L2 ENGLISH LISTENERS' COMPREHENSION: AN EXAMINATION OF THE EFFECTS
OF VISUAL CUES AND NONNATIVE ACCENTED SPEECH

By

Mashael Saad A. Algana

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ABSTRACT

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Visual cues such as seeing the speaker's face and gestures have been found to facilitate second-language (L2) listeners' comprehension of native English speech (Sueyoshi & Hardison, 2005). Very few studies attempted to investigate how audiovisual cues affect the comprehension of nonnative accented speech (e.g., Barros, 2010; Zheng & Samuel, 2019). The findings of these studies have been inconclusive, and these mixed results can be ascribed to the varying degrees of speakers' accents, the lack of comprehensibility and accentedness ratings and/or lack of descriptions of nonnative speaker's gesture use. To address this, the present study examined: a) whether speaker's accent (native vs. nonnative) and stimulus condition (i.e., audiovisual (AV) including speaker's gesture and face vs. audiovisual including only speaker's face vs. audio (A) only) affect L2 listeners' comprehension of English discourse, b) whether stimulus condition affects L2 listeners' accentedness and comprehensibility ratings of native and nonnative speech, c) whether speaker's accent and stimulus condition affect L2 listeners' perception of and preference for visual cues, and d) whether speaker's accent affects L2 listeners' preference for visual cues in everyday communication and L2 language development.

A total of 120 Arab university students who were L2 learners of English in the US, UK, Australia or the Middle East were assigned to one of six conditions: a) native speaker-AV-gesture-face ($n = 20$), b) native speaker-AV-face ($n = 20$), c) native speaker-A-only ($n = 20$), d) nonnative speaker-AV-gesture-face ($n = 20$), e) nonnative speaker-AV-face ($n = 20$), and c)

nonnative speaker-A-only ($n= 20$). The participants in each condition completed: a multiple-choice listening comprehension test in segments following audiovisual or A-only clips of a native or nonnative speaker's lecture on the same topic, a comprehensibility and accentedness questionnaire, a preference for and perception of visual cues questionnaire and an optional follow-up interview.

Listening comprehension scores were significantly higher for native speech versus nonnative speech. Results revealed that seeing the native speaker's gestures had some facilitative effects. Such facilitative effects were not observed for the listening comprehension scores for the nonnative speaker. The positive and facilitative effects of seeing the native speaker's gestures were also observed in the L2 listeners' accentedness and comprehensibility ratings of native speech. The native speaker was rated as most comprehensible and nativelike in the AV-gesture-face condition; such positive effects of seeing the speaker's gestures were not observed in the ratings of nonnative speech. Surprisingly, the nonnative speaker was rated as least nativelike in the AV-gesture-face condition, and stimulus condition had no significant effect on comprehensibility ratings of nonnative speech. Responses to the questionnaires and follow-up interview indicated that, unlike for the native speaker, seeing the nonnative speaker's face and/or gestures was not facilitative. The responses uncovered a general preference for visual cues in L2 listeners' everyday communication and in developing their English skills. Responses also uncovered L2 listeners' general preference for native English speech versus nonnative.

The findings of this study shed light on how and when visual cues and accent can decrease or increase L2 listeners' comprehension. The results provide valuable implications for L2 pedagogy and assessment and it raises a number of important questions that can help further extend this line of research on the effects of visual cues and accented speech.

For my husband and children

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CHAPTER 1: REVIEW OF LITERATURE

The size of the world's nonnative English-speaking population is challenging to assess; however, Crystal (2003) estimated that it ranged from 500 million to 1 billion in contrast to the native-speaking population, which was estimated to range from 320 to 380 million. This situation has led to the reality that nonnative speakers have become integral participants of interactions in various domains where English is the primary target language (Canagarajah, 2006). In many academic settings, interactions with nonnative speakers are frequent (Abeywickrama, 2013). Since a large number of these nonnative speakers of English are late adult second-language (L2) learners, many of them fail to demonstrate nativelike pronunciation (Abrahamsson & Hyltenstam, 2009). The speech of these L2 adult nonnative speakers "is generally marked by some trace of a foreign accent" (Saito, Tran, Suzukida, Sun, Magne, & Ilkan, 2019, p. 1134). This accented speech can sometimes result in miscommunication (Suarez, 2007) and both native and nonnative speakers can find themselves negotiating meaning with their interlocutors (Canagarajah, 2006). Since research has shown that many adult L2 learners fail to achieve nativelike pronunciation (Flege, Munro, & Mackay, 1995) or nativelike proficiency (e.g., Abrahamson & Hyltenstam, 2009), Derwing and Munro (2015) shed the light on the importance of intelligibility which is "the degree of match between a speaker's intended message and the listener's comprehension" (p.5) and comprehensibility or "the ease or difficulty a listener experiences in understanding an utterance" (p.5). They emphasized that it is more realistic for L2 learners to be able to produce comprehensible and intelligible L2 speech rather than attain nativelike pronunciation.

Now, although it may be argued that variations in comprehensibility can occur in native speech, as well, there are other numerous factors that can further negatively influence the

comprehensibility and intelligibility of L2 speech (Derwing and Munro, 2015). First, listeners may have a negative attitude towards nonnative accented speech (Lippi-Green, 2012) as both native and nonnative listeners have been found to judge nonnative accents as less preferable than native accents (Dalton-Puffer, Kaltenboec, Smit, 1997; Gill, 1994:). Also, L2 speakers with varying degrees of accents, may be viewed as belonging to a lower social class (Nesdale & Rooney, 1996) and perceived as deficient users of the language (Firth & Wagner, 2007). Such negative attitudes and stereotypes can decrease comprehensibility (Major, Fitzmaurice, Bunta, & Balasubramanian, 2002, 2005). Second, L2 speech can consist of prosodic errors (i.e., errors in stress, intonation and rhythm) and such prosodic errors can impact intelligibility and comprehensibility more negatively than phonetic errors (Anderson-Hsieh & Koehler, 1988; Anderson-Hsieh, Johnson, & Koehler, 1992; Munro & Derwing, 2002). Third, nonnative speakers may make grammatical errors and omit discourse markers which can decrease comprehensibility (Derwing & Munro, 2015; Williams, 1992). Finally, L2 speakers can be less fluent (i.e., produce longer pauses, false starts, hesitation) than L1 speakers and such lack of fluidity in speech can reduce intelligibility (Derwing & Munro, 2015).

