THE IMPACT OF FOREIGN ACCENT ON SOCIAL JUDEGEMENTS OF STUTTERING

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THE IMPACT OF FOREIGN ACCENT ON SOCIAL JUDGEMENTS OF STUTTERING (44 pp.)

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This thesis investigated the interplay between foreign accent and social judgments of stuttering with a particular emphasis on American-English monolingual and Arabic-English bilingual speakers. This project underscored the importance of linguistic diversity and how speech disorders and differences are perceived by native speakers of American English. The study aimed to uncover potential biases toward and challenges faced by Arabic-English bilingual non-native speakers who stutter. To do this, an experimental design was used to evaluate contrasting perceptions of stuttering among American-English and Arabic-English bilingual speakers. It was theorized that the foreign accent may intensify negative judgments towards stuttering, potentially due to linguistic prejudices or lack of exposure and potential additive effects associated with multiple out-group features (i.e., accent and stuttering). Findings contributed to the broader discourse on language, stigma, and inclusivity, highlighting the necessity for a more precise understanding of speech disorders and differences within multicultural contexts.

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TABLE OF CONTENTS

Page

LIST OF TABLES

Table Page

CHAPTER I

INTRODUCTION

In the present globalized world, the integration of the spoken language, how people sound (e.g., their vocal identity), and the extra-linguistic cues they produce can noticeably impact how we perceive and judge each other. This is especially the case if those features are different from the expected norms in a communicative community. In this thesis, one of the critical aspects of this fact was explored by analyzing how the foreign accent impacts our social judgments of stuttering and the level of cognitive effort that we use to socially judge others. Specifically, the study focused on speech-language productions of an Arabic-English bilingual and American-English monolingual whose speech was digitally manipulated to sound stuttered was evaluated based on social judgments of out-group characteristics. This culturally varied communication context adds a unique dimension of how language is understood in a social context, enhancing its relevance and applicability in academic, clinical, and real-world contexts.

Rationale for the Study

Stuttering is a speech difference/disorder that leads to disfluent speech and may frequently carry social stigma and negative stereotypes and biases which impact the social, education, and professional outcomes for affected individuals (Guitar, 2013). These effects may be increased when combined with having a foreign accent which is often associated with greater linguistic challenges. To develop inclusive practice and reduce this stigma associated with stuttering and foreign accents we need to understand to comprehend these dynamics.

This study aims to focus on how an Arabic-English accented speaker who (pseudo)stutters is perceived compared to the American-English accented speaker who (pseudo) stutters (i.e., we digitally manipulate their speech to approximate the perception of stuttered

speech through the prolongation of the initial /ʃ/ of three verbs – shoot, shut, shake). In addition to speaker accent and the pseudo-stuttering manipulation, grammaticality was also manipulated. Research has shown that foreign-accented speech that is marked by ungrammatical syntactic construction is often forgiven (e.g., over-regularization of the irregular -ed form; Hanuliková et al., 2012; Yang, 2020). A native speaker of English who violates requisite grammatical constructions should be judged more harshly than the non-native speaker. We then consider how these out-group characteristics are judged and may account for negative social judgments made by individuals who have American-English accents, who do not stutter, and presumably have mastered English grammar enough to notice when a speaker says something ungrammatical. This study particularly explored whether a foreign accent alters the negative judgments commonly associated with stuttering.

To do this a computer mouse-tracking task was used because it permits the evaluation of explicit (i.e., final decision responses) and implicit (i.e., not under conscious control) responses during social judgment and decision-making (Ferguson et al., 2019; Roche et al., 2020).This method also permits the measurement of cognition during the early phases of processing, revealing important characteristics of the decision-making process to reveal things like cognitive pull, which indirectly reflects competition between two decision options (Freeman & Ambady, 2010; McKinstry et al., 2008). This led to two primary research questions:

Research Question 1

Do listeners differentially judge speakers with varying degrees out-group speaking patterns?

Hypothesis

It was hypothesized that listeners would judge stuttered speech less positively than fluent speech, as consistent with previous research (Byrd et al., 2022; Ferguson et al., 2019; Niedzieski, 1999). However, if it is the case that listeners attribute disfluent speech to second language communication difficulty, then listeners may be more likely to rate ungrammatical stuttered speech more positively, consistent with research arguing that native speakers may forgive grammaticality errors because they understand the errors are due to language difficulty (Crowthere et al., 2023; Gibson et al., 2017; Hanuliková et al., 2012).

Research Question 2

Do non-stuttering native speakers of American English have cognitive difficulty making social judgments about speakers who produce varying degrees of out-group speaking patterns?

Hypothesis

It is hypothesized that when listeners are more easily able to engage in common social heuristics (e.g., stuttering is really just cognitive difficulty finding words; Brown-Schmidt et al., 2008; Clark & Fox Tree, 2002; or speaking a second language is hard; Crowthere et al., 2023; Gibson et al., 2017; Hanuliková et al., 2012; Munro & Derwing, 2011), cognition may rely on heuristics, making cognition easier – as reflected by less cognitive competition in their action dynamics. For example, if a listener attributes a heuristic that speaking a second language is difficult, then they may produce less cognitive competition when making a social judgment about ungrammatical disfluent speech, relative to grammatical fluent speech produced by a non-native speaker of English.

CHAPTER II

REVIEW OF THE LITERATURE

Language is not just a tool for communication; it's a reflection of our personalities and cognitive processes, and the diverse societies we live in (Kramsch, 2014; Roche et al., 2020). Exploring how the words we use, the context in which we use them, and the social cues we receive play a vital role in shaping our understanding of language and each other. These social cues are often wrapped up in extra-linguistic information (i.e., cues that communicate information beyond literal language) that combine with language to modify meaning and promote effective communication (e.g., body language and gestures, voice features, context, cultural perspectives, environmental factors, and social relationships; Bucholtz, 1999; Kramsch, 2014). These extra-linguistic cues index to the person speaking to help us (most of the time) infer intended meanings behind the things we attempt to communicate (Clark, 1998; Pennebaker & King, 1999; Roche et al., 2020). However, the receiver must be able to recognize the pragmatic intent of the extra-linguistic social cues (i.e., also termed socio-indexical cues) that index meaning.

This is a major issue international students may face when interacting with locals. For instance, there are many cultural differences that exist between Arabic-speaking international students (e.g., In general, when Arabs gather to eat; the host should offer food for others frequently and pick the best pieces of any dish and offer it to others. This is part of the hospitality and respect), that may lead American students to misunderstand intentions (e.g., In the American culture people offer food for others once and if they reject it they may not offer again). That could lead to misunderstanding when Arabs and Americans gather in social settings, as their cultural practices are different. The American person, for example, could become annoyed if the

Arabic person offers food frequently, and the Arabic person could consider not trying to offer the food frequently that he is not being welcomed or affronted) (see Kreuz & Roberts, 2017). It is important that when interacting cross-culturally, that people attempt to find common ground or shared experiences to promote social cohesion and reduce social distance. This process leads people to their final decisions (explicit responses) of whether the food is accepted or declined and also their implicit responses such as hesitation or conflict which is automatic thinking. These implicit responses can provide insights into the social judgments being made and the potential for cultural misunderstandings.

