

Native and non-native listeners' evaluation of degrees of foreign accentedness in English: A literature review¹

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Abstract

Communication in English increasingly involves non-native speakers. Such speakers can speak English with different degrees of non-native accentedness. In order to contribute to insights into the effects that these differences in accentedness can have on listeners, the current study systematically reviews experimental studies into the effects of degrees of foreign accentedness in English. It presents an overview of the L1s of the speakers, nationalities of the listeners, degrees of accent strength tested, dependent variables and outcomes in the studies reviewed. The trend that emerges from the studies included in the review indicates that stronger accents generally have more negative effects on understanding and attitudinal evaluations than weaker accents.

Keywords: foreign-accented English, accent strength, non-native speakers

Introduction

With the growing numbers of non-native speakers of English worldwide (Crystal, 2003), interactions involving individuals whose English reflects characteristics of their own L1 backgrounds occur more frequently. Such individuals can have different degrees of accentedness in their English, depending on factors including the number of years of language teaching they have received (Moyer, 1999) and their aptitude for mimicry (Purcell & Suter, 1980); for an overview of such factors, see Gluszek, Newheiser, and Dovidio (2011). The question is what the effects are of such different degrees of non-native accentedness in English on the interlocutor and on the success of interactions involving non-native speakers of English, for instance in terms of impact on the listener's understanding and attitudes towards the speaker.

Research into the effects of degrees of non-native accentedness began as early as the 1970s, with a study of evaluations of Spanish-English bilingual speakers in the US (Ryan, Carranza, & Moffie, 1977). Since then, articles reporting experimental research have briefly summarized research in the area (e.g. Cargile & Giles, 1998, p. 341; Dragojevic, Giles, Beck, & Tatum, 2017, pp. 386-387; Hendriks, van Meurs, & Hogervorst, 2016, p. 3; Hendriks, van Meurs, & de Groot, 2017, p. 47). However, there seems to be no detailed overview of research into the effects that degrees of non-native English accentedness might have on listeners. The current paper aims to present a systematic review of experimental studies testing the effect of foreign accent strength in English. For this review, we searched Google scholar using the keywords 'accent strength' and 'degrees of accentedness', and we consulted

¹ We thank Sjoerd Lindenburg and Dick Smakman for their helpful comments on an earlier version of this article. We also thank Michael Snijders for his help in revising the article.

the lists of references in the articles we found in our initial search. Because of the focus in this review on studies investigating foreign accent strength in English, we do not review studies about the effects of foreign accent strength in other languages (e.g. for German, Mai, Hoffmann, & Müller, 2009; for Swedish, Cunningham-Andersson, & Engstrand, 1989; for Spanish, French or German, part of Hendriks et al., 2017), or of dialectal accent strength in English (for Southern Welsh and Somerset English regional dialects, Giles, 1972). Neither do we review studies of ethnic accent strength in English (for Mexican American English, Brennan & Brennan, 1981; for Spanish-accented English, Ryan, Carranza, & Moffie, 1977; for Spanish-influenced English, Asian-influenced English and African-American vernacular English, Carlson & McHenry, 2006; for Italo-Australian and Viet-Australian English, Nesdale & Rooney, 1990, 1996). As Wardhaugh and Fuller (2015, p. 45) remark, "... ethnic dialects are not simply foreign accents of the majority language, as many of their speakers may well be monolingual speakers of the majority language. Chicano English, for example, is not English with a Spanish accent and grammatical transfer, as many of its speakers are not Spanish speakers but English monolinguals. Ethnic dialects are ingroup ways of speaking the majority language." In addition, and perhaps more importantly for listeners' evaluations, speakers of ethnic accents are speakers belonging to minority groups who live in the country where the language is spoken, and as such may evoke different reactions on the part of other inhabitants of the country (e.g. attitudinal evaluations based on stereotypes) than speakers who do not live in the country where the language is spoken, for instance because their presence in the country is more strongly felt. Since our review focuses on the effects of degrees of accentedness on listeners, we do not report the effects of independent variables other than accent strength included in the studies under review, such as instructor ethnicity (Rubin & Smith, 1990), lecture topic (Rubin & Smith, 1990), speech content (Cargile & Giles, 1998), or speaker's role (Bresnahan, Ohashi, Nebashi, Liu, & Shearman, 2002).