The massive and frequent exposure to accented speech in today's global world has prompted a number of studies to investigate the effects of foreign accents on listening comprehension by both nonnative (e.g., Abeywickrama, 2013: Eisenstein & Berkowitz, 1981; Smith & Bisazza, 1982) and native English populations (e.g., Major, Fitzmaurice, Bunta, & Balasubramanian, 2002; Anderson-Hsieh & Koehler, 1988), especially in educational settings. The findings of these studies yielded mixed results and such divergent results prompted further investigations of the effects of nonnative accented speech.

In recent years, very few studies have examined the potential role of visual cues in facilitating the comprehension of accented speech (e.g., Barros, 2010; Yi, Phelps, Smiljanic, and Chandrasekaran, 2013; Zheng & Samuel, 2019). These studies have also uncovered mixed results. Generally, visual cues such as seeing the speaker's face and lip movements have been found to be helpful in facilitating listening comprehension (e.g., Yi, et al., 2013; Zheng & Samuel, 2019); however, a comparison of the effects of visual cues (e.g., seeing the speaker's face and gestures) and the effects of an audio only condition do not always reach statistical significance (e.g., Barros, 2010). The mixed results observed in all the studies mentioned above must be interpreted with great caution mainly because many of these studies do not provide sufficient information about the speakers. They also fail to include concrete measures of speakers' strength of accent (i.e., accentedness) as well as listeners' judgments of how easy or difficult it was to understand the speaker (i.e., comprehensibility judgments). The inclusion of such dimensions or constructs (i.e., accentedness and comprehensibility) is crucial to help draw more reliable and insightful conclusions (Derwing & Munro, 2009).

Very few studies attempted to control for strength of speakers' accent. These studies investigated the listening comprehension of either: a) native users of English (e.g., Anderson-Hsieh & Koehler, 1988), or b) nonnative users of English (e.g., Abeywickrama 2013; Ockey & French, 2014; Ockey, Papageorgiou & French, 2016). Although these studies provided some important information about the speakers by using concrete measures of accentedness and/or comprehensibility, it is important to note that some of these studies investigated only the effects of native English accents such as Australian English and British English (e.g., Ockey & French, 2014; Ockey, Papageorgiou & French, 2016). Furthermore, some variables in many of these studies remain uncontrolled, such as accent familiarity (e.g., Anderson-Hsieh & Koehler, 1988)

and topic familiarity (e.g., Ockey & French, 2014; Ockey et al., 2016). These variables have been found to facilitate listeners' comprehension (Gass & Varonis, 1984; Major et al., 2005). Not controlling for such variables makes it unclear as to whether the results of the previous studies were affected by listeners' background knowledge of a topic or listeners' familiarity with the speaker's accent. These studies also did not investigate the effects of visual cues on comprehensibility and accentedness ratings.

This gap sheds light on the need for more carefully designed studies that systematically control for these variables. The present study attempts to investigate the effects of accent (i.e., native vs. nonnative) and visual cues (i.e., face + gestures or face-only) on university L2 English listeners' comprehension while taking into consideration topic familiarity and accent familiarity, and the inclusion of measurements of the comprehensibility and accentedness of the nonnative speaker's speech.

Intelligibility, Comprehensibility and Accentedness

Oral communication is a crucial component of our daily lives which requires intelligible pronunciation to achieve successful interaction (Derwing & Munro, 2015). Saito (2007) indicated that recognizable pronunciation is vital during communication regardless of speaker's high attainment of L2 vocabulary and grammar. Clarity in the pronunciation and phonology of the speaker not only enhances speech intelligibility, but also comprehensibility (Munro & Derwing, 2015). The researchers noted that both constructs (i.e., intelligibility & comprehensibility) can be compromised when segmental and suprasegmental features deviate from what the listener is accustomed to hearing or expects to hear. Variation in these two aspects of speech (i.e., segmental and suprasegmental features) is due to speaker's accent or "the degree to which an individual's speech patterns are perceived to be different from the local variety, and

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how much this difference is perceived to impact the comprehension of listeners who are familiar with the local variety." (Ockey & French, 2014, p. 695). The strength of such accent varies based on factors such as speaker's age and amount of L1 use (Piske, MacKay, & Flege, 2001). Having a strong accent does not necessarily negatively impact intelligibility; however, there are cases in which speakers can have high accentedness and low intelligibility (Derwing & Munro, 2015). Derwing and Munro noted that with low intelligibility and high accentedness, comprehensibility can be negatively influenced.

A critical question regarding these three constructs (i.e., intelligibility, comprehensibility and accentedness) is how they affect L2 English listeners' comprehension. This is an important question to address mainly because listening in itself is a difficult skill (Brown, 2014). Brown suggested that this difficulty arises due to the fact that listening involves real-time input that "comes rushing" (p.3) with no opportunity for a "second chance, unless, of course, the listener asks for repetition" (p. 3). Also, Brown noted that the identification of cognates while listening may be harder due to differences in pronunciation across languages. The complexity of L2 listening can be further increased in the absence of visual cues (i.e., facial expressions, gestures and eye gaze) (Kida, 2008) and presence of an unintelligible heavy accent (Derwing & Munro, 2015). Interestingly, to date, little is known about how both accent and visual cues impact the listening comprehension of nonnative speakers of English. Derwing and Munro (2005) emphasize that "a foreign accent is a complex aspect of language" (p. 379). To better understand the complex nature of accented speech, it is vital to consider accentedness and comprehensibility judgments (Derwing & Munro, 2009). It is also important to consider how accentedness and comprehensibility judgements vary when accented speech is accompanied by visual cues. It will

be argued later that visual cues mediate listening comprehension and can affect how accentedness and comprehensibility of nonnative accented speech is perceived.

Previous Studies on the Effects of Visual Input

Although learners' comprehension of L2 speech can be negatively influenced by factors such as nonnative accent (Major et al., 2002), it is important to keep in mind that the human brain relies on multimodal input when perceiving speech (Rosenblum, 2010). Shams and Seitz (2008) noted that the ideal learning environments are those that involve multisensory input. Thus, it is important to explore how visual cues enhance the discourse understanding of L2 accented speech. Visual input can be described as any nonverbal communication that may occur during speech, such as lip movements, body movements, eye gaze, posture and facial expressions (Kellerman, 1992). One important type of nonverbal input that has been found to be helpful in improving discourse understanding and retention of information is gestures (Sueyoshi & Hardison, 2005). Gestures are defined as "the movements of the hand and arms that we see when people talk….The hand and its movement are symbolic; they present thought in action." (McNeill, 1992, p.1). The absence of visual cues such as gestures can be problematic for nonnative users of English who often express that "talking on the telephone is the most difficult thing to do." (Kida, 2008, p.131). von Raffler-Engel (1980) explained that "eliminating the visual modality creates an unnatural condition which strains auditory receptors to capacity" (p.235).