According to Clark (1998), one major way we may miscommunicate is by not understanding or recognizing multiple potential meanings for words, concepts, pragmatic interaction, and so forth. For instance, words and phrases are not fixed in meaning but depend on where and how they are used. A word might mean one thing in one situation and something completely different in another – which is often not clear until pragmatic proficiency is established in an L2 speaker who is not a native speaker of English (Kreuz & Roberts, 2017). Take the word 'argument' as an example. Argument can have multiple interpretations and context should guide the interpretation of the meaning. In an academic setting, an argument might be understood as a reasoned set of assumptions leading to a conclusion, reflecting a logical and structured lesson. An argument might be interpreted as a heated exchange or conflict between individuals in a social setting.

For example, imagine the following context: an international student is interacting with an American-English speaking supervisor in an academic and professional setting. A misunderstanding occurs when the student and supervisor were working together on a standardized speech test (e.g., GFTA-3). After comparing both results, with a smile and

excitement during the scoring phase, the international student told his supervisor, "I expected to have an argument about the production of the word (tree) for this student." The supervisor mistook what the student meant when she used the term "argument." The student meant to use the term argument to mean a well-reasoned discussion. In a different context with a different supervisor, the same student used the term "argument" but the word was perceived more positively and did not interpret it to mean an aggressive exchange of ideas. In both scenarios, the student did not recognize the potential meanings of the word argument and used it as if it meant a discussion – likely due to a lack of pragmatic proficiency on the part of the student (Kruez & Roberts, 2017) or cultural sensitivity on the part of instructor, who penalized the student's use of the word argument. In contrast, the second instructor recognized that the term was likely misused due to L2 contextual factors and the potential lack of pragmatic proficiency and therefore was able to adjust the interpretation of the student's intent accordingly.

Clearly the two instructors used two different rules to interpret the same word. We may then assume that there might be some common rules or heuristics (Tversky & Kahneman, 1974) that drive how to interpret strangers (e.g., cooperative principle; Clark, 1998). For the second supervisor, this provides an example of how indexicality helps with understanding, such that meaning depends upon the context and familiarity of the indexicality differences, and extra-linguistic cues are used in communication (e.g., body language and prosody). That is, indexicality is extremely important for interpretation, as it impacts our interpretation of the words being used and how the words are used (Bucholtz, 1999; Kramsch, 2014). For the first supervisor, they may have relied on interpretations based on “what [American] students usually mean” and did not modify interpretation on the L2 socio-indexical cues. To advance this discussion further, indexicality in a social context is considered in more detail in the next section.

Socio-Indexical Cue and Social Judgment

When judging strangers, we might need to come up with a quick assessment to know how to respond (e.g., using respectful language with someone perceived as an elder, versus slang often used with a friend; Clark, 1998; Niedzielski, 1999). One way we do this is by assessing easy social categories, such as age, gender, socio-economic background, cultural affiliation, or group membership (Hay & Drager, 2010; Niedzielski, 1999; Roche et al., 2021). In fact, we commonly provide a range of social cues that allow strangers to make interpretations based on how certain cues are indexed to the person or the person's identity – termed socio-indexical cue. Social indexical cues, thus, are related to the social context (or social cue) that help drive meaning and interpretation (i.e., the social cue tells us how to interpret and interact with what is being said; Kleinschmidt et al., 2018; Roche et al., 2020). For example, we may add a pragmatic effect to the things we say by modifying how we produce the sounds of language. For instance, elongation of vowels is a simple way in which speakers may convey different emotional states through affective expression. Podesva (2011) showed that elongations can serve as a powerful socio-indexical cue to emphasize, express sarcasm, or even disbelief (e.g., "ssssssssure," and winking). If this cue is commonly heard in sarcastic contexts, interlocutors may develop a heuristic or cognitive shortcut for the prolongation for the /ʃ/ in this example, provides social instructions for pragmatic interpretation. Interestingly, prolongations of phonemes in the initial /ʃ/ position may also be a common feature of stuttering - which may present an interpretability problem for listeners who have only heard /ʃ/ in a non-stuttering context (Guitar, 2013; Yari & Seery, 2015).

Therefore interlocutors must learn how cues are used through active interaction. In this case, elongations are a layer of socio-indexical cues that help our understanding and interaction

and need to be learned to be interpreted correctly. Social interactions affect how we learn to talk and understand each other, and the things we learn and know change depending on many factors, such as who we are talking to (e.g., how well we know the person), the topic we are discussing, where we are, and even cultural norms and expectations.

We not only see this in pragmatic interpretation and in the sounds we produce, but we also see socio-indexical cues driving how we interpret men and women. Men and women may conform to or flout socially prescriptive gender norms in everyday communication (Fisk & Ridgeway, 2018), and listeners must understand what the cues mean to avoid negative social outcomes (if they care about that). In fact, men and women are often very quickly socially judged based on the words they use and how they use them (Fisk & Ridgeway, 2018; Kleinschmidt et al., 2018; Prentice & Carranza, 2002; Roche et al., 2023). Amantullah and Tinsley (2013) argued, for instance, that women who tend to speak assertively (a common cue used by men), are often overlooked for professional advancement and receive social backlash. There may be some social reason for men and women to follow or break social rules (Fisk & Ridgeway, 2018). Usually, assertiveness is a masculine feature, and women who speak assertively may be judged negatively – but to be taken seriously in professional settings women may choose to violate gender communication expectations. This can lead to social backlash for not fitting traditional gender communication styles (Fisk & Ridgeway, 2018; Kleinschmidt et al., 2018; Prentice & Carranza, 2002; Roche et al., 2023; Amanatullah & Tinsley, 2013). However, Roche et al. (2023) recently found that gender role expectations may resolve when gender is deemed an unimportant socio-indexical cue in the current context; therefore, it is imperative for interlocutors to learn what the important social cues are in the current communication context, as

relying on heuristics to interpret pragmatic information may lead to erroneous and sometimes harmful conclusions.

At this point, we have shown that socio-indexical cues may lead to misunderstandings in cross-cultural contexts; prolongations of sounds may lead to miscommunication if they are not understood, and violating gender expectations may lead to social backlash – and heuristics seem to be bad for us in communication. This would be a flawed conclusion, as heuristics can be rather helpful in communication. For instance, the things we say and how we say them often communicate aspects of our cognitive states (Pennebaker & King, 1999). This may promote social connectedness, as we may be able to rely on our conversation partners to help us communicate when we are having communication difficulties. Brown-Schmidt et al. (2008) found that when speakers produced disfluencies in their speech, it cued listeners to assume that cognition was affected, as they assumed the speaker's difficulty with word finding was cognitively based. Roche et al. (2019) argue that the reason that people who do not sutter judge people who do stutter so negatively is because they misattribute why stuttering occurs. When word finding issues occur, it is helpful and reduces cognitive load if our conversation partner fills in the word we are having difficulty retrieving (e.g., Clark & Fox Tree, 2002). Clark and Fox Tree (2002) argue that the likely reason this occurs is because word-finding trouble is often associated with heightened stress or distractedness. Pellowski (2011) also found that people who stutter (PWS) have more word-finding difficulty than people who do not stutter (PWNS), which the author suggested may impact their ability to speak with typical fluency, but people who do not stutter naturally assume that people who stutter do so because they, as a group, are stressed (i.e., which is not supported by evidence; Alm, 2014). Therefore, there are many instances in which socio-indexical cues are misattributed and misunderstood, we should be more forgiving of

non-native speakers use of language, assertive women should be judged on their skill, not their personalities, and people who are disfluent do not always have word-finding difficulty. Unfortunately, this is not typically how we interact in social contexts, as it is easier to rely on our heuristics than spend the time to understand other people. In what follows, we consider in more detail how speech disfluency and accent may be socially perceived.

