RETHINKING THE MULTILINGUAL ADVANTAGE IN ACCENT PERCEPTION: MIXED-EFFECTS EVIDENCE FROM L1 LISTENERS

Francesca Grixoni, Northern Arizona University
Alexander Holmberg, Northern Arizona University

This study examines whether multilingual experience might provide a general listening advantage for first language (L1) English users across multiple English accents. To address this, we analyze two constructs of listening: perceived ease of understanding (comprehensibility) and word recognition (intelligibility) for L1 English listeners who self-reported as monolingual or multilingual. Listeners rated the comprehensibility of longer passages and transcribed short sentences produced by speakers representing General American (GA), Regional American (Texas: TX), General British (GB), Regional British (Newcastle: RB), and Ghanaian English (GN). Mixed-effects analyses revealed a clear accent effect on comprehensibility (GA > others) with no main effect of multilingualism and no interaction between the variables of accent and multilingualism. For intelligibility, we observed a strong accent effect and a significant accent and multilingualism interaction. Monolinguals performed better on the intelligibility task, although not statistically significant on familiar/standard accents (GA, GB), whereas multilinguals showed a nonsignificant advantage on less-familiar accents (GN, RB). These findings signify that multilingual status may not be an important variable for listening comprehension and intelligibility, especially compared to previous research findings on accent familiarity, contact hypothesis, and cognitive dissonance approaches.

INTRODUCTION

The ability to listen, both in a first language (L1) and a second language (L2), is an important skill (e.g., Buck, 2001) and a rather difficult one to acquire and maintain (Clarke & Garrett, 2004). The complexities of listening lie in its inherent nature: Speech is fast, continuous, and transient (Bloomfield et al., 2010). These challenges are amplified by external factors such as the presence of unfamiliar speaker accents (Bent & Bradlow, 2003). Non-native accents can contribute to worsened or unfamiliar listening conditions, potentially adding to cognitive processing demands (Mattys et al., 2012, p. 955).

These factors are particularly important to consider due to the rapid rise of English as a global medium of communication. This global use of English has resulted in a large number of English varieties, drawing interest across the field of applied linguistics on how speakers of different English varieties interact with each other. Kachru's (1985) model of World Englishes (i.e., inner, outer, and expanding circles) has been widely used to situate different English varieties not as deficient relative to native norms, but as outcomes of multilingual sociolinguistic dynamics (e.g., Adank et al., 2009).

And so, with a number of external factors affecting listening, along with the rise of global Englishes, the interaction between the two has generated much interest in the area of speech

Grixoni, F., & Holmberg, A. (2026). Rethinking the multilingual advantage in accent perception: Mixed-effects evidence from L1 listeners. In P. Trofimovich, A. Bodea, T.-N. N. Le, R. Suzuki, & C. Teló (Eds.), *Proceedings of the 16th Pronunciation in Second Language Learning and Teaching Conference* (pp. 1–15). Concordia University, Montreal, Canada, October 2025. https://doi.org/10.31274/psllt.21308

research (e.g., Jenkins, 2006). While there are a wide range of variables that can affect listening (e.g., accent familiarity, shared L1, vowel space, articulatory phenomena, prosody, phonotactics), the present study focuses on the listener's language background, in this case either monolingual or multilingual status. Some research comparing multilinguals to monolinguals has found that multilinguals may develop greater comprehension skills and are able to find accented speech more intelligible (Saito & Shintani, 2016). By conducting a comparative analysis of inner circle and outer circle accents on listening comprehension, this study aims to contribute to the broader discourse on World Englishes and accent variation.

LITERATURE REVIEW

Research on accent accommodation shows that listeners are able to adjust to variability in speech, whether it stems from unfamiliar talkers, regional variation, or non-native accents (Bent & Baese-Berk, 2021; Dahan et al., 2008; Kraljic & Samuel, 2007; Norris et al., 2003). Within the global context, this variability is the norm rather than the exception, and both speaker-related and listener-related factors systematically influence understanding (Saito et al., 2017). Yet comparatively fewer studies have directly contrasted how monolingual and multilingual L1 English listeners navigate this variability within English itself (Kraut & Wulff, 2013; Saito & Shintani, 2016), leaving open the question of whether multilingual experience can result in a listening advantage across accents.

With the possible effect of multilingual status in mind, the constructs of intelligibility and comprehensibility warrant discussion. The conceptualization of these two constructs, as well as their operationalization, has been a consistent source of discussion in the speech research community (see Kang et al., 2018). Some define intelligibility as recognition at the word/utterance level and comprehensibility as access to meaning (Smith & Nelson, 1985), whereas others have broadened these constructs (e.g., Munro & Derwing, 1995). These previous descriptions of comprehensibility still align with more recent summaries, which have also described comprehensibility as the perceived ease or difficulty of understanding (Verbeke & Simon, 2023), while pointing out that measurement can include effort or processing time. Because these constructs are operationalized with different tasks (e.g., dictation or keyword scoring for intelligibility vs. rating scales or processing-time measures for comprehensibility), studies can legitimately arrive at different patterns even when examining the same speech. Beyond these measurement choices, findings also vary for ecological reasons, accent familiarity and exposure, listeners' attitudes/stereotypes, and the specific testing context, which Major et al. (2002) review and document empirically in their TOEFL trial study (see their discussion of mixed results and the roles of familiarity and attitudes, pp. 174–177, 182–186).

