included power, achievement, hedonism, stimulation, self-direction, universalism, benevolence, tradition, conformity, and security. The original survey was designed to examine how people prioritized these values and whether there were any systematic trade-offs between values; it did not measure value congruence

between individuals. Thus, I modified the original scale to capture this construct. Participants were given the definition of each motivational value as described in Schwartz et al., (2001). For example, for the value of power, participants read, "Power: refers to social status and prestige, control or dominance over people and resources." Next, they were asked to answer the question, "To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of X (i.e., power)?" for each of the ten values (see Appendix G for the full list of items). The questions were anchored on a 7-point scale, with 0 = *Not at all* and 6 = *Very much so*. The reliability of the scale was high ( $\alpha = .84$ ) so I averaged the scores of these ten items to form a composite value congruence score, with higher scores indicating greater value congruence.

*Funding decision.* Participants evaluated the entrepreneur using the same two items as described in Studies 1-2. I also included an additional measure: "How likely would you be to recommend your firm, Bright Capital Partners, to offer funding to this entrepreneur?" The reliability of the scale was high ( $\alpha = .94$ ) so I averaged the scores of these three items to form a composite funding decision score, with higher scores indicating more favorable funding decision.

*Manipulation checks.* Participants completed a manipulation check where they indicated whether the entrepreneur had a nonnative American accent (yes vs. no).

Participants also completed a manipulation check for accent controllability when they were given the accent controllability manipulation (detailed procedures were described in Study 2; see also Appendix C).

*Command of English.* Participants were asked to indicate the extent to which they agreed with the statement that the entrepreneur has a good command of the English language on a 6-point scale, where 1 = *strongly agree* and 6 = *strongly disagree*.

*Accent strength.* Participants were asked to indicate whether the entrepreneur had a slight, moderate, or heavy accent. This question was administered only in the nonnative accent speech condition.

*Social desirability.* Participants completed the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982) at the end of the study (Appendix H). The scale contained 13 items that measured respondents' desire to impression manage on surveys that contain self-report measures. A sample item included "No matter who I'm talking to, I'm always a good listener." Participants were asked to indicate "true" or "false" for each of the statement. A total score is calculated based on these 13 items, with higher scores indicating higher levels of social desirability.

*Demographic information.* Finally, participants completed a demographic questionnaire, which included questions about the participants' gender, age, ethnicity,

education level, employment status, household income, occupation type, and language status (Appendix I).

## 2.4.2 Results

*Manipulation check.* 100 participants (13%) failed the accent manipulation check and 58 (7%) failed the accent controllability manipulation check. An additional two people reported that the audio recording containing the entrepreneurial pitch did not load during the survey. I excluded the responses from these participants; thus, the following analyses included responses from 635 (80%) participants<sup>3</sup>.

*Descriptive statistics.* Means, standard deviations, and correlations between Study 3 key variables are reported in Table 3.

**Table 3: Means, Standard Deviations, and Intercorrelations of Variables, Study 3**

	Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1.	Competence	4.89	.81	(.95)			
2.	Value Congruence	4.59	.85	.47**	(.84)		
3.	Assim. Motivation	5.55	1.14	.57**	.36**	(.92)	
4.	Funding Decision	4.30	1.06	.63**	.42**	.52**	(.94)

*Note.* When appropriate, coefficient alpha or composite reliability estimates are listed on the diagonal. The intercorrelations are based on the scale scores of the variables.  $N = 635$ . \*\*  $p < .001$ .

*Control variables.* Analyses using participants' social desirability scores, perceptions of speaker's accent strength and command of the English language, as well

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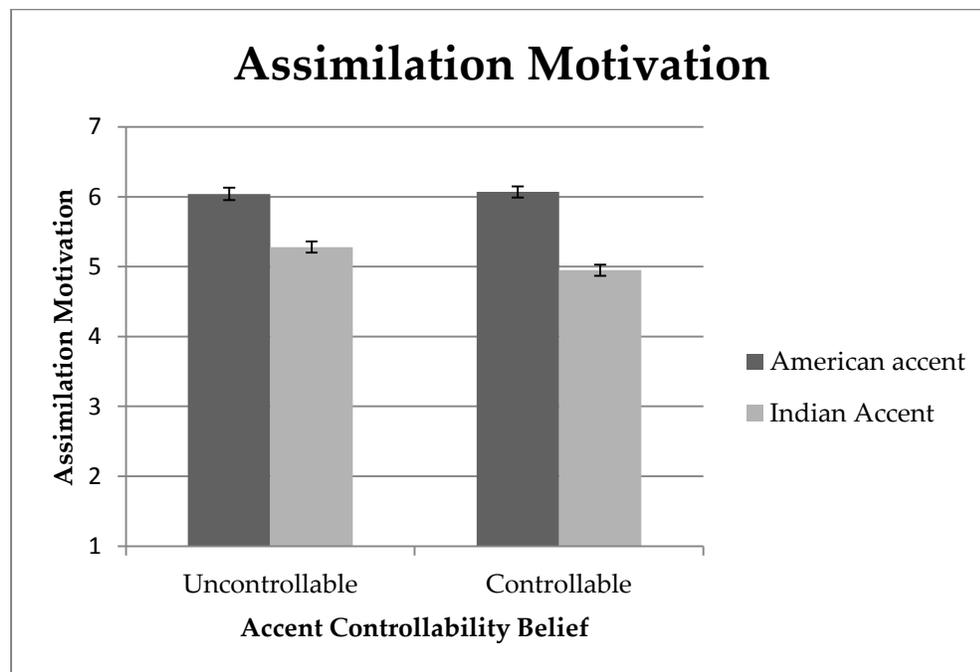
<sup>3</sup> Analyses using the entire sample did not change the results substantively.