Analysis of experimental studies

In reporting on the experimental studies that were selected for this review, we discuss the following aspects: the L1 of the non-native speakers of English (NNE speakers), the nationality of the listeners, the degrees of NNE accent strength tested in the study, the dependent variables, and the effects the studies report. The analysis is summarized in Table 1, which can be found at the end of this article.

The L1s of the NNE speakers studied are Chinese, Dutch, Japanese, Korean, Mandarin, Punjabi, Saudi Arabian, and unidentified L1s (the latter in Bresnahan et al., 2002). The L1s studied reflect speakers from different continents (Europe, Asia), but a limited number of languages per continent.

The listeners who evaluated the NNE speakers comprised two main groups: native speakers of British or American English and a variety of NNE listeners (Albanian, Algerian, Bangladeshi, Chinese, Dutch, Ethiopian, Finnish, French, German, Greek, Jordanian, Korean, Malaysian, Nigerian, Norwegian, Polish, Spanish, Saudi Arabian, Sri Lankan, and Thai). The majority of these studies involved native English listeners, but these were only from two inner-circle countries (Kachru, 1992), i.e. Great Britain and the USA. The studies have involved a wide range of NNE listeners from various countries, but it should be noted that the majority of listeners with different L1 backgrounds were included in one study, in which they were only represented by one or two listeners (Stibbard & Lee, 2006). In two studies, the listener groups included listeners who shared the same L1 background as the speakers they evaluated (Dutch: Hendriks et al., 2016; Korean, Saudi-Arabian: Stibbard & Lee, 2006).

Degree of accentedness was operationalized in different ways in the studies in this review and was generally predetermined by expert judges and confirmed by manipulation checks among the participants in the experiments. The majority of the studies included a native variety as a baseline (except Dragojevic et al., 2017; Rubin & Smith, 1990). Most studies included two degrees of non-native

accentedness (moderate/slight, strong/slight, moderate/high or heavy/mild, unintelligible/intelligible, or low/high proficiency).

Dependent variables included to measure the effects of accentedness can be categorised in two groups: those measuring understanding and those measuring attitudinal evaluations of the speaker. Understanding was measured with functional measures and with perceptual measures. Functional measures include intelligibility, comprehensibility and interpretability. For intelligibility, listeners are asked to write down what they hear (Nejjari, Gerritsen, van der Haagen, & Korzilius, 2012; Rubin & Smith, 1990; Stibbard & Lee, 2006). For comprehensibility, listeners are tested on their understanding of the content of the message (Nejjari et al., 2012). For interpretability, listeners are tested on their understanding of the purpose of the message (Nejjari et al., 2012). Perceptual measures of understanding include perceived comprehensibility of recording and speaker, that is, items asking listeners how well they feel/think they comprehend the recording and the speaker (Hendriks et al., 2016; Hendriks et al., 2017).

Attitudinal evaluations measured in the studies generally included variables measuring impressions of the speaker on two broad dimensions: “personal capabilities” (cf. Stern, 2000, p. 421) and “personality traits” (cf. Ajzen, 1987, p. 21). Personal capabilities “include the knowledge and skills required for particular actions [...], the availability of time to act, and general capabilities and resources such as literacy, money, and social status and power” (Stern, 2000, p. 417). Personality traits can be defined as “relatively enduring behavioral dispositions” (Ajzen, 1987, p. 2). Evaluations of personal capabilities were measured with perceptual measures such as status of the speaker (Bresnahan et al., 2002; Cargile & Giles, 1998; Dragojevic et al., 2017; Hendriks et al., 2017; Nejjari et al., 2012), competence of the speaker (Hendriks et al., 2016; Hendriks et al., 2017), and teaching ability (Rubin & Smith, 1990). Evaluations of personality traits were measured with perceptual variables such as affect (Dragojevic et al., 2017; Hendriks et al., 2017; Nejjari et al., 2012), arousal (Bresnahan et al., 2002), attractiveness (Bresnahan et al., 2002; Cargile & Giles, 1998), dependability (Hendriks et al., 2016), dominance (Bresnahan et al., 2002,) dynamism (Bresnahan et al., 2002, Cargile & Giles, 1998), likeability (Hendriks et al., 2016), pleasantness (Bresnahan et al., 2002), and solidarity (Dragojevic et al., 2017).