Empirical results regarding the impact of multilingual status on listeners' adaptation to multiple accents tend to cluster around two patterns. The first emphasizes familiarity/exposure benefits. Studies show that prior exposure to a talker, an accent, or related lexical content improves performance (Gass & Varonis, 1984; Smith & Bisazza, 1982). Another example of this pattern is the interlanguage speech intelligibility benefit, where shared L1 backgrounds between talker and listener may facilitate processing (Bent & Bradlow, 2003; Major et al., 2002). Other findings indicate that listeners adapt quickly, sometimes within a minute, to novel accent features, with measurable gains in accuracy and reduced processing costs (Baese-Berk et al., 2013; Clarke &

Garrett, 2004). Familiarity effects also have been shown to scale with breadth of exposure: Listeners who have encountered multiple accents often show improved generalization to new speakers and varieties (Kennedy & Trofimovich, 2008).

The second pattern highlights native-accent preferences and mixed outcomes across L1/L2 contexts. Many studies report that Inner Circle varieties (i.e., American and British English) are rated as more comprehensible or are processed more efficiently than non-Inner Circle accents (e.g., Chinese, South African, and Mexican English), even when speakers are highly proficient (Kang et al., 2019). Preference can manifest as a performance advantage for "standard" or locally prestigious norms (Abeywickrama, 2013; Harding, 2008), and perceived accentedness itself can inhibit comprehension apart from strictly linguistic factors (Trofimovich & Isaacs, 2012). Still, findings are not uniform. Some work shows that listeners may perform as well or better with non-Inner Circle accents, particularly when exposure or shared phonological patterns align (Major et al., 2002; Van Wijngaarden et al., 2002). Moreover, listener attitudes and processing fluency biases can dampen evaluations of non-native speech, though exposure can mitigate these biases over time (Boduch-Grabka & Lev-Ari, 2021).

These two patterns of research findings connect to the variable of interest in the present study: the listener's linguistic background. Multilingual experience could plausibly enhance flexibility in mapping variable acoustic-phonetic cues to lexical items, support faster adaptation and accommodation to diverse accents, or attenuate bias effects under non-ideal listening conditions (Saito & Shintani, 2016).

Against this background, our study tests whether multilingual L1 listeners show a general advantage over monolingual L1 listeners across multiple English accents. We focus on listeners' comprehensibility judgments and intelligibility outcomes for several English varieties spanning Inner and Outer Circle contexts. Based on previous research, the present study adopts the following research questions:

1. To what extent do comprehensibility ratings differ between monolinguals and multilinguals across accents?
2. To what extent do intelligibility scores differ between monolinguals and multilinguals across accents?

METHOD

Participants

Undergraduates at a Southwestern U.S. university were recruited from English composition courses and Italian language courses as participants in this study. Participants were asked to indicate whether or not they considered themselves to be multilingual; if yes, they were asked to indicate which languages they were proficient in and estimate their proficiency level in those languages. Ultimately, the final sample consisted of 53 participants of which 30 were monolinguals and 23 were English-dominant multilinguals. Of this population, 36 identified as female, 11 as male, and 5 selecting non-binary or prefer not to say. The participants' age ranges from 18 to 21 (M = 19.5 years, SD = 1.06).

Stimuli

All speech stimuli were newly recorded for this project (i.e., not drawn from an existing corpus). Although, we partially replicated the stimulus design of Verbeke and Simon's (2023) study, with different target varieties (General American, Regional American–Texas, General British, Regional British–Newcastle, Ghanaian English), the same task types (short sentences for intelligibility; a longer passage for comprehensibility), and comparable length/register, we recorded new audio for this project rather than using their files. We did so to use the same talker per accent across both tasks, thereby avoiding the talker confounding variable in Verbeke and Simon (2023), who employed different speakers for the intelligibility and comprehensibility materials. Multiple candidate speakers were recruited for each variety. To avoid extreme outliers and compile a balanced set, an expert panel of applied linguistics PhD students independently rated each talker on 9-point scales for accentedness (*higher = less accented*) and comprehensibility (*higher = easier to understand*). We retained speakers whose mean ratings were approximately 6–6.5 on both scales. From this screened pool, we selected the final stimuli used in the experiment (one talker per accent per task).

Tasks

Comprehensibility Ratings

In order to test comprehensibility, participants heard five longer passages modeled on the materials described by Verbeke and Simon (2023) but re-recorded by our selected speakers (one speaker per accent) so that the same speaker provided both the passage (comprehensibility) and sentences (intelligibility). Each passage was a short monologue (M = 36.2 seconds) adapted from naturally occurring interview/talk-show speech. Topics were intentionally varied (e.g., film reviews, fandom, current/political issues, and personal relationships including family and friends) to limit topic-specific familiarity effects. After each passage, listeners provided a 9-point comprehensibility rating (1 = *very difficult to understand*, 9 = *very easy to understand*). Stimuli were randomized per participant. No information about talker identity, origin, or language background was given to participants.

Intelligibility Measurement

To measure intelligibility, participants transcribed 25 short sentences in total, 5 sentences per accent. The same speakers used in the comprehensibility task also produced these sentences; recordings were made in the same session, but were different utterances (i.e., not clips cut from the longer passages). Each sentence was played once, and listeners were tasked with typing exactly what they heard.