The Perception of Stuttering and Foreign Accent.

A great deal of research has found that listeners tend to make negative social judgments about people who stutter, often misattributing disfluent speech to lack of intelligence or confidence, among other negative social judgments (Boyle, 2018; Guitar, 2013; Johnson, 2013; Roche et al., 2020, 2021). Socio-indexical cues, such as accents and stuttering, can spotlight/ lead to social mismatch (according to Niedzielski, 1999; Roche et al., 2021). Social mismatches occur when these cues emphasize perceived differences between a person's social identity and the expected norms, potentially producing negative judgments or biases (Kultu et al., 2022; Roche et al., 2020, 2021). Roche et al. (2021) also found that an out-group accent more negatively impacted social judgments of a person who stutters. In this task, they presented digitally manipulated stuttered speech from two U.S. American accented male speakers (Northern vs. Southern accented). The results indicated that both accented speakers who pseudo-stuttered were perceived negatively. However, the listeners tended to perceive the speaker with multiple out-group vocal cues (U.S. Southern-accented speaker who pseudo-stutters) more negatively than the speaker with one in-group and one out-group cue (U.S. Northern-accented speaker who pseudo-stutters). This suggests that individuals with multiple socio-indexical out-group cues may experience amplified negative appraisals, likely because differences are assumed to be bad because they do not belong to the in-group speech patterns (Roche et al., 2021).

In another study, Niedzielski (1999) argued that a social identity cue may also cue a speaker's nationality, which may significantly impact speech perception. He involved English speakers, with different dialects within the United States (e.g., Detroit) and the perception of Canadian-English speakers who are varied in their age and socio indexical cues for better community representation. When told a speaker was Canadian, participants were more likely to perceive Canadian vowel sounds, even if the speaker was from Detroit. Fairchild and Papafragou (2018) found that when individuals with a foreign accent produced under-informative statements (the provided statement is produced with less information than expected or necessary to complete a given communicative task, as when someone asks about direction and gets vague information), they were perceived more positively than speakers with native accents. Other researchers have also found similar trends, in that non-native speakers were penalized less for grammatical errors relative to native speakers (Gibson et al., 2017; Hanuliková et al., 2012). This was argued to occur because interlocutors took the perspective of the non-native speaker, such that they (1) understood the message, but also that they (2) understood that speaking a second language is difficult – giving the grammatical errors a pass for the non-native speakers and holding higher expectations of language skill for the native speakers.

Conversational conventions (i.e., a regularly observed and shared behavioral or linguistic practice within a specific population or group of individuals; Clark, 1998) are often context-dependent and may exhibit cultural or contextual sensitivity or insensitivity, requiring adaptability for effective communication and social interaction. These shared practices and norms play a fundamental role in shaping language, behavior, and social conventions within a given community or context (Berns, 2013; Clark, 1998). In Arab communities, starting conversations with polite greetings and questions about family well-being is normal. For

instance, people often say "Assalamu Alaikum" (peace be upon you) and ask about health and family before discussing the main topic. This practice reflects the cultural importance of hospitality and respect, shaping social interactions and communication norms. Another example is when two people approach the same door in Arab culture; the younger person is expected to open the door and wait for the older person or someone in a higher position to enter first. This practice is a sign of respect and recognition of social hierarchy. While opening a door for an elder is common in American culture too, opening with a statement like “Peace be with you,” is more likely to occur during a religious service and not common in greetings outside a religious setting. Instead, Americans are more likely to ask ostensible questions, like, “How are you?” with no expectation of really wanting to know the answer (Kreuz & Roberts, 2017).

This conversational convention plays a role among specific populations in coordinating actions, fostering mutual understanding, and addressing recurrent coordination problems (Lewis, 1969; Roche et al., 2020). Generally, conventions and socio-indexical cues are intertwined elements in communication, each playing a distinct yet interconnected role (Eckert, 2000; Labov, 1972). Conventions represent shared norms and practices within a social or linguistic group, serving as guidelines for behavior, language usage, and cultural practices (Clark, 1998). These concepts correlate because conventions can be influenced by or reflect socio-indexical cues specific to a particular group (Kleinschmidt, 2018; Roche et al., 2020). For instance, the formality of a greeting or even word meanings within a language may be influenced by the socio-indexical cues of the speakers. Conversely, socio-indexical cues provide listeners with valuable information about the speaker's social background, which can impact how conventions are applied or understood in a given social context. Conventions and socio-indexical cues jointly shape effective communication dynamics, offering insights into the rich tapestry of social

interactions (Hay & Drager, 2010; Kleinschmidt et al., 2018; Niedzielski, 1999; Roche et al., 2021).

Socio-indexical cues can be both helpful and potentially problematic, depending on the context and how they are used (c.f., Clark, 1998; Niedzielski, 1999). Niedzielski (1999) mentioned that the concept of socio-indexed cues intrinsically suggests that these cues can have varying effects in different social and contextual situations. Understanding the impact of multi-cue indexical speech on stereotyping can contribute to efforts to reduce biases and prompt more inclusive communication and social interactions (Clark, 1998; Kleinschmidt et al., 2018; Roche et al., 2021). As discussed by Roche et al. (2021), socio-indexical cues play a crucial role in understanding the compounding effects of multiple factors on social appraisals and stereotyping of out-group individuals. They examined how they contribute to negative perceptions and stigmatization of individuals from out-groups. The heuristics we develop, while often helpful, may also easily be overgeneralized, leading to incorrect or unhelpful social judgments. For example, listeners might assume that an accented person is less intelligent simply because they are unfamiliar with this accent or associate it with negative stereotypes. Similarly, stuttering might be unfairly interpreted as a sign of nervousness or lack of confidence rather than as a speech disorder. Therefore, overgeneralized heuristics can result in biased decision-making and social interactions, continuing discrimination and exclusion. Understanding the impact of multi-cue indexical speech on stereotyping can contribute to efforts to reduce biases and prompt more inclusive communication and social interactions (Clark, 1998; Kleinschmidt et al., 2018; Roche et al., 2021).