McNeill (1992) classified gestures into four different categories : a) *iconic* which are meaningful gestures that represent aspects of concrete actions or objects (e.g., moving the hand upward when saying the phrase 'going up'), b) *metaphoric* gestures which represent abstract ideas (e.g., a raised hand to indicate the desire to ask a question), c) *deictic* gestures which are

pointing gestures, and d) *beat* gestures which are " movements that do not present a discernible meaning" (McNeill, 1992, p.80) and are also used to express prosodic and rhythmic patterns of the language (Hirata, Kelly, Huang, & Manansala, 2014). Hardison (2018) noted that "a given gesture can span categories; for example, beats may exhibit imagistic qualities in the hand shape related to the semantic content of the message" (p.233). For this reason, McNeill (2006) recommended using the term dimensions rather than categories when referring to the different types of gestures discussed above.

Instructors' use of such nonverbal cues in the classroom has been found to be helpful. Research has shown that nonverbal cues created a positive attitude in the L2 classroom, increased learners' comprehension of new words (Lazaraton, 2004) and increased their perception of even speech segmentals (Hirata & Kelly, 2010). The positive effects of visual cues were not only observed in L2 learners' perception of single words or individual segmentals, but also more complex input such as L2 discourse. Sueyoshi and Hardison (2005) conducted a study on 42 ESL low-intermediate and advanced learners who were assigned to three conditions: AV-gesture-face, AV-face, and A-only. The 42 learners completed a multiple-choice listening comprehension test about an unfamiliar topic. The researchers found that audiovisual cues facilitated the listening comprehension of both low and high proficiency learners, with the AV-face yielding the highest scores for the high proficiency learners; and the AV-face-gesture yielding the highest scores for low proficiency learners.

Examining how visual cues influence the comprehension of L2 accented speech is extremely important given the fact that sometimes the possible facilitative effects of seeing the speaker may be reduced when the articulatory patterns of the accented speaker runs counter to what observers are accustomed to (Irwin, Pilling, & Thomas, 2011). To investigate this, Barros

(2010) conducted a study that was similar to Sueyoshi and Hardison's (2005) study; however, Barros investigated how visual cues facilitated the listening comprehension of college level native speakers of English who listened to both a Brazilian nonnative speaker of English and a native speaker of English. Barros found that facilitation of visual cues was marginal. Although the results were nonsignificant, Barros wrote that a closer look at the findings showed that when access to visual cues was absent, participants encountered greater difficulty in comprehending the nonnative instructor. Surprisingly, two important elements were needed in Barros' study to help further interpret her findings and draw clearer conclusions. First, descriptions of the native and nonnative instructors' gestures were not compared or discussed. Having such descriptions is very important given the fact that speakers' production of gestures can be influenced by their cultural background (Gullberg, 2006) and proficiency level (Nobe, 1993 as cited in Cao & Chen, 2017; Graziano & Gullberg, 2018; Gregersen, Olivares-Cuhat, & Storm, 2009). Secondly, participants' ratings of the Brazilian nonnative instructor's degree of accentedness or comprehensibility were not provided nor was there a description of the Brazilian instructors' proficiency level. One study that involved listeners' ratings of the nonnative speaker was by Yi et al. (2013). The researchers in this study investigated how monolingual native listeners perceived English sentences produced by native and Korean nonnative speakers of English in audio-only (A-only) and audio-visual-face (AV-face) conditions. Yi et al. found that visual cues (i.e., lip movements) were more useful in facilitating the comprehension of the native English speaker's speech and found that Korean nonnative speakers of English were rated as more accented in the AV condition.

Studies investigating how visual input increases listeners' comprehension of nonnative accented speech are relatively few, and a large number of them have only explored the

perception and listening comprehension of native English speakers only. Also, the findings of these studies have been inconclusive and have yielded mixed results (e.g., Banks, Gowen, Munro & Adank, 2015; Barros, 2010; Janse & Adank, 2012; Zheng & Samuel, 2019). These mixed results can be due to the listening content itself (e.g., words vs. statements), listeners' familiarity with the target accent, strength of the speaker's accent, and/or listeners' familiarity with the topic. Mattys, Davis, Bradlow, and Scott (2012) categorized accented speech as an adverse listening condition and additional research that would further examine how visual cues can help facilitate listeners' perception of accented speech is needed (Banks et al., 2015)

The Current Study

Motivated by this theoretical background, the present study attempts to further investigate how visual cues and the accent of both a native and nonnative speaker affect L2 English listeners' comprehension. This study also attempts to examine whether or not participants' ratings of speakers' accentedness and L2 speech comprehensibility will be influenced by the presence or absence of visual cues. To address these points, this study was guided by the following research questions:

1. *Does speaker's accent (native vs. nonnative) and stimulus condition (AV-gesture-face, AV-face, A-only) influence L2 English listeners' comprehension?*

   It is hypothesized that: a) listeners' comprehension scores will be significantly higher when listening to the native speaker, and b) listeners in the AV-gesture-face condition will achieve the highest scores when listening to both the native and nonnative speakers, followed by the AV-face group and A-only group.

2. *Does stimulus condition (AV-gesture-face, AV-face, A-only) affect L2 English listeners' ratings of comprehensibility and accentedness of native and nonnative speech?*

It is hypothesized that: a) listeners' ratings of accentedness and comprehensibility will vary across all three stimulus conditions, b) this variation will be most evident in the ratings of the nonnative speaker, c) native and nonnative speakers' speech will be easier to understand in the AV-gesture-face condition followed by the AV-face condition and A-only condition, and d) nonnative speaker's speech will be perceived as less accented in the AV-gesture-face condition followed by the AV-face condition and A-only .

3. *Does speakers' accent (native vs. nonnative) in each stimulus condition affect L2 English listeners' perception of and preference for visual cues?*

It is hypothesized that: a) nonnative users of English will express their preference for seeing the face and gestures of both the native and nonnative speaker, b) listeners will express their positive attitude towards seeing the face and hand of the nonnative speaker, and c) since cultural background can play a role in speakers' gestures, gestures produced by the native and nonnative speakers will vary in type (i.e., iconic, beat, deictic, and metaphoric) and in number of occurrences for each type. Thus, listeners' preferences for seeing the speakers' gestures may be influenced by the possibility that the native speaker uses more meaning-based gestures (e.g., iconic) than the nonnative speaker and vice versa.