Stimulus selection followed Verbeke and Simon's (2023) study: Sentences contained only moderate-to-high-frequency content words, screened with SUBTLEX-US (Brysbaert & New, 2009) and SUBTLEX-UK (van Heuven et al., 2014) to minimize lexical rarity effects. Proper names and culture-bound items were also avoided. Sentences were brief and uniformly constrained (M_{duration} = 2.2 seconds; M_{length} = 8.53 words), to limit variance from length alone.

Responses were scored with Token Sort Ratio (TSR; Bosker, 2021), a fuzzy string-matching metric that correlates strongly with human percent-words-correct. TSR yields a 0–100 score for each item (0 = no match, 100 = perfect match), which we analyzed as the intelligibility outcome.

Procedure

The study was delivered online via Qualtrics. Participants did not receive training or instruction on the constructs of accentedness and comprehensibility. However, prior to each task, on-screen instructions reminded participants to wear headphones/earbuds, ensure a quiet environment, and adjust volume to a comfortable level. All participants completed the comprehensibility task first, followed by the transcription (intelligibility) task; thus, the order of task types was fixed. Within each task, trial order was randomized with constraints to prevent immediate repetition of the same talker. After the listening tasks, participants completed a brief background questionnaire (demographics, language history, and accent exposure). The full session took approximately 30 minutes.

Data Analysis

All analyses were conducted in R (R Team, 2025) using lme4/lmerTest (Kuznetsova et al., 2017) for mixed-effects modeling, while also using the emmeans package (Lenth, 2018) for estimated marginal means (EMMs), which is the effect size for η^2. The original wide file was reshaped to long format separately for the two outcomes. For comprehensibility, we extracted the ratings (1–9; perceived ease of understanding) and mapped each question to an Accent factor with five levels: General British (GB), General American (GA), Texas (TX), Newcastle (RB), and Ghanaian English (GN). For intelligibility, we pivoted the transcription items to long form and used the Token Sort Ratio (TSR; 0–100) as the score. In both datasets, participant ID was retained to model repeated measures.

Predictors were aligned with the research questions. In both the comprehensibility and intelligibility models, the listener background was Additional_Language_Y_N (monolingual = *No*, multilingual = *Yes*). Accent was entered as a five-level factor in both models, with GB set as the reference, so all accent coefficients are interpretable relative to GB. Comprehensibility ratings were analyzed as approximately continuous, a common practice for 7–9 point scales.

We fit linear mixed-effects models with a random intercept for listener (ID) to account for baseline differences in rating/transcription performance. For comprehensibility, each listener contributed one passage per accent; for intelligibility, each listener transcribed only a small number of short sentences per accent. Because this yields sparse per-listener replication for Accent, random-slope models (e.g., Accent | ID) were unstable in our data, meaning they produced singular fits (near-zero random-slope variance) and did not improve fit indices (REML/AIC) relative to the intercept-only structure. We therefore report the random-intercept models as the most parsimonious specification that converged reliably and captured between-listener baseline differences.

For comprehensibility, the model was:

Ratings_Comp ~ Additional_Language_Y_N * Accent + (1 | ID)

For intelligibility, the model was:

Score_Int ~ Additional_Language_Y_N * Accent + (1 | ID)

Inference relied on Type-III ANOVA with Satterthwaite degrees of freedom (see Tables 2 and 3 in the Results). For intelligibility, we additionally reported partial η^2 for each term to gauge variance explained. Given a significant Background × Accent interaction in the intelligibility model, we estimated EMMs for each Background × Accent cell and visualized the interaction with 95% CIs; planned Tukey-adjusted contrasts compared (a) monolinguals vs. multilinguals within each accent and (b) accents within each listener group. Descriptive distributions (boxplots/densities) complemented the model-based figures. For intelligibility, we additionally reported partial η^2 for each term to gauge variance explained. Given a significant Background × Accent interaction in the intelligibility model, we estimated EMMs for each Background × Accent cell and visualized the interaction with 95% CIs; planned Tukey-adjusted contrasts compared (a) monolinguals vs. multilinguals within each accent and (b) accents within each listener group. Descriptive distributions (boxplots/densities) complemented the model-based figures.

RESULTS

For the first research question concerning the impact of monolingual or multilingual status on comprehensibility ratings for different English varieties, Table 1 shows the descriptive statistics of the group differences.

Table 1
Descriptive Statistics of Comprehensibility Ratings (1–9 Scale)

	Monolingual				Multilingual			
	n	***M***	***SD***	**Range**	***n***	***M***	***SD***	**Range**
American (GA)	30	6.50	3.62	1−9	23	5.87	3.77	1−9
British (GB)	30	5.17	2.39	1−9	23	5.57	1.97	2−8
Ghanaian (GN)	30	5.03	2.39	1−9	23	5.00	1.45	3−8
Regional American (TX)	30	5.90	2.43	1−9	23	5.74	2.22	2−9
Regional British (RB)	30	4.97	2.44	1−9	23	5.13	2.12	2−9