Various studies underline the intricate interplay between socio-indexical cues, negative appraisals, stereotypes, and discrimination (Ferguson et al., 2019; Hosoda et al., 2010; Ingvalson

et al., 2017; Kutlu et al., 2022; Lorenzoni et al., 2022; Niedzielski, 1999; Roche et al., 2020, 2021, 2023). Research emphasizes the significance of how multiple out-group cues can intensify social stigmatization and amplify adverse (negative) judgments in communication contexts (Roche et al., 2020, 2021, 2023). Socio-indexical cues influence social judgments, potentially leading to negative appraisals when there is a disparity between out-group cues and in-group expectations (Kleinschmidt et al., 2018; Kutlu et al., 2022; Lorenzoni et al., 2022; Niedzielski, 1999; Roche et al., 2020, 2021, 2023). In the study by Kutlu et al. (2022), a sample from a largely White Ethnicity sample, listened to English sentences spoken with non-American accented speech. They found that speech was judged as more accented and more challenging to understand when paired with a South Asian face, relative to the White face. This shows that seeing a face from an out-group (South Asian) led to more negative judgments about the speech, especially in a less diverse area like Gainesville, FL.

Socio-indexical cues, such as accents, dialects, and language choices, offer numerous benefits for fostering understanding, promoting inclusivity, and enriching social interactions (Roche et al., 2023; Wang et al., 2023). These cues enhance cultural awareness and sensitivity, which is generally important for facilitating respectful interactions with individuals from diverse backgrounds (Brown-Schmidt et al., 2008; Clark, 1998; Ferguson et al., 2019; Kramsch, 2014). Moreover, they allow people to express their unique identities and affiliations, promoting a sense of belonging and community building. Socio-indexical cues can also aid effective communication by tailoring interactions to a person's comfort level and understanding (Clark, 1998; Kramsch, 2014; Roche et al., 2023). Additionally, these cues play a vital role in preserving and passing down cultural traditions, celebrating diversity, reducing misunderstandings, facilitating cultural exchange, and enhancing cross-cultural interactions (Aririguzoh, 2022;

Kramsch, 2014). When approached with an open and respectful mindset, socio-indexical cues contribute significantly to a more enriched and harmonious social landscape (Kramsch, 2014; Roche et al., 2021; 2023).

What is interesting is that in some contexts, accented speakers may be perceived negatively merely because of their out-group characteristics. However, listeners sometimes forgive communicative errors, because of this socio-indexical cue. It is less clear; however, when and how accent cues interact with other out-group characteristics and communicative effectiveness. Roche et al., (2021) would predict that the compounding nature of the out-group accent with stuttering would lead to more severe social judgments, but other studies might suggest that when the speaker is speaking with less grammatical correctness (Gibson et al., 2017; Hanuliková et al., 2012), this could soften the negative social judgment because the ungrammatical content communicates extra-linguistically that the disfluent speech may be a byproduct of speaking a second language. Therefore, the purpose of the current study will be to evaluate the impact of grammaticality, foreign accent, and disfluent speech on social judgments about a non-native speaker and a native speaker of English. Whether or not participants interpret multiple outgroup characteristics as compounding is considered in the next section.

Current Study

To answer the question about how listeners interpret accent and stuttering was assessed using a computer mouse-tracking task. This study evaluated the relative difficulty listeners had when making social judgments about speakers when some of their speech characteristics belong to an out-group category. This resulted in two primary research questions.

Research Question 1

Do listeners perceive speakers with varying degrees of out-group speaking patterns more negatively compared to speakers from the in-group? Do listeners differentially judge speakers with varying degrees out-group speaking patterns?

Hypothesis

It was hypothesized that listeners would judge stuttered speech less positively than fluent speech, as consistent with previous research (Byrd et al., 2022; Ferguson et al., 2019; Niedzieski, 1999). However, if it is the case that listeners attribute disfluent speech to second language communication difficulty, then listeners may be more likely to rate ungrammatical stuttered speech more positively than the grammatical stuttered speech, consistent with research arguing that native speakers may forgive grammaticality errors because they understand the errors are due to language differences (Crowthere et al., 2023; Gibson et al., 2017; Hanuliková et al., 2012).

Research Question 2

Do non-stuttering native speakers of American English have cognitive difficulty making social judgments about speakers who produce varying degrees of out-group speaking patterns?

Hypothesis

It is hypothesized that when listeners are more easily able to engage in common social heuristics (e.g., stuttering is really just cognitive difficulty finding words; Brown-Schmidt et al., 2008; Clark & Fox Tree, 2002; or speaking a second language is hard; Crowthere et al., 2023; Gibson et al., 2017; Hanuliková et al., 2012; Munro & Derwing, 2011), cognition may rely on heuristics, utilize/facilitate cognition – as reflected by less cognitive competition in their action dynamics. For example, if a listener attributes a heuristic that speaking a second language is

difficult, then they may produce less cognitive competition when making a social judgment about ungrammatical disfluent speech, relative to grammatical fluent speech produced by a non-native speaker of English, which may listeners find to be unexpected.

Computer Mouse Tracking

These two questions will be answered using computer mouse tracking, because it permits the evaluation of explicit (i.e., final decision responses) and implicit (i.e., not under conscious control) responses during social judgment and decision-making (Ferguson et al., 2019; Roche et al., 2020). This technique is preferred over other methods, like surveys, because it reduces threats to validity due to social desirability bias (Kwak et al., 2019). This method also permits the measurement of cognition during the early phases of processing, revealing important characteristics of the decision-making process to reveal things like cognitive pull, which indirectly reflects competition between two decision options (Freeman & Ambady, 2010; McKinstry et al., 2008). When there is no cognitive competition, this often indicates that a listener may be relying heavily on a cognitive heuristic to drive their response (Chen & Chaiken, 1999). This method, therefore, is important in allowing us to assess key aspects of the proposed research questions and how listeners assess and integrate out-group speech patterns.

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CHAPTER III

METHODOLOGY

Participants

A power analysis (effect size f = .14, 1-ß = .95) indicated that a total of 56 participants would be needed to meet statistical sensitivity with a 2 x 2 x 2 design, with 4 repetitions for each of the three verbs (12 unique measurements). Unfortunately, due to low enrollment in the current study, only 33 participants volunteered. Therefore, 33 undergraduate students (Mage = 20 yrs, SDage = 1.02; women = 26, men = 7; White = 30, Black = 1, Asian = 1, Latina/o = 1) with American-English accents volunteered from the Learning Sciences Subject pool at Kent State University. All participants were monolingual native speakers of American English (see Table 1 for native accent; majority of participants with an Inland North accent). One participant reported having a prior diagnosis of a speech, language, and/or hearing impairment and sixteen of the participants reported having some type of visual impairment, but all wore corrective lenses (e.g., eyeglasses or contact lenses or both). One participant was excluded due to a hearing impairment, while eight additional participants reported not using a computer mouse and were excluded from the mouse-tracking analysis. Therefore, there were a total of 32 participants included in the categorical (explicit response) data analysis, and 24 participants were included in the mouse-tracking analysis.

In addition to the age, gender, and race demographic information, we also evaluated demographics based on first-generation status, traveled abroad, familiarity of Arabic accent, and definition of stuttering and familiarity (see Table 2 for a summary of the other demographic variables).