4. *Does speaker's accent affect L2 listeners' preference for visual cues in communication and their choice of activities for the development of listening, speaking, and vocabulary?*

It is hypothesized that: a) L2 listeners will generally prefer auditory-visual communication rather than auditory only, b) L2 listeners' preference for visual cues will be greater when communicating with nonnative versus native speakers of English, and

c) L2 listeners will have greater preference for activities that involve visual cues than auditory only.

The present study adopted a between-groups design (see Figure 1). The between-groups independent variables are stimulus condition (i.e., AV-gesture-face, AV-face, A-only) and accent (i.e., native and nonnative) and the dependent variable is the listening comprehension scores of Arab university students who are nonnative listeners of English. A between-groups design rather than a mixed design was chosen for a number of reasons. First, it is important to ensure that the content delivered by both the native and nonnative speakers is the same.

All the participants complete an online consent form and background questionnaire.

Sound, screen, internet testing session

Group A: Complete a listening comprehensiontask delivered by the native speaker.

Group B: Complete a listening comprehension task delivered by the nonnative speaker.

Group(A-1)
AV-gesture-face
n = 20

Group(A-2)
AV-face
n = 20

Group(A-3)
A-only
n = 20

Group(B-1)
AV-gesture-face
n = 20

Group(B-2)
AV-face
n = 20

Group(B-3)
A-only
n = 20

Participants in each of the six group provide accentedness and comprehensibility ratings for the speaker they listened to.

Participants complete the SAVC questionnaire

Figure 1. Overview of Experimental Design
Note. The AV-face-gesture group hears and sees the speaker from the waist up, the AV-face group sees the speaker's face only, the A-only group hears an audio recording of the speaker. SAVC stands for speaker's accent and visual cues questionnaire.

Doing so helps eliminate content as a factor that may affect the type and number of gestures produced by the native and nonnative speakers. Therefore, to eliminate a carryover effect, all participants could not be presented with the same content produced by both speakers (i.e., accent had to vary between groups). To address the comparability of participants' listening proficiency across groups, a background questionnaire focusing on listening scores and exposure to aural English (see Appendix A) was administered and used as a basis for assignment of participants with comparable backgrounds across the stimulus conditions. Second, unlike speech perception studies in second language acquisition (SLA) in which stimulus conditions (i.e., AV-gesture-face, AV-face, A-only) involving segmental stimuli can vary within group with some counterbalancing of stimulus presentation order, in the case of listening comprehension there is a potential of content carryover and for this reason, stimulus condition also varied between-groups.

The design of the current study was also informed by observations from a pilot study which used speech samples produced by the same speakers on a related topic. The pilot study revealed: a) the number and type of gestures produced by the speakers varied across the different clips due to variation in the content, b) the test items that followed each clip also varied due to variation in the content, and c) the comprehensibility and accentedness of the nonnative speaker also varied across clips. For instance, the content of some clips contained a large number of instances of the word '*glaze*' which was a word that the nonnative speaker pronounced with a very strong accent, therefore, making it very difficult to understand. These observations taken from the pilot study emphasize the importance of adopting a between-groups design as shown in Figure 1 to help control for any possible confounding variables.

CHAPTER 2: METHODOLOGY

The methodology of the present study builds on Sueyoshi and Hardison (2005); however, some modifications were made. The materials used in the current study are: a) a listening comprehension task b) a comprehensibility and accentedness rating questionnaire b) speaker's accent and visual cues (SAVC) questionnaire, and finally d) an optional follow-up interview.

Participants

A total of 135 Arab L2 learners of English were recruited for the study (77 female, 58 male). All the participants ware native speakers of Arabic and were from Saudi Arabia ($n = 129$), Kuwait ($n = 1$), Lebanon ($n = 1$), Oman ($n = 1$), Syria ($n = 1$), Yemen ($n = 1$), and Egypt ($n = 1$). Participants were recruited either by: a) contacting the presidents of four Saudi student clubs in the US and UK, b) sending a text message to five WhatsApp groups which each consisted of at least 40 Saudi and/or Arab students studying in the US, c) searching online in the websites of various programs for the emails of university Arab or Saudi students studying in the US, d) snowball sampling; that is, each participant was asked to share the researcher's contact information and to spread the word about the study to friends, acquaintances, and family members who meet all the requirements needed to participate in the study. Throughout the recruiting process each participant received an email or WhatsApp message that informed them that the goal of the study is to investigate the listening comprehension of Arab undergraduate and graduate students studying in the Middle East or in an English-speaking country. The email or WhatsApp message also contained information about: a) the researcher's contact information, b) The TOEFL and IELTS scores required to participate in the study, c) a Google survey link that would allow participants interested in participating in the study to provide information, such as their name, email address, phone number, area of study, IELTS or TOEFL overall and listening

test score, and the year the TOEFL or IELTS test was taken. The researcher then contacted each participant via email, WhatsApp, or text message in order to schedule for a time to meet online via Zoom or Google meet. Based on the information provided by the students in the Google survey link, participants were assigned to one of the six conditions described earlier.

Out of an initial pool of 135 participants, the data of only 120 participants were analyzed. The remaining data were excluded due to: a) technical issues which led participants to skip one or more clips and hence were unable to first listen then read the listening comprehension test items ($n = 7$) or b) participants' inability to meet with the researcher as they took the test ($n = 8$) hence it was determined to remove their data to minimize, as much as possible, any possible confounding variables (e.g., playing the clips more than once, technical issues etc.). The final cohort of 120 participants were university students who were majoring in 39 different areas of study (e.g., engineering, medicine, computer science, linguistics, translation, and public health) in either the US ($n = 57$), UK ($n = 24$), Australia ($n = 2$), or Saudi Arabia ($n = 37$)[1]. The participants ranged in age from 18 to 44 with an average age of 29.11 ($SD = 5.08$) and had begun studying English at a mean age of 12.12 ($SD = 5.46$). Participants who were living abroad reported a maximum length of residence of 219 months and a minimum length of 4 months (see Table 1). The proficiency level of the participants was between the levels B2 and C1 in the Common European Framework of Reference (CEFR). To ensure that the participants were within those proficiency levels, they were required to indicate having achieved: a) an overall TOEFL (Test of English as a Foreign Language) internet-based test score of 72 or above, or b)

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[1] During data collection, seven participants reported their recent (i.e., three months to a year) graduation from their programs; four reported graduating from their programs four to seven years ago and were in the stage of applying for Ph.D. programs and/or were at the time of this study working in professional environments where English is the target language.

an overall IELTS test (International English Language Testing System) score of 6 above, or c) an

overall Duolingo test score of 100 or above[2]. The participants also indicated achieving a score of

17 or above on the listening section of the TOEFL test, or a score of 6 or above on the listening

section of the IELTS test, or a score of 95 or above on the comprehension subsection of the

Duolingo test.