We fit a linear mixed-effects model with Multilingual status (Yes/No), Accent (treatment-coded with GA as the reference), and their interaction as fixed effects, plus a random intercept for Listener (ID) with Satterthwaite degrees of freedom. The Type III ANOVA results for both models are presented in Table 2 and 3. The model explained a small but non-trivial share of variance (marginal $R^2 = .04$; conditional $R^2 = .18$). There was no main effect of multilingualism ($p = .898$) and no Multilingualism × Accent interaction ($p = .849$). The omnibus Accent effect was marginal ($p = .055$). Planned EMM contrasts relative to GA showed that GB, RB, and GN

received lower comprehensibility ratings than GA (GB: β = −1.33, p = .031; RB: β = −1.53, p = .013; GN: β = −1.47, p = .018), whereas RA did not differ from GA (p = .330). Means align with these patterns: Both groups rated GA as the easiest accent (Monolinguals: GA M = 6.50 vs. GB M = 5.17; Multilinguals: GA M = 5.87 vs. GB M = 5.57; see Table 1). Together, these results suggest that perceived ease of understanding was broadly similar across language-background groups, with a consistent GA advantage that did not depend on mono- vs. multilingual status (see Table 4 for planned contrasts within each accent).

Table 2
Type III ANOVA (Satterthwaite) for Comprehensibility

Effect	df	*F* value	*p*
Multilingualism	1	0.41	.523
Accent	4	71.71	< .001
Multilingualism × Accent	4	3.23	.012

Table 3
Type III ANOVA (Satterthwaite) for Intelligibility

Effect	df	*F* value	*p*
Multilingualism	1	0.02	.898
Accent	4	2.36	.055
Multilingualism × Accent	4	0.34	.849

Table 4
Planned Simple-Effects Contrasts (Multilingual Yes−No) Within Each Accent from the Linear Mixed-Effects Model for Comprehensibility

Accent	Estim.	*SE*	df	*t*	*p*	95% CI	*d*	95% CI
GA	−0.63	0.72	233.06	−0.88	.38	[−2.04, 0.78]	−0.26	[−0.86, 0.33]
GN	−0.03	0.72	233.06	−0.05	.96	[−1.45, 1.38]	−0.01	[−0.61, 0.58]
RB	0.16	0.72	233.06	0.23	.82	[−1.25, 1.58]	0.07	[−0.53, 0.66]
RA	−0.16	0.72	233.06	−0.22	.82	[−1.57, 1.25]	−0.07	[−0.66, 0.53]
GB	0.40	0.72	233.06	0.56	.58	[−1.01, 1.81]	0.17	[−0.42, 0.76]

Note. p value represents Holm correction and d represents Cohen's d effect size.

For intelligibility, Table 5 reports descriptive statistics for the transcription task.

Table 5

Descriptive Statistics of Intelligibility Scores (0–100)

	Monolingual				Multilingual			
	n	***M***	***SD***	**Range**	***n***	***M***	***SD***	**Range**
American (GA)	30	94.3	1.09	39−100	23	91.8	16.6	16−100
British (GB)	30	94.6	1.87	37−100	23	90.3	17.60	23−100
Ghanaian (GN)	30	82.7	6.09	15−100	23	83.2	18.8	33−100
Regional American (TX)	30	94.7	0.41	47−100	23	89.9	18.0	11−100
Regional British (RB)	30	80.9	3.61	0−100	23	81.2	20.5	16−100

For the second research question, we fit a linear mixed-effects model predicting intelligibility scores from Accent, Multilingual status (Yes/No), and their interaction, with a random intercept for Listener (ID). The Type III ANOVA showed no overall intelligibility advantage for multilinguals across accents ($p = .523$). There was a strong main effect of Accent ($p < .001$), reflecting substantial differences in intelligibility across varieties; relative to the GA reference, GN and RB were markedly less intelligible. Importantly, the Multilingualism × Accent interaction was significant ($p = .012$), indicating that the size and/or direction of accent effects differed by listener language background. For context, partial η^2 from the Type III ANOVA was approximately .18 for Accent and .01 for the interaction. Planned EMM contrasts (multilinguals minus monolinguals) within each accent were non-significant after Holm correction, $t(65.48) = -1.34$ to 0.14, $p = .19$–$.94$, with uniformly small effects ($d \leq 0.43$; Table 6). The estimated marginal means, represented visually in Figure 1, show a crossover pattern: for the more familiar/standard accents in this U.S. sample—GA and GB—monolinguals scored slightly higher than multilinguals, while for the less familiar accents—GN and RB—English dominant multilinguals scored higher than monolinguals, the same can be confirmed by the descriptive results (see Table 5).