Effects of degrees of accentedness on understanding and attitudes

Findings for the effects of accent strength as reported in the studies in this review will be presented below from three different angles: a comparison of accent strength (stronger, weaker, native), the listener group (native, non-native) and the dependent variables measured (understanding, attitudes).

Stronger accents compared to native accents

Understanding

For native listeners, stronger accents were generally found to impede understanding compared to native accents (intelligibility, comprehensibility: Nejjari et al., 2012; intelligibility: Stibbard & Lee, 2006) but not for all variables measured (interpretability: Nejjari et al., 2012). Non-native listeners were, similarly, found to understand speakers with stronger accents less well than speakers with a native accent (perceived comprehensibility: Hendriks et al., 2016; intelligibility: Stibbard & Lee, 2006), although this was not the case in all studies (Hendriks et al., 2017). There was no difference in perceived comprehensibility as evaluated by non-native listeners between speakers with a stronger accent and speakers with a native accent as studied in Hendriks et al. (2017).

Attitudes

Native listeners evaluated speakers with stronger accents more negatively than they did speakers with native accents on personal capabilities (status: Bresnahan et al., 2002; Nejjari et al., 2012), although this was not found in all studies (Cargile and Giles, 1998, found no difference in status between speakers with a moderate Japanese English and a native English accent). Similarly, non-native listeners evaluated speakers with stronger accents more negatively than they did than speakers with native accents on personal capabilities (status, competence: Hendriks et al., 2016; Hendriks et al., 2017), but such differences were not found for all variables in all studies (Hendriks et al., 2017, found no difference in status between speakers with a strong Dutch English accent, a slight Dutch English accent and a native English accent).

For native listeners, stronger accents were found to lead to more negative evaluations than native accents in terms of speakers' personality traits in all studies (dynamism, attractiveness, pleasantness, arousal, dominance: Bresnahan et al., 2002; attractiveness, dynamism: Cargile & Giles, 1998; affect: Nejjari et al., 2012; solidarity). Non-native listeners, however, did not evaluate personality traits differently for speakers with stronger accents than for speakers with native accents (affect: Hendriks et al., 2017; likeability, dependability: Hendriks et al., 2016).

Stronger accents compared to weaker accents

Understanding

For native listeners, some studies showed that stronger non-native accentedness impeded understanding more than weaker non-native accentedness (Dragojevic et al., 2017; Stibbard & Lee, 2006), but this was not found in all studies (Nejjari et al., 2012; Rubin & Smith, 1990). Nejjari et al. (2012) found no difference in intelligibility, comprehensibility and interpretability of slightly and moderately Dutch-accented English as evaluated by British native speakers, and Rubin and Smith (1990) found no differences in scores on a cloze test of listening comprehension between moderately and highly Chinese-accented English as evaluated by American native speakers. For non-native listeners, stronger accents were in some studies found to be more difficult to understand than weaker accents (Hendriks et al., 2016; Stibbard & Lee, 2006), but this was not always found to be the case (Hendriks et al., 2017). Hendriks et al. (2017) showed that there were no differences between strongly and slightly Dutch-accented English speakers in perceived comprehensibility of the speaker and of the recording as evaluated by French, German and Spanish listeners.

Attitudes

Speakers with stronger accents were in some studies evaluated more negatively than speakers with weaker accents by native listeners on personal capabilities (status: Bresnahan et al., 2002; Cargile & Giles, 1998; Dragojevic et al., 2017), but other studies showed that native listeners did not evaluate the personal capabilities of speakers with stronger and weaker accents differently (status: Nejjari et al., 2012; teaching ability: Rubin & Smith, 1990). Non-native listeners sometimes evaluated speakers with stronger accents more negatively on personal capabilities than speakers with weaker accents (competence: Hendriks et al., 2016; 2017), but again not on all variables in all studies. Hendriks et al. (2017) found that the status of speakers with a strong and a slight Dutch accent in English was not evaluated differently by French, German and Spanish listeners.