as demographic information as covariates did not substantively change the results on the key dependent variables; thus, the following results are based on analyses without including these control variables for the sake of consistency with reporting standards of Studies 1-2.

*Competence.* Using a 2 (accent controllability belief: controllable vs. not controllable)  $\times$  2 (accent: American vs. Indian) ANOVA, I found a significant accent main effect,  $F(1, 631) = 43.82, p < .001, \eta^2 = .07$ . As predicted, participants rated the entrepreneur with an American accent as significantly more competent ( $M = 5.11, SD = .68$ ) than the entrepreneur with an Indian accent ( $M = 4.70, SD = .86$ ). Thus, Hypothesis H1a was supported. However, this analysis did not find an accent controllability belief main effect,  $F(1, 631) = .25, p = .62$ , or a significant interaction,  $F(1, 631) = .48, p = .49$ . Thus, Hypothesis 4a was not supported.

*Assimilation motivation.* Using a 2 (accent controllability belief: controllable vs. uncontrollable)  $\times$  2 (accent: American accent vs. Indian accent) between-subjects analysis of variance (ANOVA), I found a significant main effect of accent condition,  $F(1, 631) = 127.44, p < .001, \eta^2 = .17$ . As predicted, participants rated the entrepreneur with an American accent as significantly more motivated to assimilate into American culture ( $M = 6.06, SD = .91$ ) than the entrepreneur with an Indian accent ( $M = 5.13, SD = 1.14$ ). I also found a marginally significant accent controllability belief main effect,  $F(1, 631) = 3.52, p$

= .06,  $\eta^2 = .006$ . However, these main effects were qualified by a significant interaction,  $F(1, 631) = 4.68, p = .03, \eta^2 = .01$  (see Figure 7). Participants who read that accents could be controlled ( $M = 4.95, SD = 1.20$ ) perceived the Indian-accented speaker to be less motivated to assimilate into American culture than did participants who read that accents could not be controlled ( $M = 5.28, SD = 1.07$ ),  $F(1, 631) = 9.10, p = .003, \eta^2 = .01$ ; there was no difference in the evaluation of the American-accented speaker across the accent controllability belief conditions,  $F(1, 631) = .04, p = .85, \eta^2 = .00$ . Thus, Hypothesis 3a and H4b were supported.



**Figure 7: Assessment of speaker's assimilation motivation as a function of speaker accent and accent controllability beliefs, Study 3.**

*Value congruence.* Using a one-way ANOVA with accent (American accent vs. Indian) as the between-subjects factor, I found a significant effect of accent condition on participants' perceived value congruence,  $F(1, 633) = 10.16, p = .002, \eta^2 = .02$ . Participants perceived significantly less value congruence with the Indian-accented entrepreneur ( $M = 4.49, SD = .85$ ) than with the American-accented entrepreneur ( $M = 4.71, SD = .82$ ). Thus, Hypothesis H2a was supported.

*Funding decision.* Using a two-way ANOVA with accent controllability belief and speaker accent as the between-subjects factors, I found a significant accent main effect,  $F(1, 631) = 55.59, p < .001, \eta^2 = .08$ . Participants made more favorable funding decisions when the entrepreneur had an American accent ( $M = 4.63, SD = .97$ ) than when the entrepreneur had an Indian accent ( $M = 4.03, SD = 1.06$ ). Neither the accent controllability belief main effect,  $F(1, 631) = 1.89, p = .17$ , nor the interaction term,  $F(1, 631) = .12, p = .73$ , were significant.