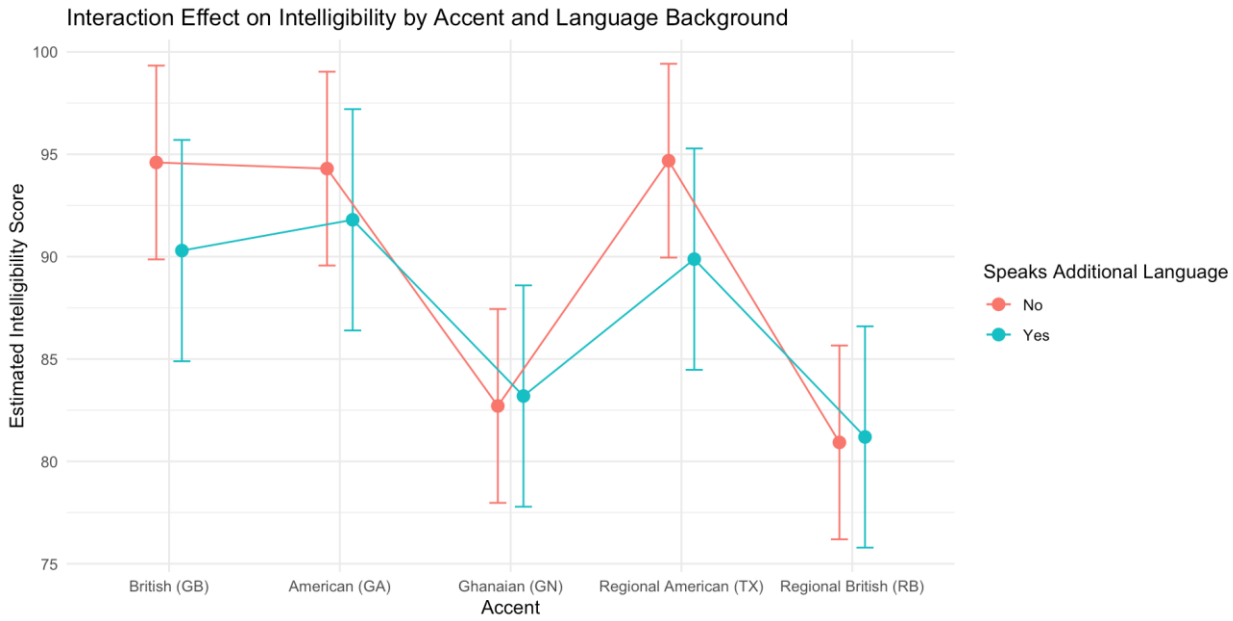
Table 6

Planned Simple-Effects Contrasts (Multilingual Yes−No) Within Each Accent from the Linear Mixed-Effects Model for Intelligibility

Accent	**Estim.**	***SE***	**df**	***t***	***p***	**95% CI**	***d***	**95% CI**
GA	−2.50	3.60	65.48	−0.70	.49	[−9.69, 4.69]	−0.22	[−0.87, 0.42]
GN	0.49	3.60	65.48	0.14	.89	[−6.70, 7.67]	0.04	[−0.60, 0.69]
RB	0.27	3.60	65.48	0.07	.94	[−6.92, 7.45]	0.02	[−0.62, 0.67]
RA	−4.81	3.60	65.48	−1.34	.19	[−11.99, 2.38]	−0.43	[−1.08, 0.21]
GB	−4.30	3.60	65.48	−1.20	.24	[−11.49, 2.88]	−0.39	[−1.03, 0.26]

Figure 1

Interaction Plot



For the first research question regarding comprehensibility, the model accounted for 26.43% of total variance. Of this, the fixed effects explained 12.35% (marginal R^2= .12), while 14.08% was attributable to between-listener differences captured by the random intercept. The remaining 73.57% was unexplained. For the second research question targeting intelligibility, the model explained 58.50% of variance (marginal R^2= .10, conditional R^2= .59); and listener differences contributed 48.08% of the variance.

The fixed-effects coefficients (Tables 7 and 8) provide additional interpretive detail. For comprehensibility (Table 7), the intercept of 6.50 represents the baseline GA rating for monolinguals, with negative accent coefficients indicating that all other varieties were rated as less comprehensible than GA. The multilingual main effect was negative but not significant (β = −0.63, p = .380), suggesting that multilinguals' overall ratings did not systematically differ from monolinguals when averaging across accents. Notably, the interaction terms were all positive but non-significant, indicating a slight tendency for multilinguals to rate non-GA accents more favorably than monolinguals did, though not enough to produce a reliable difference. For intelligibility (Table 7), the intercept was substantially higher (94.30), reflecting near-ceiling performance on GA for monolinguals. The large negative coefficients for GN (β = −11.59, p < .001) and RB (β = −13.37, p < .001) confirm these varieties presented the greatest recognition challenge. The interaction terms were positive for GN (β = 2.98, p = .127) and RB (β = 2.76, p = .157), indicating that multilinguals' performance declined less steeply on these accents than monolinguals' performance did, though these individual contrasts did not reach conventional significance thresholds.

Table 7

Linear Mixed-Effects Model Predicting Comprehensibility (1–9)

Term	Estimate	*SE*	*df*	*t*	*p*	95% CI
(Intercept)	6.50	0.47	233.06	13.77	< .001	[5.57, 7.43]
Multilingual	−0.63	0.72	233.06	−0.88	.380	[−2.04, 0.78]
Accent_GB	−1.33	0.61	204.00	−2.17	.031	[−2.54, −0.12]
Accent_RA	−0.60	0.61	204.00	−0.98	.330	[−1.81, 0.61]
Accent_RB	−1.53	0.61	204.00	−2.50	.013	[−2.74, −0.32]
Accent_GN	−1.47	0.61	204.00	−2.39	.018	[−2.68, −0.26]
Multilingual × Accent_GB	1.03	0.93	204.00	1.10	.271	[−0.81, 2.87]
Multilingual × Accent_RA	0.47	0.93	204.00	0.50	.615	[−1.37, 2.31]
Multilingual × Accent_RB	0.79	0.93	204.00	0.85	.395	[−1.04, 2.63]
Multilingual × Accent_GN	0.60	0.93	204.00	0.64	.523	[−1.24, 2.44]

Note. Reference levels: Accent = GA, Multilingualism = No. Positive estimates indicate higher comprehensibility relative to GA (reference), for monolinguals (reference), unless modified by interaction terms.