With regard to personality traits, native listeners in some studies also evaluated speakers with stronger accents more negatively than speakers with weaker accents (dynamism, attractiveness,

pleasantness, arousal, dominance: Bresnahan et al., 2002; attractiveness: Cargile & Giles, 1998; affect: Nejjari et al., 2012; affect: Dragojevic et al., 2017), but in other studies no such differences were found (dynamism: Cargile & Giles, 1998; solidarity: Dragojevic et al., 2017). Non-native listeners evaluated speakers with stronger accents more negatively on one personality trait than speakers with weaker accents (dependability: Hendriks et al., 2016), but on other personality traits they did not evaluate speakers with weaker and stronger accents differently (affect: Hendriks et al., 2017; likeability: Hendriks et al., 2016).

Weaker accents compared to native accents

Understanding

Native listeners in two studies evaluated speakers with weaker accents as equally understandable as speakers with native accents (interpretability: Nejjari et al., 2012; intelligibility: Stibbard & Lee, 2006), although in one study they evaluated speakers with weaker accents as less understandable than speakers with native accents (in terms of intelligibility and comprehensibility: Nejjari et al., 2012). Non-native listeners evaluated speakers with weaker accents as equally understandable as speakers with a native accent (perceived comprehensibility: Hendriks et al., 2016; Hendriks et al., 2017; intelligibility: Stibbard & Lee, 2006).

Attitudes

Native listeners evaluated a personal capability of speakers with weaker accents similarly to those of speakers with a native accent in two studies (status: Bresnahan et al., 2002; Cargile & Giles, 1998), although in one study the same personal capability of speakers with weaker accents was found to be evaluated more negatively (status: Nejjari et al., 2012). Non-native listeners evaluated the personal capabilities of speakers with weaker accents similarly to those of speakers with a native accent (status: Hendriks et al., 2017; competence: Hendriks et al., 2016).

Native listeners evaluated speakers with weaker accents similarly to speakers with native accents on some personality traits (dynamism, attractiveness, pleasantness: Bresnahan et al., 2002; affect: Nejjari et al., 2012), although they did evaluate speakers with weaker accents more negatively on other personality traits (arousal, dominance: Bresnahan et al., 2002; attractiveness, dynamism: Cargile & Giles, 1998). Non-native listeners evaluated speakers with weaker accents similarly to speakers with a native accent on some personality traits (affect: Hendriks et al., 2017; dependability: Hendriks et al., 2016), and more positively on one personality trait (likeability : Hendriks et al., 2016).

Conclusion and discussion

The aim of the current paper was to present an overview of experimental studies into the effects that different degrees of non-native accents in English can have on listeners. A literature search revealed only a small number of such studies, that is, eight over a forty-year period. These studies were conducted for speakers with a range of different L1s from different countries on different continents, but with a limited number of languages per continent. The speakers' degrees of accentedness ranged from strong to native. The listeners in the studies in this review were found to be limited to two groups of native speakers of English (British and American) and a larger representation of non-native speakers of different nationalities. The dependent variables comprised variables measuring understanding and variables measuring attitudinal evaluations (both personal capabilities and personality traits).

Overall, the findings in the various studies reviewed indicate that, although there is variation, speakers with stronger degrees of accentedness tend to be evaluated less positively than speakers with weaker degrees of accentedness and native speakers, both with regard to understanding and attitudinal evaluations. Speakers with weaker accents are generally evaluated similarly to speakers with native accents. In general, evaluations of degrees of foreign accentedness were similar for native and non-native listeners. However, there were exceptions to this general picture. Some studies showed that speakers with stronger accents were evaluated similarly to speakers with native accents and to speakers with weaker accents, and that speakers with weaker accents were evaluated more negatively and in one case more positively than speakers with native accents. Native listeners were found to evaluate personality traits of speakers with strong accents more negatively than those of native speakers, while non-native listeners did not evaluate personality traits of speakers with strong accents differently from those of native speakers. Native listeners also evaluated speakers with weaker accents more negatively than they did speakers with native accents on some personality traits, while non-native listeners were not found to evaluate personality traits of speakers with weaker accents more negatively than those of speakers with a native accent.