Table 1

Participants reporting different accents

Demographic / Accent	Statistic
Inland	70%
Youngstown	3%
Southern Ohio	3%
Midland	6%
New England	3%
Western Pennsylvania	12%
Northern Pennsylvania	3%

Table 2

Participant Demographics

Demographic / Other	Statistic
First Generation	21%
Travel Abroad	42%
L2	29%
Arabic Accent Familiarity	3%
Experiencing Arabic Definition	58%
Accuracy of Stuttering Definition	0%
No familiarity with PWS	52%
Acquaintance with PWS	18%
Family/Friend of PWS	30%
Socio-economic status: low	6%

Note: Percentage of participants who reported being a first generation college student, have traveled abroad, speaking a second language, familiarity of the Arabic accent, experiencing Arabic accent, defining Stuttering accurately, familiarity with people who stutter (PWS), acquaintance with PWS, family/friend of PWS, socio-economic status (low, medium,high).

Materials

A cloud-based experiment and data collection platform, Finding Five (FindingFive, 2023), was used to host the experiment in an online setting in which participants were able to

perform the task online, remotely. All participants were instructed to use a computer mouse (no trackpads) and over- or in-ear headphones (no computer speakers). Any participant reporting using a computer trackpad or speakers were excluded from mouse-tracking data analysis (N = 8).

Stimuli

The study analyzed the perceived social dimensions of native speakers of American English and L2 speakers of English when they produce grammatically incorrect and/or disfluent utterances. To achieve this, two male speakers, from the same age group of the participants, and undergraduate student from KSU (one is an American-English-Accented; and the other is an Arabic English-Accented) were asked to speak three sentences as naturally as possible, containing a simple sentential construction in English (subject + verb + object) for each of the following verbs: shut, shot, shook. We did not control for any stylized differences due to the Arabic accent, and instead wanted to ensure the sentential construction was simple for an English construction. Additionally, the verbs were chosen because their past tense forms are irregular (i.e., adding -ed to the end is grammatically incorrect) and the fricative voiceless /ʃ/ sounds in the initial position make it easier to manipulate the perceived fluency (i.e., stuttered vs. not stuttered) of the verb (see Ferguson et al., 2019; Roche et al., 2020, 2021). By manipulating the sentences in different ways, the study aimed to explore how listeners perceive fluency in spoken language and how disfluencies and grammatical errors can affect this perception. In other words, digitally manipulated stuttered speech was used to control for variations in speech characteristics, such as pitch and tempo, and to isolate the impact of stuttering on social judgments.

As a note, a sentence that contained a grammatical error involved the incorrect addition of the -ed to the chosen verbs, which represents a common overregularization of the -ed form in English language development (Jiang et al., 2021; Marcus et al., 1992) and in foreign accented

speech (McDonald & Roussel, 2010) – Elman (1996) argues that this overregularization is not due to misattribution of a rule, rather due to the regular frequency at which -ed is produced in English. Additionally, a disfluent utterance represents a disruption in spoken language flow, commonly in the form of a repetition of sounds or syllables, prolongation, blocks, hesitation, and fillers (Zengin-Bolatkale, 2018) – but for the sake of the current study, only a prolongation to cue a disfluency was implemented, because it is a relatively simple cue to manipulate digitally and other researchers have used this cue to simulate stuttered speech (Kawai et al., 2007; Roche et al., 2019, 2021). A fluent sentence represented smooth, and fluid delivery of language to the listener (Segalowitz, 2010).

To create different stimulus categories, each of the original sentences were digitally manipulated to contain a disfluency, grammatical error, a combination of both (disfluent and grammatical error), or error free, fluent context (e.g., grammatical and fluent). This created 4 stimulus categories that both speakers produced: disfluent + grammatical; fluent + not grammatical; disfluent + not grammatical; fluent + grammatical; (see Table 3 for sample sentences). A sentence with a disfluency consisted of the verb being digitally manipulated; such disfluencies were created by elongating the initial /ʃ/ sound of the verb by 501 msec (the prolongation categorized as a stuttered sound in American English – similar to Ferguson et al., 2019). It should be noted that the /ʃ/ sound in Arabic may have a different duration compared to American English, as it may be influenced by phonetic context and prosodic features specific to Arabic. Both American English and Arabic /ʃ/ sounds are voiceless postalveolar fricatives, but Arabic /ʃ/ might exhibit subtle variations in its acoustic signature due to differences in articulation and coarticulation effects (Javed, 2013). It is unclear whether non-Arabic speakers

are sensitive to these perceptual differences. Since the participants are native speakers of American-English, we chose this feature of stuttering mostly for sake of ease of implementation.

The same procedures from the Ferguson et al. (2019) study were followed in this study, in which we asked each speaker to produce a prolonged /ʃ/ sound in a naturalistic context, and we extended it to meet the 501 msec prolongation through a duration manipulation in Praat. This was then digitally added this extended /ʃ/ to each of the original sentences to create the perceptual quality of stuttering the verb.

For disfluent and grammatical sentences, the verb in the sentence included a prolonged fricative in the initial sound position, but the verb contains no grammatical error (which means that the sentence was still grammatically correct, but the prolongation of /ʃ/ produced the perception of a disfluency). In a sentential context in which a statement is fluent + grammatical – the sentence contains a completely fluent verb with no grammatical error; that is, this will create smooth delivery of language to the listener (Ferguson et al., 2019).

Table 3

Sample Sentences

Accent	Fluency	Grammatical	Sentence
American English	Fluent	Grammatical	Sally shut the door
		Not Grammatical	Sally shutted the door
	Stutter	Grammatical	Sally shhhhut the door
		Not Grammatical	Sally shhhhutted the door
Arabic English	Fluent	Grammatical	Sally shut the door
		Not Grammatical	Sally shutted the door
	Stutter	Grammatical	Sally shhhhut the door
		Not Grammatical	Sally shhhhutted the door

Note: Sample sentences to be produced by an American and Arabic accented speaker in grammatical/not grammatical and fluent/disfluent speech.

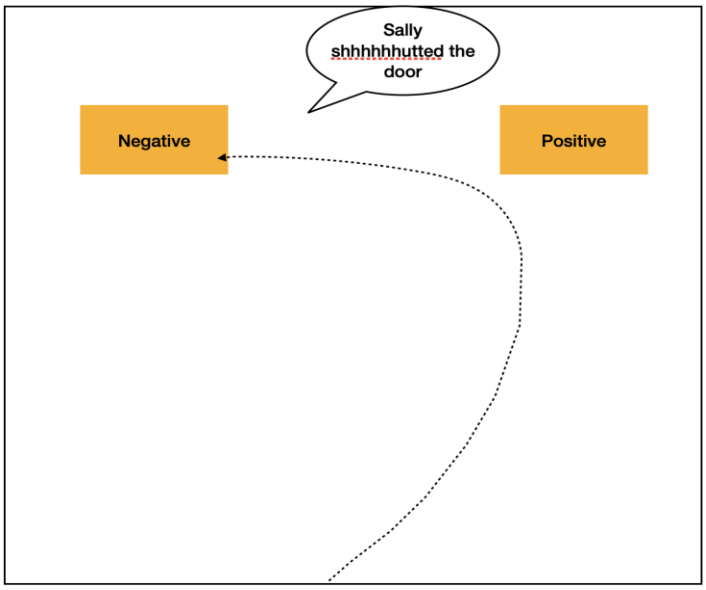
Design & Procedure

A two speaker accent (American-English; Arabic-English) by two grammatical construction (grammatical; ungrammatical) by two fluency (fluent; stuttered) within-subjects design (i.e., participants heard all combinations of stimuli) was used to evaluate positive and negative social judgments. Both speakers were in their early 20s and were born biologically male – this is an important consideration, as gender is a social construct, but a person's sex impacts their vocal biology. Males were also chosen to increase ecological validity, as more males are impacted by stuttering than females (Yairi et al., 1996). Each speaker will have sentences (with the three words shoot, shut, shake) that are produced grammatically or ungrammatically, with or without fluent speech – resulting in a total of 24 stimuli, which were all randomly presented to participants.