Table 8

Linear Mixed-Effects Model Predicting Intelligibility (0−100)

Term	Estimate	*SE*	*df*	*t*	*p*	95% CI
(Intercept)	94.30	2.37	65.48	39.78	< .001	[89.57, 99.03]
Multilingual	−2.50	3.60	65.48	−0.69	.490	[−9.68, 4.68]
Accent_GN	−11.59	1.29	1264.00	−9.01	< .001	[−14.12, −9.07]
Accent_RB	−13.37	1.29	1264.00	−10.40	< .001	[−15.90, −10.85]
Accent_RA	0.39	1.29	1264.00	0.30	.764	[−2.14, 2.91]
Accent_GB	0.30	1.29	1264.00	0.23	.816	[−2.22, 2.82]
Multilingual × Accent_GN	2.98	1.95	1264.00	1.53	.127	[−0.85, 6.81]
Multilingual × Accent_RB	2.76	1.95	1264.00	1.42	.157	[−1.07, 6.59]
Multilingual × Accent_RA	−2.31	1.95	1264.00	−1.18	.237	[−6.14, 1.52]
Multilingual × Accent_GB	−1.80	1.95	1264.00	−0.92	.356	[−5.63, 2.03]

Note. Reference levels: Accent = GA, Multilingualism = No.

DISCUSSION

This study examined whether multilingual experience confers a general listening advantage for L1 English users across multiple English accents. Two listening constructs were analyzed: the listener's experience of how difficult the speech is to understand (comprehensibility) and how much of the speech is actually understood by interlocutors (intelligibility).

For comprehensibility, listeners showed a clear accent effect: General American English was rated easier to understand than other accents. However, there was no main effect of Multilingualism and no Accent × Multilingualism interaction. In other words, monolinguals and multilinguals perceived ease in broadly similar ways and both groups preferred General American accent.

For intelligibility, there was again a strong accent effect, but now accompanied by a significant Accent × Multilingualism interaction and no main effect of Multilingualism overall. The interaction reflected a trade-off: monolinguals held a small edge on more familiar/standard accents (General American and British English), whereas multilinguals edged monolinguals on less-familiar accents (e.g., Ghanaian and regional British English). Thus, there was no global multilingual advantage; any benefit depended on the accent.

Taken together, these patterns are consistent with the possibility that listeners' performance and evaluations are shaped by accent familiarity/exposure. Because this study did not directly measure the degree of listener's familiarity with each accent, this interpretation should be treated as tentative. Future work should include an explicit accent-familiarity or exposure measure to test whether differences between accents—and any accent-by-group patterns—are explained by listeners' prior experience. Nonetheless, the results align with prior research showing that increased exposure to diverse accents is associated with greater comfort and reduced evaluative bias toward accented speech (Boduch-Grabka & Lev-Ari, 2021; Rovetti et al., 2023). In short, the present findings suggest that multilingualism alone does not confer a broad listening advantage across English accents. To the extent that familiarity plays a role, it is likely tied to exposure to specific English accent varieties rather than to multilingual experience per se.

The results of the intelligibility task tell a slightly more complicated story. The results indicate that multilingual experience can be helpful, but not uniformly so. When the accent was less familiar, multilingual listeners did a little better at recognizing words. A likely reason is that multilingual experience builds broader phonetic categories and more flexible "decoding" strategies, which help when the input doesn't match everyday patterns—this is what cross-language facilitation accounts predict (Witteman et al., 2013). By contrast, with very familiar accents, monolingual listeners may have a slight edge because their everyday exposure makes it faster to activate expected words with less competition, which is an idea consistent with cohort-style models where the brain activates all lexical candidates starting with the same initial sounds (Green, 1998).

What we can gather from these findings is that being multilingual is not a blanket advantage, but it can help when the accent is unusual for the listener. For pedagogical purposes, instead of exposing everyone to one single "standard" accent, courses should build in lots of brief, repeated

listening to a variety of Englishes, spread across different task types and everyday contexts. With steady exposure, unfamiliar patterns start to feel expected, which raises comfort and the perceived ease of understanding (Boduch-Grabka & Lev-Ari, 2021). At the same time, this variety practices a more flexible way of mapping sounds to words—the kind of listening skill multilinguals often draw on—so students get better at decoding variable input rather than only one pronunciation template (Levy, 2008; Witteman et al., 2013). Normalizing variation in this way can also reduce stereotype-driven judgments about "non-standard" speech.

CONCLUSION

Our findings point to a targeted multilingual advantage. Multilingual experience did not yield higher perceived ease (comprehensibility) overall; both groups patterned similarly, with GA emerging as the most easily understood variety. By contrast, for word recognition (intelligibility) the advantage was accent-dependent: multilingual listeners performed better on less familiar varieties (e.g., GN, RB), while monolinguals held a slight edge on high-exposure "standard" varieties (GA, GB).