The general finding that stronger accents lead to more negative evaluations than weaker accents and native accents is in line with the earlier summaries of research into the effects of degrees of accentedness (e.g. Cargile & Giles, 1998, p. 341; Dragojevic et al., 2017, pp. 386-387; Hendriks et al., 2016, p. 3; Hendriks et al., 2017, p. 47). As Dragojevic et al. (2017, p. 387) put it: "In general, the stronger a speaker's foreign accent is, the more negatively he or she tends to be evaluated". The contribution of the current literature review is that it has covered more studies than these earlier summaries, that it has specified the variables for which the general effect has been found, and has nuanced the generalisability of this effect by pointing out in what cases it was not found.

In light of the overall finding that stronger non-native accents tend to have more negative effects than slight non-native accents, for both native and non-native listeners, it can be concluded that pronunciation training should aim at helping learners of English to reduce features of strong non-native accentedness.

The review has revealed two shortcomings of the research into the effects of degrees of non-native accentedness in English. Firstly, although the research has included a range of different L1 speakers from different continents, speakers from the African continent appear to have been neglected to date. Secondly, the native listeners included in the studies in this field have to date been limited to British and American native speakers. These shortcomings should be addressed in future studies by widening the speaker and listener groups to include L1 speakers from various countries in Africa and native listeners from inner-circle countries other than Great Britain and the USA.

When conducting the review, we encountered an issue that might pose problems relating to the consistency of our analysis: the operationalization of accent strength in the different studies. Some studies explicitly use different criteria (e.g. intelligible/unintelligible in Bresnahan et al., 2002, versus strong/moderate/slight in other studies). However, even when studies use the same terminology, the accent strength was determined by different judges and consequently may have been labelled differently. What is termed 'strong' in one study might have been termed 'moderate' in another study. Future studies should aim at developing objective criteria for distinguishing different degrees of accentedness, if this is at all possible.

A limitation of the current review is that we only included understanding and two types of attitudes (personal capabilities and personality traits) as dependent variables in our narrative review. Some studies also included other types of measures, such as perceived physical attractiveness, homophily (similarity to the listener), perceived ethnicity (Rubin & Smith, 1990), and prototypicality ("the degree to which the person is perceived to 'fit' the defining features associated with a given

group”; Dragojevic et al., 2017, p. 388). These other measures could also usefully be included in a consideration of the effects of degrees of accentedness.

Another limitation of the current review relates to the selection of studies included. We decided to exclude studies that did not investigate foreign but ethnic accent strength. However, the distinction between foreign and ethnic accents is difficult to make, since ultimately an ethnic group originates from a different country than the one in which it currently resides. While we, for instance, considered Spanish accents in the USA to be ethnic accents, since they could be construed to be the accents of Hispanics living in the USA, Dragojevic et al. (2017, p. 387) label Spanish accents in the US as foreign accents. Further experimental studies should examine whether listeners evaluate degrees of accentedness differently depending on whether they see the speakers as belonging to an ethnic group living in their country or as living in a different country. A future literature review should analyse all studies of the effects of accent strength, ethnic, foreign as well as regional (16 to date), to determine to what extent there are common patterns and differences between different types of accent strength. Such a literature review could include a meta-analysis to investigate statistical differences in effects between types of speaker, types of listener and types of dependent variable in the various studies.

A final suggestion for further research relates to the underlying reasons for the findings in the studies reviewed that stronger foreign accents are usually, but not always, evaluated more negatively than weaker foreign accents. Dragojevic et al. (2017) showed that the negative effects of accent strength were not explained (that is, mediated) by the prototypicality of a degree of accentedness, but by the processing fluency associated with the degree of accentedness (measured as perceived comprehensibility). However, this explanatory role of processing fluency would not appear to account for cases in which stronger accents led to more negative attitudinal evaluations but not to less perceived comprehensibility when compared to weaker accents (Hendriks et al., 2017). Future research should attempt to further explore possible underlying reasons for differences and similarities in evaluations of stronger versus weaker accents, for instance by including open-ended questions about why listeners respond to a certain accent in a particular way, or by asking them to write down their associations with a particular accent.