Informed consent was obtained through digital presentation over the web by clicking "Yes, I consent," after reading the consent form (KSU 989 IRB approved). Listeners were then asked to confirm they are using both headphones and a wired mouse. After confirmation of consent and the required devices, participants were randomly presented with the sentences and were asked to make a judgment of negative (always on the left) or positive (always on the right) – see Figure 1 for example. Often in computer mouse-tracking studies, the response options switch sides. However, since the task is short, we chose a more ecological setup, as it provides a continuum of negative, which on a magnitude line would exist on the left, while positive would exist on the right.

Figure 1

Mouse Tracking Interface Response



Note: Example of the mouse-tracking interface presenting the response options and a response trajectory that reflects cognitive pull toward the positive response option, indicating cognitive competition with a large area under the curve.

Measures

Social Judgment

Social judgments of the speakers were based on categorical assessments (they would be exposed to a single sentence each time to judge) of the negative (coded as 0) or positive attributes (coded as 1) about the male speakers (see Figure 1 for an example of the experiment set up). For the purpose of the thesis, the social judgment variable was reported based on the proportion of positive responses. This measure provides an explicit end response, which reflects the final decision.

Area under the curve

Area under the curve reflects cognitive competition, reflecting cognitive pull toward the competing response categories (Freeman & Ambady, 2010; McKinstry et al., 2008). Larger negative responses reflect more cognitive competition toward the unchosen response option,

while larger positive responses reflect more cognitive competition toward the chosen response option. For instance, if the final response option was positive but there was pull toward the negative response option, AUC would be reflected as a negative number. However, if the participant selected negative and was pulled strongly toward negative, the value would be reflective of a positive AUC. This measure provides an implicit measure of cognition as decision making unfolds over time (McKinstry et al., 2008).

CHAPTER IV

FINDINGS

Research Question 1

Do listeners differentially assess speakers with out-group speaking patterns (Arabic-English accented speech and stuttering)? It was hypothesized that listeners should categorize perceived stuttered speech less positively than fluent speech. However, if it is the case that listeners attribute disfluent speech to second language communication difficulty, then listeners may be less likely to penalize the non-native speaker's stuttered speech when ungrammatical than when it is grammatical. To answer this question, a logit mixed random effects model was used to evaluate the social judgment of the 2 speakers by 2 grammaticality condition by 2 fluency condition stimuli.

A mixed logit random (Ns=) effects model was used to evaluate the proportion positive judgment as a function of Speaker Accent (American English, Arabic English), Fluency (Fluent, Stuttered), and Grammaticality (Grammatical, Not Grammatical); subject and word were set as random intercepts, with Speaker Accent set as a random slope. Results indicated a main effect of Speaker Accent (ß = 0.69, SE = 0.22, z = 3.15, p = .002), Fluency (ß = 0.84, SE = 0.16, z = 5.23, p < .001), Grammaticality (ß = 0.97, SE = 0.34, z = 2.83, p = .005), and a Speaker Accent by Grammaticality interaction (ß = 1.09, SE = 0.44, z = 2.51, p < 0.05). Speaker Accent, Fluency, and Grammaticality accounted for approximately 23% (R2) of the variance in the proportion of positive responses.

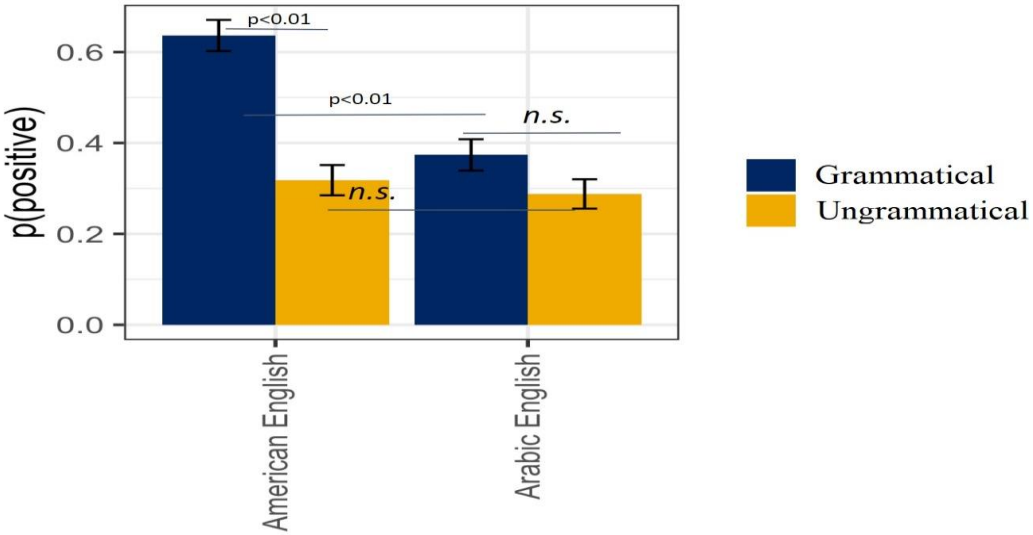
Follow-up post hoc analyses indicated that the American-English accented speaker (M = 0.48; SD = 0.50) was rated significantly more positively than the Arabic-English accented speaker (M = 0.33; SD = 0.47; p < 0.01). Additionally, the fluent speech (M = 0.49; SD = 0.5)

was rated significantly more positively than the stuttered speech (M = 0.32; SD = 0.47; p < .001). Grammatical speech (M = 0.51; SD = 0.50) was also rated significantly more positively than non-grammatical speech (M = 0.30; SD =0.46; p < 0.01).

As seen in Figure 2, participants were more likely to rate the non-grammatical statements of the American-English Accented speakers less positively than the grammatical statements (ß = 1.49, SE = 0.38, z = 3.97, p < .001) — however, there was no significant difference between grammaticality for the Arabic-English Accented speaker (ß = 0.43, SE = 0.37, z = 1.14, p = 0.25). Additionally, the grammatically correct statements produced by the American-English accented speaker were rated more positively than the Arabic-English accented speaker (ß = 1.22, SE = 0.23, z = 5.42, p < .001), but there were no differences between non-grammatical statements between the speakers (ß = 0.16, SE = 0.23, z = 0.69, p = 0.49).

Figure 2

Proportion of Positive Responses



Note: Proportion of positive responses (p(positive)) and standard errors as a function of speaker accent and grammaticality.