Table 1
Breakdown of Length of Residence (in months)

Stimulus Group	0	4-6	7-12	13-18	19-25	26-32	33-39	40-46	47-53	54 +
AV-gesture-face	12	1	2	1	3	3	2	0	4	13
AV-face	14	0	3	2	3	1	5	0	0	12
A-only	11	1	2	3	1	0	3	1	2	16

None of the participants knew the speakers they listened to and only 9 out of the 120

participants[3] reported being familiar with the nonnative speaker's accent which is Vietnamese.

The participants' background questionnaire responses which sought information about the

participants' gender, country of origin, educational level, area of study, scores for a language

standardized test and the year the test was taken (see Appendix A) were used to ensure that the

participants' background information was compatible across the six stimulus conditions they

were assigned to as follows: a) native speaker-AV-gesture-face ($n= 20$), b) native speaker-AV-

face ($n= 20$), c) native speaker-A-only ($n= 20$), d) nonnative speaker-AV-gesture-face ($n= 20$), e)

nonnative speaker-AV-face ($n= 20$), and f) nonnative speaker-A-only ($n= 20$) (see Figure 1).

Information about the participants' weekly English language usage was sought to gain a better

understanding of the participants' language background (see Tables 2 & 3).

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[2] Only one participant out of the 120 participants reported taking the Duolingo test.
[3] Nonnative AV-gesture-face condition ($n= 4$), nonnative AV-face condition ($n= 2$), nonnative A-only condition ($n= 3$).

Table 2

Breakdown of the Language Usage of Participants Who Listened to the Native Speaker (in hours)

| | Interaction with native speakers | | | | Interaction with nonnative speakers | | | | TV | |
| | face to face | | mask to mask | | face to face | | mask to mask | | | |
Stimulus Condition	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max
AV-gesture-face	11.18 (*15.84*)	0-50	5.68 (*12.30*)	0-50	*10.75 (14.95)*	0-50	9.30 (*15.44*)	0-50	19.45 (*19.57*)	1-80
AV-face	3.11 (*3.81*)	0-12	2.88 (*6.92*)	0-25	5.26 (*15.99*)	0-72	2.89 (*4.54*)	0-16	11.55 (*8.70*)	2-30
A-only	12.66 (*22.66*)	0-100	3.50 (*7.07*)	0-30	7.69 (*16.36*)	0-70	3.20 (*6.02*)	0-20	15.11 (*17.34*)	0-80

Table 3

Breakdown of the Language Usage of Participants Who Listened to the Nonnative Speaker (in hours)

| | Interaction with native speakers | | | | Interaction with nonnative speakers | | | | TV | |
| | face to face | | mask to mask | | face to face | | mask to mask | | | |
Stimulus Condition	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max	Mean (*SD*)	Min-Max
AV-gesture-face	12.15 (*25.99*)	0-110	4.84 (*9.52*)	0-40	*9.28 (12.34)*	0-40	6.50 (*10.83*)	0-40	24.58 (*2.87*)	1-100
AV-face	6.20 (*9.45*)	0-36	1.65 (*2.80*)	0-12	9.71 (*14.83*)	0-60	5.68 (*8.76*)	0-40	17.80 (*29.25*)	0-112
A-only	10.88 (*22.66*)	0-98	6.88 (*12.36*)	0-45	7.32 (*9.90*)	0-30	9.32 (*10.63*)	0-35	10.3 (*11.85*)	0-50

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Due to the COVID-19 restrictions, participants' mask-to-mask (i.e., any mouth and nose covering) interactions were also obtained. Although various pieces of background information were obtained, the primary objective when assigning the participants to one of the six groups was to ensure that the participants' listening and overall proficiency levels were balanced, as much as possible, across all six conditions (see Tables 4 & 5).

Table 4
Breakdown of Participants' IELTS Listening Sub-score

	Stimulus Condition					
	Native Speaker			Nonnative Speaker		
IELTS Listening Score	*AV-gesture* (*n=20*)	*AV-face* (*n=20*)	*A-only* (*n=20*)	*AV-gesture* (*n=20*)	*AV-face* (*n=20*)	*A-only* (*n=20*)
6	4	5	5	3	5	4
6.5	6	5	6	6	4	6
7	4	4	4	2	3	3
7.5	3	1	1	5	4	3
8	1	2	3	1	2	2
8.5	1	2	1	2	1	1
9	1	1	0	1	1	1

Table 5
Breakdown of Participants' Overall IELTS Score

	Stimulus Condition					
	Native Speaker			Nonnative Speaker		
IELTS Overall Score	AV-gesture (*n=20*)	AV-face (*n=20*)	A-only (*n=20*)	AV-gesture (*n=20*)	AV-face (*n=20*)	A-only (*n=20*)
6	5	5	5	4	3	5
6.5	5	5	7	7	8	7
7	5	7	6	6	7	5
7.5	3	3	0	1	1	2
8	1	0	0	2	1	0
8.5	1	0	1	0	0	1
9	0	0	1	0	0	0

While assigning participants to one of the six groups, the overall and listening scores of participants who took the TOEFL or Duolingo tests were compared to the IELTS academic

module scores and converted using the IELTS conversion tables. [4] To ensure that the participants' overall and listening IELTS proficiency scores were statistically comparable, a one-way ANOVA was conducted. Prior to running a one-way ANOVA, the assumptions of normality and homogeneity of variances for the listening proficiency scores were checked. Shapiro Wilk's test of normality was significant (i.e., less than .05) in four of the six conditions (p = .030 for native speaker AV-gesture-face, p = .017 for the native speaker AV-face, p = .015 for the native speaker A-only, p = .048 for the nonnative speaker A-only). To further examine the normality of the data, skewness and kurtosis coefficients[5] for the four conditions were assessed. The assessment revealed that the skewness and kurtosis coefficients were between the threshold of ± 1.96 (Field, 2009). The skewness and kurtosis coefficients that were obtained indicated that the data were within the bounds of normal distribution. Levene's test for equality of variances was also checked and revealed that the variances were equal, F (5, 114) = .252, p = .938. Since both assumptions were met, a one-way ANOVA was conducted and revealed no significant differences in participants' listening scores across the six different conditions, F (5,114) = .252, p = .938.