Across both constructs, there was substantial between-listener variability, underscoring that stable individual differences meaningfully shape accent perception beyond broad group labels. For this reason, future studies should move beyond binary groupings to model predictors such as proficiency profiles, age of acquisition, language use, executive control, music training, and social attitudes—and test how they interact with specific accent features.

It would be interesting to explore further the role of exposure, experimentally manipulate amount, diversity, and recency of accent exposure (short-term adaptation vs. longitudinal contact) to identify when and how exposure boosts both comprehensibility and intelligibility. Finally, we believe it is important to replicate this study with broader age ranges, community samples, and varied educational contexts to test robustness and boundary conditions of the accent-dependent multilingual benefit.

ABOUT THE AUTHORS

Francesca Grixoni (francesca.grixoni@nau.edu) is a PhD candidate at Northern Arizona University, where she teaches Italian as a foreign language. Her research interests include language and the law, L2 fluency, and speech.

Alexander Holmberg (ajh863@nau.edu) is a PhD student at Northern Arizona University. His research interests include spoken corpora, L2 fluency, and L2 pragmatics.

REFERENCES

Abeywickrama, P. (2013). Why not non-native varieties of English as listening comprehension test input? *RELC Journal*, *44*(1), 59–74. https://doi.org/10.1177/0033688212473270

Adank, P., Evans, B. G., Stuart-Smith, J., & Scott, S. K. (2009). Comprehension of familiar and unfamiliar native accents under adverse listening conditions. *Journal of Experimental*

Psychology: Human Perception and Performance, *35*(2), 520–529. https://doi.org/10.1037/a0013552

Baese-Berk, M. M., Bradlow, A. R., & Wright, B. A. (2013). Accent-independent adaptation to foreign-accented speech. *Journal of the Acoustical Society of America*, *133*(3), EL174–EL180. https://doi.org/10.1121/1.4789864

Bent, T., & Baese-Berk, M. M. (2021). Perceptual learning of accented speech. In J. S. Pardo, L. C. Nygaard, R. E. Remez, & D. B. Pisoni (Eds.), *The handbook of speech perception* (pp. 428–464). Wiley.

Bent, T., & Bradlow, A. R. (2003). The interlanguage speech intelligibility benefit. *Journal of the Acoustical Society of America*, *114*(3), 1600–1610. https://doi.org/10.1121/1.1603234

Bloomfield, A., Wayland, S. C., Rhoades, E., Blodgett, A., Linck, J., & Ross, S. (2010). *What makes listening difficult? Factors affecting second language listening comprehension.* University of Maryland.

Boduch-Grabka, K., & Lev-Ari, S. (2021). Exposing individuals to foreign accent increases their trust in what nonnative speakers say. *Cognitive Science*, *45*(11), Article e13064. https://doi.org/10.1111/cogs.13064

Bosker, H. R. (2021). Using fuzzy string matching for automated assessment of listener transcripts in speech intelligibility studies. *Behavior Research Methods*, *53*(5), 1945–1953. https://doi.org/10.3758/s13428-021-01542-4

Brysbaert, M., & New, B. (2009). Moving beyond Kučera and Francis: A critical evaluation of current word frequency norms and the introduction of a new and improved word frequency measure for American English. *Behavior research methods*, *41*(4), 977-990. https://doi.org/10.3758/BRM.41.4.977

Buck, G. (2001). *Assessing listening.* Cambridge University Press.

Clarke, C. M., & Garrett, M. F. (2004). Rapid adaptation to foreign-accented English. *Journal of the Acoustical Society of America*, *116*, 3647–3658. https://doi.org/10.1121/1.1815131

Dahan, D., Drucker, S. J., & Scarborough, R. A. (2008). Talker adaptation in speech perception: Adjusting the signal or the representations? *Cognition*, *108*(3), 710–718. https://doi.org/10.1016/j.cognition.2008.06.003

Derwing, T. M., & Munro, M. J. (1997). Accent, intelligibility, and comprehensibility: Evidence from four L1s. *Studies in Second Language Acquisition*, *20*(1), 1–16. https://doi.org/10.1017/S0272263197001010

Gass, S. M., & Varonis, E. M. (1984). The effect of familiarity on the comprehensibility of nonnative speech. *Language Learning*, *34*, 65–89. https://doi.org/10.1111/j.1467-1770.1984.tb00996.x

Green, D. W. (1998). Mental control of the bilingual lexico-semantic system. *Bilingualism: Language and Cognition*, *1*(2)*,* 67–81. https://doi.org/10.1017/S1366728998000133

Harding, L. (2008). Accent and academic listening assessment: A study of test-taker perceptions. *Melbourne Papers in Language Testing*, *13*(1), 1–33.

Jenkins, J. (2006). Global intelligibility and local diversity: Possibility or paradox? In R. Rubdy & M. Saraceni (Eds.), *English in the world* (pp. 32–39). Continuum.

Kachru, B. B. (1985). Standard, codification and sociolinguistic realism: The English language in the outer circle. In R. Quirk & H. Widdowson (Eds.), *English in the world: Teaching and learning the language and literatures* (pp. 11–36). Cambridge University Press.