Research Question 2

Do listeners have cognitive difficulty making social judgments about speakers who produce out-group speaking patterns (Arabic-English accented; stuttering)? It is hypothesized that when listeners are more easily able to engage in common social heuristics, they may be more easily able to make social judgments, as reflected by less cognitive competition in their action dynamics. For example, if a listener attributes a heuristic that speaking a second language is difficult, then they may produce less cognitive competition when making a social judgment about ungrammatical and disfluent speech, relative to grammatical and fluent speech produced by a non-native speaker of English. To answer this question, a linear mixed random effects model will be used to evaluate area under the curve (AUC) associated with social judgments of the 2 Speakers by 2 Fluency by 2 Grammatically factors.

A linear mixed random effects model was used to evaluate AUC by Speaker Accent (American-English, Arabic-English accented), Fluency (fluent, stutter), and Grammaticality (grammatical, non-grammatical). Subject was set as a random intercept, with grammaticality set as a random slope - a simpler model was chosen due to poor fit of the more complex model resulting in singularity. Results indicated only an interaction between Fluency and Grammaticality (see Table 4 for model output). All independent variables entered into the model, together, accounted for approximately 4% (R2 - a very small effect size) of the variance in the Speaker Accent.

Table 4

Results of Data Analysis

Variable	***ß***	***SE***	***t***	***p***
Speaker Accent	0.004	0.003	1.46	0.15
Fluency	0.001	0.003	0.29	0.77

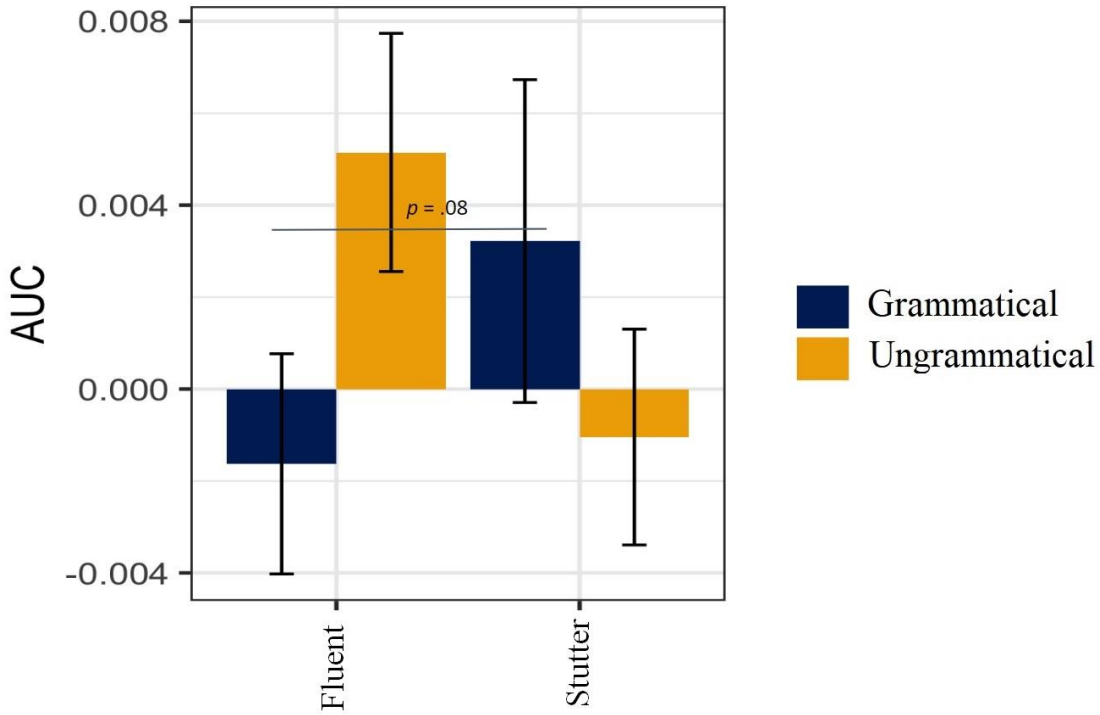
Variable	***ß***	***SE***	***t***	***p***
Grammatical	-0.0015	0.003	-0.47	0.64
Speaker Accent + Fluency	0.003	0.005	0.59	0.56
Speaker Accent + Grammatical	-0.0013	0.005	-0.23	0.82
Fluency + Grammatical	-0.011	0.005	-1.97	0.05*
Speaker Accent + Fluency + Grammatical	0.012	0.011	1.06	0.29

Note: Estimates (ß), standard errors (SE), t and p-values for the research question 2, which includes an analysis of AUC (area under the curve) as a function of speaker accent, fluency, and grammaticality.

As seen in Figure 3, there was stronger pull toward the opposing category when participants categorized fluent, grammatical statements relative to stuttered grammatical statements. When the utterance was not grammatical, participants exhibited stronger pull toward the chosen category when the utterance was fluent, but more pull toward the alternate category when the utterance was stuttered. It should be noted that these were only trending, as when the post hoc comparisons were evaluated, differences exhibited a marginal trend (ß = 0.007, SE = 0.004, t = -1.77, p = 0.078). This was likely due to low power, as the sample was underpowered, and could not stand up to the multiple correction of family-wise error.

Figure 3

Mean Area of AUC



Note: Mean area under the curve (AUC) and standard errors as a function of fluency and grammaticality.

CHAPTER V

DISCUSSION

Communication disorders may inhibit communication, often intersecting with harmful stereotypes and bias (Byrd et al., 2015, 2022; Clark, 1998; Ferguson et al., 2019; Kramsch, 2014; Roche et al 2020, 2021). As the world grows more into a global community, out-group speech characteristics have the potential to exacerbate and amplify negative stereotypes — making some communicative environments less safe. In the current study, we asked listeners to make social judgments about grammatical/ungrammatical fluent and stuttered speech by people who stutter that have an American-English or Arabic-English accent. To assess this, a computer mouse-tracking task elicited explicit (final decision) and implicit (area under the curve) responses to measure how cognition was impacted during decision making.

Explicit Measures

Recall that the explicit measure was the proportion of positive social judgments about the speakers. It was hypothesized that listeners would judge stuttered speech less positively than fluent speech, as consistent with previous research (Byrd et al., 2022; Ferguson et al., 2019; Niedzieski, 1999). However, if it is the case that listeners attribute disfluent speech to second language communication difficulty, then listeners may be more likely to rate not grammatical stuttered speech more positively, consistent with research arguing that native speakers may forgive grammaticality errors because they understand the errors are due to language difficulty (Crowthere et al., 2023; Gibson et al., 2017; Hanuliková et al., 2012). Consistent with study hypotheses, the participants did, in fact, rate more positively the fluent speech relative to the stuttered speech. The results also partially supported the second hypothesis that the L2 speakers

would be forgiven for grammaticality errors, such that they were not further penalized for the error like the L1 speakers. The findings are considered in more detail.