*Mediation analysis.* I tested a moderated mediation model using Hayes (2012)'s PROCESS macro (Model 7) with 5,000 biased bootstrap samples in SPSS. I used accent controllability belief (uncontrollable = 0, controllable = 1) as the independent variable, accent condition (1 = American accent, 2 = Indian accent) as the moderator, perceptions of competence and assimilation motivation as parallel mediators, and funding decisions as the dependent variable. This analysis revealed that assimilation motivation

significantly mediated the effect of accent on entrepreneurial funding decisions for the Indian accented speaker [indirect effect =  $-.08$ , SE =  $.03$ , 95% CI ( $.0230$ ,  $.1458$ )] but not the American accented speaker [indirect effect =  $-.01$ , SE =  $.03$ , 95% CI ( $-.0568$ ,  $.0436$ )].

Competence did not significantly mediate the effect of accent on entrepreneurial funding decisions for neither the Indian accented entrepreneur [indirect effect =  $.05$ , SE =  $.06$ , 95% CI ( $-.0723$ ,  $.1749$ )] nor the American accented entrepreneur [indirect effect =  $-.01$ , SE =  $.05$ , 95% CI ( $-.1153$ ,  $.0926$ )].

Because accent controllability beliefs did not interact with accent conditions to affect competence and funding decisions, I also ran a mediation model using Hayes (2012)'s PROCESS macro (Model 4) with 5,000 biased bootstrap samples in SPSS. I used accent condition (1 = American accent, 2 = Indian accent) as the independent variable, perceptions of competence, value congruence, and assimilation motivation as parallel mediators, and funding decisions as the dependent variable. This analysis revealed that competence, value congruence, and assimilation motivation all significantly mediated the effect of accent on entrepreneurial funding decisions [indirect effect of competence =  $-.23$ , SE =  $.04$ , 95% CI ( $-.3224$ ,  $-.1638$ ); indirect effect of value congruence =  $-.04$ , SE =  $.02$ , 95% CI ( $-.0735$ ,  $-.0126$ ); indirect effect of assimilation motivation =  $-.17$ , SE =  $.04$ , 95% CI ( $-.2541$ ,  $-.0989$ )]. Thus, H1b, H2b, and H3b were supported.

### 2.4.3 Discussion

Results from Study 3 found that nonnative accents negatively predicted perceptions of competence, value congruence, and assimilation motivation, and these perceptions in turn predicted entrepreneurial funding decisions. Study 3 also tested for the moderating role of accent controllability beliefs on perceptions of competence and assimilation motivation. While accent controllability beliefs did moderate the effect of accent on assimilation motivation and thus replicating prior findings in Studies 1-2, it did not moderate the effect of accent on competence perceptions. This result was somewhat surprising. One reason may be that the previous studies, particularly Study 2, were underpowered, and subsequently inflated Type I error and hampered replication efforts (Overall, 1969; Cohen, 1992a; Gervais et al., 2015; Simmons, Nelson, & Simonsohn, 2011). Another reason may be that in Study 3, I included additional information about the speakers' background information, specifically informing participants that the entrepreneur has lived in the United States for ten years. It is possible that this piece of information led participants to make less favorable competence evaluations about the speaker: ten years may be perceived as a long time for the entrepreneur to learn a new language; subsequently, participants may be less forgiving of the entrepreneur who retained an accent. Finally, there may be additional moderators that were not captured in the model.

### **3. General Discussion**

In this dissertation, I provided an integrative model examining the effects of nonnative accents on the evaluation of speakers in entrepreneurial funding decisions. This model organizes past explanations for accent-based bias into a coherent framework by suggesting that accents elicit inferences about the speaker that have implications at the personal, relational, and group level. The present research also complements the existing emphasis on main effects of accents by examining the moderating role of accent controllability beliefs on accent-based bias. I empirically examined the theoretical model proposed in this dissertation across three studies, and results obtained from these studies generally supported my hypotheses.

#### ***3.1 Theoretical Contribution***

This dissertation makes a number of contributions to organizational research. First, it expands our current understanding of accent-based bias by explicating the processes through which nonnative accents affect interpersonal perceptions. Specifically, the model presented in this dissertation examines how perceiver characteristics interact with speaker characteristics to affect evaluation of accented speakers, which has not been done so in previous research on accent-based bias.

More broadly, the present research contributes to organizational diversity research by highlighting accent as an important diversity variable that arises as a result

of an increasingly multilingual workplace. Compared to other social markers such as race and gender, accents can have an immediate impact on communication, which adds an additional layer of complexity that has not been explored extensively in the diversity literature. The framework outlined in this dissertation can thus provide a useful roadmap for management scholars who are interested in understanding the role of accents in diversity research. Furthermore, while past research has extensively examined the effects of visual cues such as race and gender on interpersonal dynamics, relatively little has focused on the effects of auditory cues such as accents on important organizational outcomes. As illustrated in the present work, people are perceptible to accents and use them to make a complex set of assumptions about speakers. Thus, studying the effects of accent on interpersonal dynamics can help expand the ways that management scholars conceptualize diversity in organizations.