The assumptions of normality and homogeneity of variances were also assessed for the IELTS overall scores. Shapiro Wilk's test of normality was significant in five of the six conditions (p = .015 for native speaker AV-face, p = .001 for the native speaker A-only, p = .020 for the nonnative speaker AV-gesture-face, p = .022 for nonnative speaker AV-face, p = .004 for

nonnative A-only). To further assess the normality of the data, skewness and kurtosis coefficients for the four conditions were assessed and obtained. The assessment revealed that the skewness and kurtosis coefficients were beyond the threshold of $\pm$ 1.96 for native speaker A-only ($p = .001$) and nonnative speaker A-only ($p = .004$). Levene's test for equality of variances was checked and revealed that the variances were equal, $F (5, 114) = .583, p = .713$. Although the assumption of normality was not met, a one-way ANOVA was conducted anyway since a one-way ANOVA is robust to nonnormality, especially when there is an equal number of participants in each group (Lix, Keselman, Keselman, 1996). The one-way ANOVA revealed no significant differences in the participants' overall IELTS scores across the six different groups, $F (5, 114) = .108, p = .990$.

Materials

Selection of Native and Nonnative Speakers

Two speakers were chosen to help create and record the listening comprehension task. One speaker is a 33-year-old female native speaker of English from the upper Midwestern part of the US. This native speaker of English has a bachelor's degree in international studies, an MA in teaching Arabic as a foreign language and is currently a Ph.D. student in a second language studies program at a large Midwestern university in the US. She has eight and half years of language teaching experience; and was chosen because of her natural and frequent use of gestures when communicating with others and her clear English speech.

The other speaker is a 27-year-old male[6] nonnative speaker of English from Vietnam who

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[6] "The body of material on nonverbal gender differences is sometimes contradictory and certainly inconclusive" (Julian, 1987, p.5). Lott (1981) also states "both women and men manifest individual differences along all behavioral dimensions." (p.179)

started studying English in high school. This nonnative instructor has a bachelor's degree in teaching English as a foreign language and has earned his master's degree in teaching English as a second language (TESOL) from a large Midwestern university in the US which requires a minimum overall IELTS score of 6.5 and no sub-score below 6.5. He has three years of teaching experience at a language center in Vietnam in which he taught all four skills to beginner, intermediate and advanced learners. He also has given Vietnamese learners of English lessons to help improve their scores on the speaking and listening sections of the IELTS test. This nonnative instructor was chosen because of his natural use of gestures when communicating with others and because of his unfamiliar and strong Vietnamese accent. The Vietnamese instructor's accent is characterized as strong on the basis of a pilot study which involved 24 native speakers of English who were placed in three different stimulus conditions: AV-gesture-face ($n = 9$), AV-face ($n = 8$), A-only ($n = 7$). The 24 native speaker participants were asked to rate the Vietnamese speaker's accent on a 9-point scale where 1 represented *very strong accent* and 9 represented *native-like accent*. Their mean ratings for accentedness were: 2.78, 3.00, 2.42 respectively. Both speakers were informed that the purpose of the study is to investigate the effects of accent on second language learners' listening comprehension.

Development of Stimuli and Listening Comprehension Tasks

A topic related to ceramics was chosen for the present study. The topic[7] was taken from a ceramics handbook found online (https://ceramicartsnetwork.org); however, for the purpose of the present study some modifications were made to the original text retrieved online. This topic was chosen "to avoid any influence of prior knowledge and to ensure a sufficient amount of

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[7] This topic was also used in the pilot study mentioned throughout this paper.

gesture use" (Sueyoshi & Hardison, 2005, p. 670). Furthermore, Feyereisen and Harvard (1999) and Alibali (2005) stated that speakers produce more gestures when talking about topics that involve descriptions of how to complete a task, descriptions of a place, or spatial information. The content of the text delivered to the participants covered three main topics in ceramics which are: a) how to mix clay bodies b) how to build clay bodies c) how to glaze clay bodies. Listening transcripts designed for learners from B2 to C2 proficiency levels were analyzed using Flesch-Kincaid readability test and Cobb's online program known as Lexical Tutor (Cobb, 2008). According to the Flesch – Kincaid readability test, the grade level for the text delivered by the speakers is 6.7(i.e., suitable for 6th graders) with a readability ease score of 76.9[8]. Also, the online vocabulary program Lexical Tutor (Cobb, 2008) indicated that the type-token ratio of the listening text is 0.21, the lexical density (i.e., the number of content words divided by the overall number of words in the text) is .48 and 88.97% of the words are from the most frequent 2000 word families. These results revealed that the readability ease score, grade level, and vocabulary profiles of the listening transcripts chosen for this study are similar to transcripts designed for B2 proficiency level. It is important to note that only 10 out of 120[9] reported being familiar with the topic (i.e., ceramics); therefore, the majority of participants had no background knowledge to rely on which, as reported by many participants, made the task more challenging.

The text was divided into seven parts (see Appendix B). Both the native and nonnative speakers were instructed to deliver the content in front of an audience of three Arab learners of English who were unfamiliar with ceramics and the speakers. An audience was included because

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[8] As the score increases, the reading difficulty decreases.
[9] The number of participants who indicated in the SAVC questionnaire taking classes in ceramics or pottery were as follows: (native) AV-gesture-face = 1; (native) AV- face = 0; (native); A-only = 0; (nonnative) AV-gesture-face = 4; (nonnative) AV- face = 2; (nonnative) A-only = 3.

it has been reported that speakers produce more gestures, especially representational gestures, when they see their audience (Alibali, 2009; Alibali, Heath, & Myers, 2001). The speakers were instructed to deliver the same content provided in the text given to them. This was done to ensure that both the native and nonnative speakers presented the same amount of information and a similar number of words. The speakers were advised to avoid reading the transcripts and thus both were given three weeks to rehearse each of the seven short parts of the text prior to meeting with the researcher for recording. Both speakers were instructed to deliver the content as naturally as possible. Since holding notes does not prevent speakers from gesturing (Pennington, Chun, & Hardison, 2002), they were also permitted to hold and look at their notes as they delivered the content of the texts.