When evaluating the final decision (explicit responses), the results revealed that the American accented speaker was rated more positively than the Arabic accented speaker. This may occur based on the listeners' previous mental representations about being from the out-group leading them to judge them more negatively (Kultu et al., 2022). Unsurprisingly, fluent speech was rated more positively than the stuttered speech; this is likely because participants attributed the perception of stuttering as being wrong or not sounding correct (Byrd et al., 2017; Roche et al., 2019). Moreover, grammatical speech was rated more positively than ungrammatical speech. This is also unsurprising because it grammatically matched the in-group native speaker speech-language style. However, it is less useful to interpret this main effect in light of the higher order interaction. More specifically, grammatical statements from the American-English accented speaker were rated positive more often than the grammatical statements from the Arabic-English Accented speaker, but there was no difference between speakers when they were not grammatical - this is consistent with previous studies indicating that an accented speaker would not be penalized for speaking ungrammatically even though they have challenges communicating (Kang et al., 2010; Sam & Berry, 2010). In conclusion, considering the in/out- group characteristics impacted the final decision more than the typical features of the language (i.e., being grammatical/ non-grammatical) because non-grammatically is permissible when interacting with a non-native speaker, but being different (i.e., not of the same culture or having an atypical speech style) is more socially unacceptable, resulting in stronger social bias.

Implicit Measure

Recall that the implicit measure was AUC, which provided a measure of cognitive pull - such that, when there was pull toward an unchosen response option there would be more cognitive competition (i.e., the larger the AUC value, the stronger the competition) as reflected by a negatively signed AUC value. Alternatively, when there was pull toward the chosen response option there would be less cognitive competition and a stronger bias (i.e., the larger the positive value, the stronger the bias) for the chosen response as reflected by a positively signed AUC value. It is hypothesized that when listeners are more easily able to engage in common social heuristics (e.g., stuttering is really just cognitive difficulty finding words; Brown-Schmidt et al., 2008; Clark & Fox Tree, 2002; or speaking a second language is hard; Crowthere et al., 2023; Gibson et al., 2017; Hanuliková et al., 2012; Munro & Derwing, 2011), cognition may rely on heuristics, making cognition easier – as reflected by less cognitive competition in their action dynamics. Consistent with the study hypothesis, there were two listening contexts that resulted in less cognitive competition (i.e., fluent, not grammatical; stutter grammatical). There were also two listening conditions that recruited more cognitive competition (i.e., fluent, grammatical; stutter not grammatical). The implications are considered next.

With regard to the implicit measure of cognition, for grammatically and fluent utterances, response trajectories were pulled more strongly toward the option they did not select. This may have occurred if they had a negative mental representation of the people who stutter (PWS) (since more responses were reflective of a negative social judgment), and their speech was inconsistent with expectations – creating more cognitive pull. Participants treated the non-grammatical fluent utterances differently, as the response trajectories exhibited pull more strongly toward their final response. This may have occurred based on the non-grammatical

effect as a salient cue of the negative bias. Furthermore, grammatically stuttered utterance resulted in response trajectories reflecting a stronger pull toward their final response. This may have occurred due to the disfluency being a salient negative cue toward the final social judgment. Responses to the non-grammatically and stuttered utterances indicated a response trajectory that exhibited a pull strongly toward the non-selected response option. This may have occurred because participants may have anticipated a grammatical error after a disfluency, consistent with what a non-stuttered disfluency may sound like in everyday conversation. This creates a context where participants' mental representations of a typical disfluency compete with a stuttered disfluency. These results are consistent with dual process models of information processing that suggest triggering cues (i.e., salient cues in the environment, in this case the speech sample) that tell the cognitive system how to respond (Chaiken, 1980; Ferguson et al., 2019; Kleinschmidt et al., 2018; Lorenzoni et al., 2022; Roche et al., 2020; Ruivivar & Collins, 2018). It should be noted that the current sample was largely underpowered, and the results described here were descriptive only. Therefore, this interpretation should be taken cautiously and this is discussed as a major limitation of the current study in the next section.

Limitations & Future Directions

Though the results produce interesting findings, the current study is not without limitation. For instance, the current study suffered most due to lower than anticipated sample size. It was difficult to collect the sample size that we needed; we did not have enough participants in the subject pool—a longer data collection period would have permitted the collection of more data. This is a problem because it lowers the power potentially impacting statistical sensitivity and reducing generalizability. Despite the small sample size we obtained significant results that suggest that the observed effects are quite reliable and vital. In the future,

we will collect more data. Additionally, the sample was rather homogeneous. That is, most of the participants were White women which likely increased the out-group bias especially since the speakers were men, with only one speaker being American, the other speaker being Arabic, and both speakers stuttering (see Roche et al., 2021 for similar findings). In the future, we should attempt to avoid convenience sampling (e.g., not relying on college students) and eliciting data from larger online subject pools, such as MTurk and Prolific— but this will take time and funding. Finally, the study suffered from lack of ecological validity and mundane realism (i.e., people may not actually respond like this in the real world). In the future, we could choose data collection methods that are more realistic. However, we gained control in the current study, as we were able to directly test manipulations from the stimuli—which is not always possible or feasible in naturalistic contexts (i.e., too many confounds to control for; Mellinger & Hanson, 2002). Nevertheless, the findings from the current study provide insight on important socio-indexical cues that impact social judgements about people who stutter.

Conclusion

Acculturation, adapting to a new culture, involves navigating cues to fit into the host culture while preserving one's original identity (Clark, 1998; Kramsch, 2014). Language-related cues, such as accents, also impact communication. Depending on the context, they can either aid or restrict effective communication (Brown-Schmidt et al., 2008; Bucholtz, 1999; Eckert & Wenger, 2005; Ferguson et al., 2019; Kramsch, 2014; Niedzielski, 1999; Roche et al., 2020, 2021, 2023). In the current study, we found that even in reduced context, listeners adapt their interpretation based on these cues, but this is likely more complex in natural settings.

Acculturation often entails learning the host culture's language, affecting socio-cultural integration (Bucholtz, 1999; Ferguson et al., 2019; Kramsch, 2014). These cues (i.e., accent, and

disfluency) can trigger stereotypes and biases (Roche et al., 2020). Acculturation reveals individuals' biases from their original and host cultures as they evolve their socio-cultural identities (Sam et al., 2010). Acculturation fosters cultural exchange, with individuals blending aspects of their original culture into the host culture, marked by socio-indexical cues (Sam et al., 2010). For some, preserving their original culture remains a priority during acculturation. Recognizing and appreciating how socio-indexical cues contribute to cultural understanding, promoting diversity and inclusivity within multicultural societies (Kramsch, 2014). Understanding these cues and their connection to acculturation is essential for nurturing inclusive socio-cultural environments. Bias can emerge in interactions, as a lack of understanding about these communication differences may undervalue their perspectives (Clark, 1998; Karmsch, 2014; Roche et al., 2020). Challenges arise from misunderstandings about communication differences, perpetuating stereotypes, and bias (Clark, 1998; Karmsch, 2014; Niedzielski, 1999; Roche et al., 2020, 2021). To address this issue, promoting awareness, empathy, advocacy, and education is essential for fostering an inclusive and respectful environment (Clark, 1998; Karmsch, 2014). In summary, confronting stereotypes and bias in the context of communication disorders is crucial for ensuring fair treatment and opportunities, but this is also a very important mission of speech-language pathology.

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