Kang, O., Thomson, R., & Moran, M. (2018). Empirical approaches to measuring intelligibility of different varieties of English. *Language Learning*, *68*(1), 115–146. https://doi.org/10.1111/lang.12270

Kang, O., Thomson, R., & Moran, M. (2019). The effects of international accents and shared L1 on listening comprehension tests. *TESOL Quarterly*, *53*(1)*,* 56–81. https://doi.org/10.1002/tesq.463

Kennedy, S., & Trofimovich, P. (2008). Intelligibility, comprehensibility, and accentedness of L2 speech: The role of listener experience and semantic context. *Canadian Modern Language Review*, *64*(3), 459–489. https://doi.org/10.3138/cmlr.64.3.459

Kraljic, T., & Samuel, A. G. (2007). Perceptual adjustments to multiple speakers. *Journal of Memory and Language*, *56*(1), 1–15. https://doi.org/10.1016/j.jml.2006.07.010

Kraut, R., & Wulff, S. (2013). Foreign-accented speech perception ratings: A multifactorial case study. *Journal of Multilingual and Multicultural Development*, *34*(3), 249–263. https://doi.org/10.1080/01434632.2013.767340

Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest package: Tests in linear mixed effects models. *Journal of Statistical Software*, *82*(13), 1–26. https://doi.org/10.18637/jss.v082.i13

Lenth, R. V. (2018). emmeans: Estimated marginal means, aka least-squares means. *Journal of Statistical Software*, *85*(1), 1–67. https://doi.org/10.18637/jss.v085.i01

Levy, R. (2008). Expectation-based syntactic comprehension. *Cognition*, *106*(3), 1126–1177. https://doi.org/10.1016/j.cognition.2007.05.006

Major, R. C., Fitzmaurice, S. F., Bunta, F., & Balasubramanian, C. (2002). The effects of nonnative accents on listening comprehension. *TESOL Quarterly*, *36*(2), 173–190. https://doi.org/10.2307/3588288

Mattys, S. L., Davis, M. H., Bradlow, A. R., & Scott, S. K. (2012). Speech recognition in adverse conditions: A review. *Language and Cognitive Processes*, *27*(7–8), 953–978. https://doi.org/10.1080/01690965.2012.705006

Munro, M. J., & Derwing, T. M. (1995). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning*, *45*(1), 73–97. https://doi.org/10.1111/j.1467-1770.1995.tb00963.x

Norris, D., McQueen, J. M., & Cutler, A. (2003). Perceptual learning in speech. *Cognitive Psychology, 47*(2), 204–238. https://doi.org/10.1016/S0010-0285(03)00006-9

R Core Team. (2025). *R: A language and environment for statistical computing* [Computer software]. R Foundation for Statistical Computing. https://www.R-project.org/

Rovetti, J., Sumantry, D., & Russo, F. A. (2023). Exposure to nonnative-accented speech reduces listening effort and improves social judgments of the speaker. *Scientific Reports*, *13*(1), 2808. https://doi.org/10.1038/s41598-023-29082-1

Saito, K., Trofimovich, P., & Isaacs, T. (2017). Using listener judgments to investigate linguistic influences on L2 comprehensibility and accentedness: A validation and generalization study. *Applied Linguistics*, *38*(4), 439–462. https://doi.org/10.1093/applin/amv047

Saito, K., & Shintani, N. (2016). Do native speakers of North American and Singapore English differentially perceive comprehensibility in second language speech? *TESOL Quarterly*, *50*(2), 421–446. https://doi.org/10.1002/tesq.234

Smith, L. E., & Bisazza, J. A. (1982). The comprehensibility of three varieties of English for college students in seven countries. *Language Learning*, *32*(2), 259–269. https://doi.org/10.1111/j.1467-1770.1982.tb00971.x

Smith, L. E., & Nelson, C. L. (1985). International intelligibility of English: Directions and resources. *World Englishes*, *4*(3), 333–342. https://doi.org/10.1111/j.1467-971X.1985.tb00423.x

Thomson, R. (2017). Measurement of accentedness, intelligibility and comprehensibility. In O. Kang & A. Ginther (Eds.), *Assessment in second language pronunciation* (pp. 11–29). Routledge. https://doi.org/10.4324/9781315170756-2

Trofimovich, P., & Isaacs, T. (2012). Disentangling accent from comprehensibility. *Bilingualism: Language and Cognition*, *15*(4), 905–916. https://doi.org/10.1017/S1366728912000168

Van Heuven, W. J., Mandera, P., Keuleers, E., & Brysbaert, M. (2014). SUBTLEX-UK: A new and improved word frequency database for British English. *Quarterly Journal of Experimental Psychology*, *67*(6), 1176–1190. https://doi.org/10.1080/17470218.2013.8505

Van Wijngaarden, S., Steeneken, H., & Houtgast, T. (2002). Quantifying the intelligibility of speech in noise for nonnative listeners. *Journal of the Acoustical Society of America, 111(*4), 1906–1916. https://doi.org/10.1121/1.1456928

Verbeke, G., & Simon, E. (2023). Listening to accents: Comprehensibility, accentedness and intelligibility of native and non-native English speech. *Lingua*, *292*, Article 103572. https://doi.org/10.1016/j.lingua.2023.103572

Witteman, M. J., Weber, A., & McQueen, J. M. (2013). Foreign accent strength and listener familiarity with an accent codetermine speed of perceptual adaptation. *Attention, Perception, & Psychophysics*, *75*(3), 537–556. https://doi.org/10.3758/s13414-012-0404-y