Due to COVID-19 restrictions, each speaker met with the researcher and the three audience members online. Prior to the scheduled recording date, the researcher provided each speaker with a Sony digital video camera recorder (Model HDR-CX580) and a list of instructions that would help guide each speaker as they recorded themselves. Each speaker provided the researcher with a demo recording of themselves presenting the text given to them. This was done to help the researcher ensure that: a) The room lighting was not dim, b) the background wall behind each speaker was white and clear (i.e., no posters or decorations), c) the camera was positioned in a manner that captured the speakers' face and full body movements, and d) the camera was positioned close enough to the speakers to ensure that their lip movements could be clearly seen by the participants. After the lectures for each speaker were video recorded, each video was edited using iMovie. iMovie helped create videos that were tailored for each condition (i.e., AV-gesture-face, AV-face, and A-only). The video recordings of each speaker's lecture were edited into seven clips that were around one to three minutes in length. The overall

total duration of all seven clips for the native and nonnative lectures were fairly similar in length. The total duration of seven clips for the native speaker was 15 minutes and 58 seconds; and the total duration of seven clips for the nonnative speaker was 14 minutes and 36 seconds. The goal behind dividing the recording into short clips was to reduce participants' reliance on their memory when answering the comprehension questions (Sueyoshi & Hardison, 2005). Doing so is important, especially because participants were not permitted to take notes during the experiment and were allowed to listen to each clip only once. Also, having the speakers present short clips was done to ensure that the speakers present the content more naturally and easily during the recording process.

After the two lectures were recorded, each was edited into seven clips and 34[10] multiple-choice questions for each lecture were created (see Appendix C). The 34 test items were created by a test developer who has an MA in TESOL and at least seven years of experience in creating language tests. Prior to creating the test items, the test developer was given: a) copies of the transcripts for both the native and nonnative speakers and b) access to all the seven clips for both the native and nonnative speakers[11]. Each clip for each lecture was followed by three to six multiple choice questions; and each question was followed by three plausible options[12]. The variation in the number of questions that followed each clip occurred due to differences in the amount of information presented in each clip. The clips and items for each of the two lectures were then entered separately into an online tool known as Qualtrics (https://www.qualtrics.com). All the clips for both the native and nonnative speakers were evaluated for auditory intelligibility

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[10] On the actual test, the participants completed 35 test items; however, one item was removed to increase the reliability of the testing instrument.
[11] The test developer was able to see the speakers' face and gestures.
[12] "Over 80 years of research in educational measurement has shown that the optimal number of options in a multiple-choice question is three" (Winke, 2018, p. 19)

by two Arab speakers of English. The listening comprehension tasks were immediately followed by two 9-point Likert scale items that explored the speech accentedness and comprehensibility of the native speaker (recommended by Smith and Bisazza, 1982) and the nonnative speaker.

Questionnaire

A 9-point Likert scale was developed to measure both accentedness and comprehensibility (see Appendix D). Following data collection, participants were asked to rate the native and nonnative speakers' accent where 1 represents *very strong nonnative accent* and 9 represents *native-like accent*. Participants were also asked to indicate how difficult it was to comprehend the native and nonnative speakers, where 1 represents *very difficult to understand* and 9 represents *very easy to understand*.

A second questionnaire was used in this study following data collection to investigate participants' preference for and perceptions of visual cues which was referred to earlier as SAVC (see Appendix E). The questionnaire was developed by drawing on items previously used in a questionnaire by Sueyoshi and Hardison (2005); however, some modifications were made for the purpose of the present study. The questionnaire consisted of three parts. In the first part, the number and content of items on the questionnaire slightly varied across all six conditions (i.e., native speaker AV-gesture-face, native speaker AV-face, native speaker A-only, nonnative speaker AV-gesture-face, nonnative speaker AV-face, nonnative speaker A-only). Generally, the items for that part were developed to investigate participants' perception of and preference for visual cues in relation to the condition they were in.

The second part of the questionnaire was given to all the participants[13]. Item one in part

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[13] At the beginning of part two of the questionnaire, participants who listened to the nonnative speaker in all three stimulus conditions were asked to indicate whether or not they were familiar with the Vietnamese accent.

two of the questionnaire asked participants whether or not they had taken classes in ceramics. Items (2-5) in the second part sought information about the activities participants engaged in most often when using English; and the various daily activities that the participants felt contributed to the development of their English listening, speaking, and vocabulary skills. The third part of the questionnaire was also given to all the participants and included items (6-25) which helped further examine the participants' general perception of and preference for visual cues in everyday communication. Items in part one and items (6-25) in part two and three of the questionnaire were followed by a 9-point Likert scale, where 1 represented *strongly disagree and* 9 was *strongly agree*. All the items on the questionnaire were developed following Irwing and Hughes' (2018) guidelines for Likert type items. The questionnaire also included an optional open-ended question and seven interview questions that were given to participants who expressed their willingness to be interviewed. The interviews were conducted in either Arabic or English. The participants were given the option to choose the language they felt more comfortable with.

Procedure

Listening Comprehension Test

Due to COVID-19 restrictions, data collection was carried out online via Zoom or Google Meet over a period of 15 weeks. A few minutes before the scheduled meeting time, each participant received an email that contained: a) a link that allowed the participants to virtually access the researcher's Zoom or Google Meet room, and b) a Qualtrics link that allowed the participants to gain access to the consent form, background questionnaire, the listening comprehension task and the two questionnaires (i.e., accentedness and comprehensibility questionnaire; and SAVC questionnaire). The participants were asked to access their emails and

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to click and access both the Qualtrics link and the Zoom or Google Meet link simultaneously.

All the participants were asked to read an online consent form and to provide all the necessary background information. Next, the participants were asked to listen to a 10-second YouTube countdown video prior to starting the actual listening comprehension task. The goal behind using the countdown video was to ensure that the volume, screen, and internet connection on their devices were functioning properly and to also allow the participants to adjust the volume to the level they preferred. Prior to taking the listening comprehension task, participants were instructed to complete the listening comprehension task in a quiet room and to listen to each clip once. Although the participants were informed that there was no time limit for completing the experiment, it took them approximately one hour to complete all the required tasks.