References

- Ajzen, I. (1987). Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology. *Advances in Experimental Social Psychology*, 20, 1-63.
- Brennan, E. M., & Brennan, J. S. (1981). Accent scaling and language attitudes: Reactions to Mexican American English speech. *Language and Speech*, 24(3), 207-221. doi:10.1177/002383098102400301
- Bresnahan, M. J., Ohashi, R., Nebashi, R., Liu, W. Y., & Shearman, S.M. (2002). Attitudinal and affective response toward accented English. *Language & Communication*, 22(2), 171-185. doi:10.1016/S0271-5309(01)00025-8
- Cargile, A. C., & Giles, H. (1998). Language attitudes toward varieties of English: An American Japanese context. *Journal of Applied Communication Research*, 26(3), 338-356. doi:10.1080/00909889809365511
- Carlson, H. K., & McHenry, M. A. (2006). Effect of accent and dialect on employability. *Journal of Employment Counseling*, 43(2), 70-83. doi:10.1002/j.2161-1920.2006.tb00008.x
- Crystal, D. (2003). *English as a global language*. Cambridge: Cambridge University Press.
- Dragojevic, M., Giles, H., Beck, A. C., & Tatum, N. T. (2017). The fluency principle: Why foreign accent strength negatively biases language attitudes. *Communication Monographs*, 84(3), 385-405. DOI: 10.1080/03637751.2017.1322213

- Cunningham-Andersson, U., & Engstrand, O. (1989). Perceived strength and identity of foreign accent in Swedish. *Phonetica*, 46(4), 138–154. doi:10.1159/000261839
- Fuller, J. M., & Wardhaugh, R. (2015). *An introduction to sociolinguistics* (7th ed.) Malden: John Wiley & Sons.
- Giles, H. (1972). The effect of stimulus mildness-broadness in the evaluation of accents. *Language and Speech*, 15(3), 262-269.
- Gluszek, A., Newheiser, A.-K., & Dovidio, J. F. (2011). Social psychological orientations and accent strength. *Journal of Language and Social Psychology*, 30(1), 28-45.
- Hendriks, B., van Meurs, F., & de Groot, E. (2017). The effects of degrees of Dutch accentedness in ELF and in French, German and Spanish. *International Journal of Applied Linguistics*, 27(1), 44-66. doi:10.1111/ijal.12101
- Hendriks, B., van Meurs, F., & Hogervorst, N. (2016). Effects of degree of accentedness in lecturers' Dutch-English pronunciation on Dutch students' attitudes and perceptions of comprehensibility. *Dutch Journal of Applied Linguistics*, 5(1), 1-17. doi:10.1075/duja.5.1.01hen
- Kachru, B. B. (1992). Teaching World Englishes. In B. B. Kachru (Ed.), *The other tongue: English across cultures* (pp. 355-366). Urbana, IL: University of Illinois Press.
- Mai, R., Hoffmann, S., & Müller, S. (2009). Die asymmetrische Wirkung eines Akzents in der Werbung. *Marketing ZfP*, 31(4), 255-265.
- Moyer, A. (1999). Ultimate attainment in L2 phonology: The critical factors of age, motivation and instruction. *Studies in Second Language Acquisition*, 21(1), 81–108.
- Nejjari, W., Gerritsen, M., van der Haagen, M., & Korzilius, H. (2012). Responses to Dutch-accented English. *World Englishes*, 31(2), 248-267. doi:10.1111/j.1467-971X.2012.01754.x
- Nesdale, A. R., & Rooney, R. (1990). Effect of children's ethnic accents on adults' evaluations and stereotyping. *Australian Journal of Psychology*, 42(3), 309-319.
- Nesdale, D., & Rooney, R. (1996). Evaluations and stereotyping of accented speakers by pre-adolescent children. *Journal of Language and Social Psychology*, 15(2), 133-154.
- Purcell, E. T., & Suter, R. W. (1980). Predictors of pronunciation accuracy: A reexamination. *Language Learning*, 30(2), 271-287.
- Rubin, D. L., & Smith, K. A. (1990). Effects of accent, ethnicity, and lecture topic on undergraduates' perceptions of nonnative English-speaking teaching assistants. *International Journal of Intercultural Relations*, 14(3), 337-353.
- Ryan, E. B., Carranza, M. A., & Moffie, R. W. (1977). Reactions toward varying degrees of accentedness in the speech of Spanish-English bilinguals. *Language and Speech*, 20(3), 267-273. doi:10.1177/002383097702000308
- Stern, P. C. (2000). New environmental theories: Toward a coherent theory of environmentally significant behavior. *Journal of Social Issues*, 56(3), 407-424.
- Stibbard, R. M., & Lee, J.-I. (2006). Evidence against the mismatched interlanguage speech intelligibility benefit hypothesis. *The Journal of the Acoustical Society of America*, 120, 433-442. doi:10.1121/1.2203595

