



Perception of intelligibility and qualities of non-native accented speakers



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ABSTRACT

Purpose: To provide effective treatment to clients, speech-language pathologists must be understood, and be perceived to demonstrate the personal qualities necessary for therapeutic practice (e.g., resourcefulness and empathy). One factor that could interfere with the listener's perception of non-native speech is the speaker's accent. The current study explored the relationship between how accurately listeners could understand non-native speech and their perceptions of personal attributes of the speaker. Additionally, this study investigated how listeners' familiarity and experience with other languages may influence their perceptions of non-native accented speech.

Methods: Through an online survey, native monolingual and bilingual English listeners rated four non-native accents (i.e., Spanish, Chinese, Russian, and Indian) on perceived intelligibility and perceived personal qualities (i.e., professionalism, intelligence, resourcefulness, empathy, and patience) necessary for speech-language pathologists.

Results: The results indicated significant relationships between the perception of intelligibility and the perception of personal qualities (i.e., professionalism, intelligence, and resourcefulness) attributed to non-native speakers. However, these findings were not supported for the Chinese accent. Bilingual listeners judged the non-native speech as more intelligible in comparison to monolingual listeners. No significant differences were found in the ratings between bilingual listeners who share the same language background as the speaker and other bilingual listeners.

Conclusions: Based on the current findings, greater perception of intelligibility was the key to promoting a positive perception of personal qualities such as professionalism, intelligence, and resourcefulness, important for speech-language pathologists. The current study found evidence to support the claim that bilinguals have a greater ability in understanding non-native accented speech compared to monolingual listeners. The results, however, did not confirm an advantage for bilingual listeners sharing the same language backgrounds with the non-native speaker over other bilingual listeners.

1. Introduction

1.1. Linguistic diversity

The number of individuals from diverse linguistic backgrounds living in the United States (U.S.) increased from 9.6 million in

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1970 to 42.4 million in 2014 (Batalova & Terrazas, 2016). Today, approximately 37% of the 300 million people who reside in the U.S. belong to culturally and linguistically diverse populations (Bernstein, 2012). Approximately 1 in 5 people over the age of 5 come from a household where a different language is spoken (Bernstein, 2012). Due to an increase in linguistic diversity, it is highly likely that speech-language pathologists (SLPs) will be non-native English speakers from culturally and linguistically diverse backgrounds. Hence, it is important to understand how their clients perceive the intelligibility of accented speech and ascribe personal qualities to those SLPs.

1.2. Variation in accented speech

According to the American Speech-Language-Hearing Association (American Speech-Language-Hearing Association, 2017), an accent is a particular way in which speech is pronounced by people speaking the same language. Accents are contingent upon many circumstances but are usually categorized in two ways: foreign or regional. Regional accents refer to how people speak in a particular location (Labov, Ash, & Boberg, 2005; Sikorski, 2005). For example, individuals from New York may sound different compared to others living in the South or West of the U.S. In contrast, those with foreign accents/non-native accents impose speech characteristics of their first language onto another language (American Speech-Language-Hearing Association, 2017). The transfer of first language (L1) speech characteristics onto second language (L2) will result in “accented” speech (Gilakjani & Ahmadi, 2011). However, speakers of the same native language can vary in their L2 speech due to the differences between dialects (e.g., final consonants are more frequently omitted in Puerto Rican Spanish compared to Mexican Spanish; Guitart, 1978, 1996).

1.3. Accentedness, comprehensibility, and intelligibility

The three aspects that can be used to measure non-native speakers’ communicative effectiveness are accentedness, comprehensibility, and intelligibility (e.g., Behrman & Akhund, 2013; Derwing & Munro, 1997). Accentedness is defined as the listener’s perception of how precisely the speaker pronounces an utterance in comparison to native speech (Munro & Derwing, 1995b), which is impacted by factors that are attributed to the speaker such as the age of acquisition and use of L2 (Piske, MacKay, & Flege, 2001), phonetic and/or phonemic accuracy (Munro & Derwing, 1995b), and/or suprasegmental features (Chen, 2010). Comprehensibility is the listener’s perception of how difficult an utterance is to understand and is correlated with the processing time of speech (e.g., Gass & Varonis, 1984; Munro & Derwing, 1995). Distinct from comprehensibility, which pertains to *how easily* the message is understood, intelligibility refers to how accurately the speech is understood (Derwing & Munro, 1997). Intelligibility is how accurately a native listener understands the speaker’s utterance and intended message (Derwing & Munro, 1997).

Intelligibility is known to be difficult to measure (Coplan & Gleason, 1988; Flipsen, 2006; Kent, Miolo, & Bloedel, 1994), as it is a listener’s perceptual judgment based on a range from unintelligible to intelligible speech (Bernthal, Bankson, & Flipsen, 2017). Although listener transcriptions of a speech sample are often used to measure intelligibility (e.g., Bent & Bradlow, 2003; Derwing & Munro, 1997; Wolfram & Schilling-Estes, 2006), alternative methods such as Likert scales (e.g., 5-point and 6-point scale) have been used to obtain perceptual judgments of intelligibility (e.g., Amaro, Flynn, & Rothman 2012; Christiansen, 2014). In addition, other researchers have used scales that represent two ends of a continuum to rate intelligibility (e.g., Anand & Stepp, 2015).

1.4. Perception of non-native speech

Many studies have investigated the perception of non-native speech (Cargile, 1997; Flege, 1984; Giles, 1971; Levi, Winters, & Pisoni, 2007; Moyer, 2007; Munro & Derwing, 1995b). Research has also examined how perception and attitudes might change due to factors attributed to the speaker, such as degree of accentedness and intelligibility (e.g., Munro & Derwing, 1995a), a type of non-native accent (e.g., Giles & Sassoon, 1983; Stewart & Ryan, 1985), and appearance associated with accents (e.g., Rubin & Smith, 1990).

Tsurutani (2012) reported that when a speaker had a heavier Australian or British accent in Japanese, the speaker was given lower ratings for personal attributes (e.g., intelligence, competence, patience). These results suggested the impact of accentedness on perception of personal attributes towards non-native speakers. Other researchers have also suggested that greater accentedness impacts a person’s credibility (Lev-Ari & Keysar, 2010) and teaching abilities (Rubin & Smith, 1990). Moreover, Carlson and McHenry (2006) reported that the ethnicity of people perceived by human resource specialists did not impact employability of the job applicants, but the degree of perceived accentedness of the applicants’ speech did influence their employability. When job applicants were perceived to have minimal accents, their employability ratings did not change regardless of their ethnicity or type of accent presented. However, in the presence of stronger accents, the human resource specialists rated the job applicants lower on the employability scale. In this case, the job title was not specified, and the job applicants’ qualifications were assumed to be equal for the position (Carlson & McHenry, 2006). This literature provides evidence that the speaker’s accentedness play an important role in the listener’s perception and attitudes towards accented speech.

Another possible factor, which may influence perception of non-native speech, would be appearance and background knowledge of the speaker. Rubin and Smith (1990) showed that when accented speech was presented with a picture that clearly indicated the ethnicity of the speaker, the same speech sample was rated as more accented when matched with the photograph of an Asian person rather than with that of a Caucasian person. Moreover, when American-accented and non-native speakers (e.g., Korean-accented English speaker) were presented as doctors, the American-accented speech was preferred over the Korean-accented sample (Pantos & Perkins, 2013). These findings showed that visual stimuli (e.g., speakers’ photographs) or background knowledge about the speakers

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