### ***3.2 Managerial Implications***

Currently, the most common strategy used by companies to help nonnative English speaking employees become better integrated into the organization is to enroll them in accent reduction programs (Gorman, 2007). However, these programs can be problematic because they are based on the assumption that accents can be changed. As discussed in this research, this assumption can potentially lead to negative consequences for nonnative speakers. Even worse, putting an emphasis on accent reduction sends the

signal that an accent is a negative trait that needs to be treated and corrected (Montgomery, 1999). Thus, accent reduction programs may be inadvertently fueling the bias against nonnative English speakers.

Instead of investing in accent reduction programs, companies might be better off by educating their native English speaking employees about the nature of accents. For example, companies can educate their recruiting managers that nonnative accents are difficult to control, which can potentially help to reduce accent-based bias in selection processes. Given that the US workforce is represented by an increasing number of foreign born workers, reducing accent-based bias can have profound implications in the current war for talent. These recommendations echo the sentiments of some researchers on the social effects of accents, who have argued that instead of attempting to reduce or eradicate accents, it may be more effective and more efficient to change listener's attitudes, beliefs, and perspectives (Weyant, 2007).

Similarly, it may be beneficial for companies to focus on policies that accept and accommodate nonnative speakers. For example, to facilitate socialization and workplace adaptation processes, organizational newcomers can receive job orientations in their native language when possible. Furthermore, nonnative English speaking new hires can be paired up with mentors that speak the same language. As translation and multilingual software becomes increasingly popular and publically available, companies

can also create multilingual versions of their notices and announcement at relatively low cost. By embracing language diversity as an asset, companies can potentially help change people's mindsets and beliefs about accents.

### ***3.3 Limitations***

One limitation of the current research is that I did not directly test my hypotheses with a sample of investors or individuals who have had experiences investing. Thus, it would be useful to increase the generalizability of this research by examining whether the results found in this research can be replicated using these samples. Another limitation is that the current research only examined people's evaluations of speakers with Indian and Chinese accents. This may have limited the generalizability of the findings to certain cultural groups. However, previous research has shown that there are distinct stereotypes for Chinese and Indians (Lee & Fiske, 2006). According to the stereotype content model (Fiske et al., 2002), Chinese/East Asians are perceived as high on competence but low on warmth whereas Indians are perceived as high on both competence and warmth. Thus, Chinese and Indians have different stereotypes associated with their cultural groups that differ along the two fundamental dimensions of social perception (Fiske et al., 2002), suggesting that these effects may be generalized across different cultural groups. Nevertheless, future research should test

the robustness of these results and examine whether accent controllability beliefs affect evaluation of speakers from other cultural and ethnic groups.

Finally, I only examined people's evaluations of nonnative speakers within a U.S. context. It would also be important to study the effects of nonnative accents in different cultural contexts. According to the United Nations (2015), the number of international migrants—persons living in a country other than where they were born—reached 244 million in 2015, an increase of 41 percent compared to 2000. Therefore, it is important to also examine the extent of accent-based bias in other countries. Given that bias against immigrants have been documented in other countries (Esses, Wagner, Wolf, Preiser, & Wilbur, 2006; Kessler & Freeman, 2005; Quillian, 1995), it is possible that the effects found in this paper may be generalized to other cultural settings.

### ***3.4 Directions for Future Research***

#### **3.4.1 Towards a More Generalized Model of the Evaluations of Speakers with Nonnative Accents**

In future research, I would like to further develop the theoretical model described in this dissertation by a) better describing the micro-mediating chains that drive the mechanisms as described in the existing model, b) capturing a wider range and types of outcomes related to accent-based bias in organizational settings. I discuss these ideas below.

### **3.4.1.1 Elaborating on the Independent Variable**

In the original model, I conceptualized speaker accent as a categorical variable and examined how perceivers reacted to speakers who either had a native or a nonnative accent. Future research can build on this and examine how different nonnative accents can potentially lead to different outcomes. Because accents are closely tied to the cultural and socioeconomic backgrounds of the speaker, accents can activate specific stereotypes associated with the speakers' cultural groups. These stereotypes can in turn, elicit different reactions about the speaker depending on the context. For example, a speaker with a German accent may be perceived to be particularly punctual whereas a speaker with a Chinese accent may be perceived to be particularly good at technical tasks. Similarly, the status of a nonnative accent may not only be affected by the socioeconomic status of the country that the accent is associated with per se, but also the accent's status in a specific organizational context. For example, someone with a French accent working in a French multinational corporation located in the United States may be afforded high status than someone with an American accent working in the same company. Therefore, future research can benefit by comparing accents in the specific contexts in which they are studied.