TABLE 1. Summary of analysis of experimental studies on effects of foreign accent strength in English on listeners

Authors	L1	listeners	Accent strength	Dependent variables	Effects
Bresnahan et al. (2002)	NNE	NS American English	unintelligible, intelligible, native	Status, dynamism, attractiveness, pleasantness, arousal and dominance	Status, dynamism, attractiveness, pleasantness, arousal: unintelligible < native, unintelligible < intelligible dominance: intelligible < native, unintelligible < native unintelligible < intelligible
Cargile & Giles (1998)	Japanese	NS American English	Moderate, strong, strong & disfluent, native	Attractiveness, status, dynamism	Attractiveness: Strong = strong/disfluent < moderate < native Status: Strong = strong/disfluent < moderate Dynamism: Strong = strong/disfluent; moderate < native;
Dragojevic, Giles, Beck & Tatum (2017)	Mandarin, Punjabi	NS American English	Mild, heavy	Negative affect, positive affect, status, solidarity, processing fluency, prototypicality	Affect: heavy < mild Status: heavy < mild Solidarity: heavy = mild Processing fluency: heavy < mild Prototypicality: heavy more than mild
Hendriks, van Meurs, & de Groot (2017)	Dutch	NS French, NS German, NS Spanish	Strong, slight, native	perceived comprehensibility speaker/recording, status, competence affect	perceived comprehensibility: strong = slight = native Status: strong < native (NS German) Competence: strong < slight/native
Hendriks, van Meurs, & Hogervorst (2016)	Dutch	NS Dutch	Moderate, slight, native	perceived comprehensibility, competence, likeability, dependability	perceived comprehensibility: moderate < slight/native competence: moderate < slight/native likeability: slight > native dependability: slight > native
Nejjari, Gerritsen, van der Haagen, & Korzilius (2012)	Dutch	NS English	Moderate, slight, native	Intelligibility, comprehensibility, interpretability, status, affect	Intelligibility: moderate = slight < native Comprehensibility: moderate = slight < native Interpretability: moderate = slight = native Status: moderate = slight < native Affect: moderate < slight = native
Rubin, & Smith (1990)	Chinese	NS American English	Moderate, high	Listening comprehension, homophily, perceived physical attractiveness, perceived ethnicity, perceived overall teaching ability	Listening comprehension: moderate = high Homophily: moderate = high Perceived physical attractiveness: moderate = high Perceived ethnicity: high more oriental than moderate Perceived accent: moderate = high

Stibbard & Lee (2006)	Korean, Saudi Arabian	NS Korean, NS Saudi Arabian, NS English, NNS mixed L1s (Albanian, Algerian, Bangladeshi, Chinese, Ethiopian, Finnish, Greek, Jordanian, Malaysian, Nigerian, Norwegian, Polish, Sri Lankan, Thai)	Low proficiency, high proficiency, native	Intelligibility	Low proficiency < high proficiency, native for NS English and mixed NNE listeners and mismatched listeners High proficiency = native
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Note: L1 = native language; NS = native speaker; NNS = non-native speaker; < = worse than; > = better than; = = equal to