### 3.4.1.2 Elaborating on Mediating Mechanisms

The more generalized model can also further tease apart the processes that drive the evaluation of nonnative speakers at the personal, relational, and group level. For example, the original model examined competence as a mediating variable at the personal level. Future research can further break down the global assessment of competence into more specific dimensions of competence, such as communication competence and political skills. At the relational level, value congruence may also be broken down into more micro processes. For example, past research has suggested that person-organization value congruence effects are driven by similarity in communication patterns, predictability, interpersonal attraction, and trust (Edwards & Cable, 2009). Future research can explore whether accents activate similar psychological processes. Finally, existing model has examined speakers' motivation to assimilate into American culture at the group level; however, future research can further contextualize the meaning of assimilation motivation. For example, assimilation motivation can be operationalized as motivation to assimilate into one's organization. To the extent that the organization considers speaking "standard" American English as an important aspect of the organization—for example, organizations that have accent reduction programs or English-only policies—perceivers may be more likely to use accents to infer speakers' motivation to identify with the organization, such that nonnative speakers are

particularly seen as not motivated to identify with the organizations' core values. These perceptions, in turn, can have negative consequences for hiring and promotion decisions.

### **3.4.1.3 Identifying Additional Moderators**

Another direction for future research is to examine additional individual difference variables and organizational contexts that can influence the evaluations of nonnative speakers. The fact that accent controllability beliefs did not consistently moderate the effect of accent on competence perceptions in the studies presented in this dissertation suggests that there might be additional moderators at work. At an individual level, perceivers' diversity beliefs (Homan, van Knippenberg, Van Kleef, & De Dreu, 2007; Hornsey & Hogg, 2000; Nkomo & Hoobler, 2014) can play a role in shaping people's attitudes. It is possible that people who value a diverse workforce are more accepting of accented speakers than those who do not place a high value on workforce diversity. Similarly, at the organizational level, company's diversity climate in general and language-related policies specifically (Kossek & Zonia, 1993; McKay et al., 2007) can play a role in how nonnative speakers are treated. For example, companies that provide multilingual support might experience less language-based mistreatments than companies that enforce an English-only rule.

It would also be interesting to examine the moderating effects of time. The present research, as well as past research, has primarily examined the effects of accents on first impressions and not continuous interactions. Time has been shown to play an important role in determining the effects of demographic diversity in organizations, such that the effects of demographic diversity characteristics such as race and gender are most intensified during initial interactions and tend to attenuate over time (Harrison, Price, & Bell, 1998). Similarly, time can affect how people evaluate nonnative speakers. On the one hand, it may be the case that accent-based biases are less pronounced over time. On the other hand, the initial negative evaluations may lead to the creation of faultlines along linguistic groups, which could deepen intergroup conflict. Thus, future research should fill this gap by examining whether accent-bias persist as organizational members have more opportunities to get to know each other over time.

#### **3.4.1.4 Exploring Additional Outcome Variables**

The present research examined the effects of nonnative accents in an entrepreneurial context. However, future research should examine the effects of accent in other organizational contexts. For example, examining speakers with accents at executive levels can be particularly fruitful, as past research has primarily focused on the effects of accent on low status or entry-level positions. This may be particularly important to the extent that nonnative speakers manage to crack the glass ceiling and

become successful in executive level positions. Would a company with a native English speaking CEO be evaluated more favorably than a company with a nonnative English speaking CEO? Or, to the extent that the face of a company — such as its HR recruiter — has an accent, how would this affect the type of job applicants that the firm attracts? As an increasing number of ethnic minorities crack the glass ceiling and occupy leadership positions in companies, it would be important to examine these questions.

Another important place to examine the effects of accents is in higher education. To the extent that nonnative speakers are evaluated negatively, this can have important implications for the experiences of non-US students in the classroom. This may be particularly problematic in business schools, as many of the classes are highly interactive in nature and student grades heavily based on active class participation, where verbal communication skills are critical. As business schools in the US become increasingly global, it would be important to examine the effects of accent on the learning experiences for both nonnative and native English speaking students.

In sum, future research can build on the model tested in this dissertation and provide a more nuanced examination of the independent variable and the mediating mechanisms, as well as exploring additional moderators and individual-level, group-level, and organizational-level outcomes.

### 3.4.2 Exploring Positive Consequences of Having a Nonnative Accents

Thus far, research on the effects of accent has painted quite a gloomy picture for nonnative speakers. While it is critical to seek for ways to reduce accent-based bias and discrimination, there might also be cases where having an accent can confer an advantage to nonnative speakers. A nonnative accent signals that the speaker has been exposed to different cultures. Given the increasing demand for bilingual employees, speakers with an accent— who are typically bilinguals by default—have the language skills that employers are looking for. Another possible advantage for nonnative speaking is that, because accents signal foreignness, perceivers might be more forgiving of nonnative speakers when they behave in ways that are not deemed to be culturally appropriate (Molinsky & Perunovic, 2008). Consequently, nonnative speakers might be granted with more degrees of freedom and less bounded by the prevailing social or cultural norms. This can be advantageous in certain situations, such as negotiations. For example, it might be less offensive for nonnative speakers to negotiate aggressively and make extreme offers than for native speakers. Thus, identifying the conditions under which speaking with an accent confers an advantage can be another fruitful pursuit in future research.

### **3.4.3 Exploring Speakers' Perspectives**

Finally, the majority of extant research has examined language issues from the perspective of the perceiver. However, it would also be important to take the perspective of nonnative speakers and examine how language affects their experiences at work. For example, how does language fluency affect nonnative speakers' motivation, interpersonal relationships, and network structure at work? Furthermore, given that nonnative speakers are by default bilingual, how do they use language to shape and construct their social identities at work? There remain many unanswered questions in this area of research.

### ***3.5 Conclusion***

As a result of globalization and rapid technological advances, people increasingly have more opportunities to interact with others from different cultural and language backgrounds. This is an exciting time for businesses as companies have access to a greater pool of diverse talents across the globe. In order to best leverage the talent that is available to companies, it is paramount for organizations to find strategies that help them to effectively manage diversity and minimize conflicts and biases that can arise as a result of a diverse workforce. This dissertation highlights the role of accent in an increasingly multilingual workplace and explicates the psychological processes that underlie evaluations of nonnative speakers. By examining the micro foundations of how

language affects interpersonal dynamics in the workplace, the ideas explored in this dissertation set the stage for future research in an increasingly multilingual world.

## **Appendix A: Study Stimuli for Study 1**

In this part of the study, you will be making a decision about entrepreneurship pitches.

Recently, a team of investors served as the judges in an Entrepreneurial Pitch Competition. This competition is open to American citizens who would like to get funding for their business ideas.

During the pitch competition, the team of investors watched 10 entrepreneurs give a presentation on their early-stage start-up.

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You will now have the opportunity to listen to an excerpt of one of the pitches that was given at the competition.

Please take your time to listen to the full audio clip; you will need the information from the audio clip to make judgments and answer questions on the following pages.



**Min, CloudBook**

## **Appendix B: Script of Business Pitch Used in Study 1**

CloudBook makes administering exams at universities and graduate programs secure, intelligent, and easy. With our technology, students no longer complete exams on paper, but do so on a tablet computer. The CloudBook testing solution prevents cheating and keeps exams secure, provides teachers with instant analytics regarding student performance and finally makes grading reliable and easy. CloudBook is testing for the modern era. How we make money is simple: Schools pay a ten dollar monthly subscription per student, and CloudBook does the rest. We provide tablet computers, testing software, and handle all maintenance and upgrades. Schools are instantly empowered to administer state-of-the-art exams. With over five thousand degree-granting institutions in the US, and over 20.3 million students enrolled, the total market opportunity for CloudBook is greater than 2.3 billion dollars. In closing, CloudBook makes testing secure, intelligent, and easy. It's a product needed by every university and graduate program in the country, and we are positioned to disrupt a 2.3 billion dollar market. It's testing for the modern era.

## Appendix C: Accent Controllability Belief Manipulation Used In Study 2

### Study Part 1 Instructions

In this section of the survey, we are interested in how people remember information. On the next pages, you will see three short news articles. Please read them carefully as you will be asked some questions about them afterwards.

### News Article No. 1

Does the language we speak determine how healthy and rich we will be? New research by professors from Yale University suggest so. The structure of languages affects our judgments and decisions about the future and this might have dramatic long-term consequences.

These recent findings suggest that an unlikely factor, language, strongly affects our future-oriented behavior. Some languages strongly distinguish the present and the future. Other languages only weakly distinguish the present and the future. This research suggests that people who speak languages that weakly distinguish the present and the future are better prepared for the future. They accumulate more wealth and they are better able to maintain their health. The way these people conceptualize the future is similar to the way they conceptualize the present. As a result, the future does not feel very distant and it is easier for them to act in accordance with their future interests.

Question: What was the main message in the article you just read?

1. Some languages have more complex structures than others.
2. Some languages strongly distinguish the present and the future, whereas others do not.
3. People who speak certain languages are more health than others.

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News Article No. 2 (Accent manipulation: not controllable)

With a few exceptions, the majority of people who learn English as a second language usually speak English with a foreign accent.

Can people lose their accents? After conducting extensive field study and archival research, scientists from Princeton University concluded that non-native English speakers cannot significantly change the way they speak, such as their accents. In other words, foreign accents are very hard to change. Most people have very little control over their accents. No matter how hard people try and how much they practice, foreign speakers will always have an accent. Many non-native English speakers have been living in the United States for a very long time, and even though they speak English everyday, they still retain a foreign accent.

News Article No. 2 (Accent manipulation: controllable)

With a few exceptions, the majority of people who learn English as a second language usually speak English with a foreign accent.

Can people lose their accents? After conducting extensive field study and archival research, scientists from Princeton University concluded that non-native English speakers can significantly change the way they speak, such as their accents. In other words, foreign accents are very easy to change. Most people have control over their accents. As long as they try hard and practice, foreign speakers will be able to lose their accent. Many non-native English speakers have been living in the United States for a very long time, and they speak English everyday without a foreign accent.

Question: What was the main message of the article you just read?

1. People can easily change the way they speak, like their accents.
2. People cannot easily change the way they speak, like their accents.
3. People can easily learn a second language, like English.

--page break--

News Article No. 3

Although number words (like "one", "two", "three) and counting are a fixture of life in most cultures from the time we are old enough to play hide-and-go-seek, some languages have only a handful of number words. Recently, researchers from MIT demonstrated that Pirahã, a language spoken by a small Amazonian community, has no number words at all.

The research team asked Pirahã speakers to count different numbers of batteries, nuts and other common objects. Rather than having a word consistently used to describe "one X" a different word for "two Xs" and yet another word for "three Xs," the Pirahã used hói to describe a small number of objects, hoí to describe a slightly larger number, and baágiso for an even larger number. Basically, these words mean "around one," "some" and "many."

Question: What was the main message in the article you just read?

1. Pirahã speakers are good at maths.
2. Pirahã speakers do not have words for numbers.
3. Counting numbers is difficult.

## **Appendix D: Study Stimuli for Study 2**

In this part of the study, you will be making a decision about entrepreneurship pitches.

Recently, a team of investors served as the judges in an Entrepreneurial Pitch Competition. This competition is open to American citizens who would like to get funding for their business ideas.

During the pitch competition, the team of investors watched 10 entrepreneurs give a presentation on their early-stage start-up.

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You will now have the opportunity to listen to an excerpt of one of the pitches that was given at the competition.

Please take your time to listen to the full audio clip; you will need the information from the audio clip to make judgments and answer questions on the following pages.



**Sudhir; Founder of Seeking Alpha Men's Wear**

## **Appendix E: Script of Business Pitch Used in Study 2**

Seeking Alpha is a high tech men's wear designer manufacture that specializes in high end dress shirts and suits for business professionals. Despite developments in fabric technologies that enabled the production of quality, high tech cottons and wools that automatically adjust to maintain your optimal body temperature, keeping you warmer when it's cold outside, and cooler and dry when it's hot, business professionals continue to suffer from odors, stains and discomfort from wearing suits made from traditional materials in the workplace. This is a missing need in the 5.4 billion dollar suit market. Seeking Alpha will combine high tech material science with sleek Armani design and style to deliver quality designer performance formal wear to business professionals around the world.

## Appendix F: Study Stimuli for Study 3

In this part of the study, you will be making a decision about entrepreneurship pitches.

Recently, a team of investors served as the judges in an Entrepreneurial Pitch Competition. This competition is open to American citizens who would like to get funding for their business ideas.

During the pitch competition, the team of investors watched 10 entrepreneurs give a presentation on their early-stage start-up.

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You will now have the opportunity to listen to an excerpt of one of the pitches that was given at the competition.

Please take your time to listen to the full audio clip; you will need the information from the audio clip to make judgments and answer questions on the following pages.

	<p><b><u>Entrepreneur Bio</u></b></p> <p><b>Name:</b> Manu Sanghavi</p> <p><b>Age:</b> 35</p> <p><b>Business Idea:</b> Seeking Alpha Men's Wear</p> <p><b>Facts about Me:</b> Manu moved to the United States about ten years ago from India. He enjoys traveling, reading, and spending time with my family.</p>
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## Appendix G: Value Congruence Measures, Study 3

As people, we value many things in our lives. People place greater importance on certain values over others, and people may have different preferences about what they consider to be more or less important values. For example, achievement can be an important value for one person but not another.

**In this section, we would like to ask you some questions about how you think your values compare to the values of the entrepreneur whose business pitch you just heard.**

On the following pages, you will see a specific value and a definition of the value. For example, you will see:

*Achievement: refers to personal success through demonstrating competence according to social standards.*

You will then be asked the question:

*To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of achievement?*

There are no right and wrong answers, so please answer each question as you see fit. Do not spend too much time on the questions, it is best to follow your first impression.

--page break--

1. POWER: Social status and prestige, control or dominance over people and resources. To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of power?

2. Achievement: Personal success through demonstrating competence according to social standards. To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of achievement?

3. Hedonism: Pleasure and sensuous gratification for oneself.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of hedonism?

4. Stimulation: Excitement, novelty, and challenges in life.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of stimulation?

5. Self-direction: Independent thought and action-choosing, creating, exploring.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of self-direction?

6. Universalism: Understanding, appreciation, tolerance and protection for the welfare of all people and for nature.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of universalism?

7. Benevolence: Preservation and enhancement of the welfare of people with whom one is in frequent personal contact.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of benevolence?

8. Tradition: Respect, commitment and acceptance of the customs and ideas that traditional culture or religion provide the self.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of tradition?

9. Conformity: Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of conformity?

10. Security: Safety, harmony and stability of society, of relationships, and of self.

To what extent do you think that you and this entrepreneur place a similar amount of importance on the value of security?

## Appendix H: Marlow-Crowne Social Desirability Scale, Study 3

Directions: Listed below are a number of statements concerning personal attitudes and traits. Read each statement and decide whether or not it pertains to you personally. For each statement, please indicate T (true) or F (false).

1. It is sometimes hard for me to go on with my work if I am not encouraged.
2. I sometimes feel resentful when I don't get my way.
3. On a few occasions, I have given up doing something because I thought too little of my ability.
4. There have been times when I felt like rebelling against people in authority even though I knew they were right.
5. No matter who I'm talking to, I'm always a good listener.
6. There have been occasions when I took advantage of someone.
7. I'm always willing to admit it when I make a mistake.
8. I sometimes try to get even rather than forgive and forget.
9. I am always courteous, even to people who are disagreeable.
10. I have never been irked when people expressed ideas very different from my own.
11. There have been times when I was quite jealous of the good fortune of others.
12. I am sometimes irritated by people who ask favors of me.
13. I have never deliberately said something that hurt someone's feelings.

## Appendix I: Demographic Questionnaire, Study 3

(1) What is your gender? \_\_\_\_ male \_\_\_\_ female

(2) What is your age? \_\_\_\_\_ years

(3) What is your ethnicity (please select all that apply):

Asian, Asian American, or Pacific Islander: \_\_\_\_

Black or African American: \_\_\_\_

Caucasian/White: \_\_\_\_

Hispanic: \_\_\_\_

Other: \_\_\_\_ (Please explain: \_\_\_\_\_)

(4) What is the highest level of education that you have received?

Less than high school \_\_\_\_

High school \_\_\_\_

Incomplete college \_\_\_\_

Associate's degree \_\_\_\_

Bachelor's degree (e.g., BA, BS, BBA) \_\_\_\_

Master's degree (e.g., MA, MS, MBA) \_\_\_\_

Doctor's degree (e.g., PhD, JD, MD) \_\_\_\_

(5) What is your employment status?

Employed, full time \_\_\_\_

Employed, part time \_\_\_\_

Self-employed \_\_\_\_

Student \_\_\_\_

Homemaker \_\_\_\_

Out of work and looking for work \_\_\_\_

Out of work but currently not looking for work \_\_\_\_

Disabled, unable to work \_\_\_\_

Retired \_\_\_\_

(6) What is your total household income before taxes during the past 12 months?

- Less than \$25,000 \_\_\_\_\_
- \$25,000-\$34,999 \_\_\_\_\_
- \$35,000-\$49,999 \_\_\_\_\_
- \$50,000-\$74,999 \_\_\_\_\_
- \$75,000-\$99,999 \_\_\_\_\_
- \$100,000-\$149,999 \_\_\_\_\_
- \$150,000-\$199,999 \_\_\_\_\_
- \$200,000 or more \_\_\_\_\_
- Would rather not say \_\_\_\_\_

(7) What industry sectors have you worked in? (check all that apply)

- Healthcare/Life Sciences \_\_\_\_\_
- Energy/Oil & Gas \_\_\_\_\_
- Consumer Goods or Services \_\_\_\_\_
- Technology \_\_\_\_\_
- Agriculture \_\_\_\_\_
- Leisure/Arts/Hospitality \_\_\_\_\_
- Media/Entertainment \_\_\_\_\_
- Real Estate/Construction \_\_\_\_\_
- Retail \_\_\_\_\_
- Transportation/Logistics \_\_\_\_\_
- Education \_\_\_\_\_
- Government (federal, state, local, etc.) \_\_\_\_\_
- Law/Legal Services \_\_\_\_\_
- Other (please indicate) \_\_\_\_\_

(8) Is English your first language? \_\_\_\_\_ Yes \_\_\_\_\_ No

(9) If your answer to (8) is No, how many years have you been speaking English?

(10) Do you speak a language other than English?

(11) If your answer to (10) is Yes, please list the languages in the text box provided below: \_\_\_\_\_

(12) Were you at all distracted during this survey?

(13) Were there any technical difficulties during this survey?

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## Biography

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