Participants in the AV-gesture-face and AV-face were instructed to make sure they looked at the screen as if the speaker were talking in-person to them. This was done to ensure that the participants did not get distracted from the screen in front of them and to ensure that they saw the speaker's face and gestures while listening to all seven clips[14]. After completing the listening task, the participants were asked to complete the two questionnaires. Having participants complete this questionnaire after finishing the listening comprehension task was done to ensure that the items on the questionnaire did not explicitly draw the attention of participants to the speaker's lip movements or gestures. Finally, after completing the questionnaire, the participants were asked if they would be willing to participate in an optional interview that consisted of seven questions. Throughout the experiment, the researcher was

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[14] For cultural and privacy reasons, some Saudi participants, both male and female, decided to leave their cameras off during the Zoom meeting which prevented the researcher from monitoring the participants' attention to the screen. The number of participants in each condition was: (native) AV-gesture-face = 6, (native) AV-face = 5, (nonnative) AV-gesture-face = 5, (nonnative) AV-face = 7

virtually present with each participant to ensure that they followed all the instructions and also to

help guide the participants and answer any questions they might have.

CHAPTER 3: RESULTS

Gestures of Native and Nonnative Speakers

Prior to examining the participants' data, it was necessary for the purpose of the present study to provide a description of both the native and nonnative speakers' gestures. Nonverbal behavior articulated by the hand was identified, categorized and tabulated for each speaker. Two types of gestures were excluded: head movements such as nodding or movement from side to side, and habitual nonverbal behavior that does not convey meaning, such as touching or adjusting one's glasses during the lecture. In the present study, the identification of gestures was guided by what Kendon (1972) referred to as the gesture phrase (G-phrase). The G-phrase consists of three main gesture/movement phases: a) the preparatory phase, b) the stroke or 'nucleus' phase, which is the phase that "most individuals are aware of and associate with a particular utterance; it is the most meaningful phase" (Hardison, 2018, p.233), and c) the retraction phase, which is "either moving the limb back to its rest position or reposition it for the beginning of a new gesture phase" (Kendon, 1987, p. 77).

All the gestures that were identified for the purpose of the present study involved the stroke phase (i.e., the essential part of the gesture) while the occurrence of the other two phases was optional. The gestures identified were then coded by adapting the categories defined by McNeill (1992) which are: a) iconics, b) deictics, c) metaphorics, and d) beats (see Figure 2). As mentioned earlier in the paper, there are instances during speech when more than one type of gesture would overlap. In the present study, gestures that overlapped were identified, coded and tabulated separately. The frequencies and percentages of each type of gesture produced by each speaker were tabulated (see Table 6).

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Iconic gesture	Deictic gesture	Metaphoric gesture	Beat gesture
Native speaker moves the top part of left thumb back and forth when she says: "a *spray bottle to evenly spray water*".	Nonnative speaker uses right hand to point at himself when he says: *"my system"*	Native speaker slightly tilts left hand from side to side to convey the meaning of the word "about" when she says: "*about 30 % of the weight of the clay"*	Nonnative speaker moves right hand upwards and downwards with index and thumb positioned against each other for emphasis when he says: "*you have to use the least amount of water as possible*"
"You'll use *a spray bottle to evenly spray* water on the surface of the clay*".*	*"My system* for glazing evolved with my own body of work".	"You want to add *about 30% of the weight of the clay* in water".	"Y*ou have to use the least amount of water as possible* even when you are making corrections".

Figure 2. Illustration of Gesture Types
Note. The beat gesture presented in the figure above is an example of an instance when more than one gesture would overlap. The speaker produced a beat gesture with a semantic element in the position of the index finger and thumb which represents a common iconic gesture that emphasizes a small amount of something.

Table 6
Frequency & Percentage of Native and Nonnative Speakers' Gestures

	Gesture Types				
	Beat	Iconic	Deictic	Metaphoric	Total
Native speaker	171 (*59.38 %*)	75 (*26.04 %*)	24 (*8.33 %*)	18 (*6.25 %*)	288
Nonnative speaker	220 (*71.20 %*)	52 (*16.83 %*)	11 (*3.56 %*)	26 (*8.41 %*)	309

The analysis of the speakers' gestures helped gain a general idea of the number and type of gestures the speakers tended to use. The analysis uncovered a total of 288 gestures produced by the native speaker and a total of 309 produced by the nonnative speaker. As predicted, the most frequent type of gestures produced by both speakers were beat gestures which were used more by the nonnative speaker. Interestingly, the second most frequent type of gesture produced by both speakers was iconic gesture and this could be due to the nature of the topic they were presenting which involved many descriptions. A closer look at the number of iconic gestures revealed that the native speaker produced more iconic gestures than the nonnative speaker. As

for deictic and metaphoric gestures, it appears that the native speaker produced a greater number of deictic gestures whereas the nonnative speaker produced a greater number of metaphoric gestures. An important point to highlight which was observed during the analysis is the nonnative speaker's very subtle (i.e., less rapid and closer to the body) manner in producing his gestures which made his gestures less obvious and very difficult to detect and analyze. The native speaker, on the other hand, tended to produce her gestures in a very salient and clear manner.

RQ1: Effects of Speaker's Accent and Stimulus Condition on Listening Comprehension

To investigate the first research question, the listening comprehension scores of the participants in each condition (i.e., native speaker-AV-gesture-face, native speaker-AV-face, native speaker-A-only, nonnative speaker-AV-gesture-face, nonnative speaker-AV-face, nonnative speaker-A-only) were tabulated separately. One point was given for each correct answer and zero was given for each incorrect answer. The total number of correct answers was 34. The reliability estimates for the listening comprehension task in all three stimulus conditions (i.e., AV-gesture-face, AV-face, AV-audio only) were measured using Cronbach's alpha for reliability.[15] Analysis of the data revealed moderate to high reliability estimates that are within the preferred range of .70 to 1.00 (Nunnally, 1978). The reliability estimates were: a) .730 for the AV-gesture-face condition, b) .850 for the AV-face condition, and c) .861 for the A-only. After obtaining the reliability estimates, descriptive statistics were calculated for all six conditions (see Table 7). The results showed higher mean accuracy scores for participants who listened to the native speaker versus the nonnative speaker. The results also uncovered that the

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[15] Since the nonnative speaker had a strong accent, the reliability of the instrument was measured by examining the scores of the participants who listened to the native speaker only.

mean score for participants who listened to the native speaker were highest in the AV-gesture-face followed by the AV-face condition. The lowest mean scores were observed in the A-only condition in which visual input was completely absent. On the other hand, the mean scores of participants who listened to the nonnative speaker across three stimulus conditions were very similar and close to each other. The mean scores of participants who received visual input did not perform better than those in the A-only condition, but rather, interestingly, the highest mean score with the smallest standard deviation was observed in the A-only condition.

Table 7

Descriptive Statistics for Listening Comprehension Test Scores

Stimulus Condition	**Native Speaker**					**Nonnative *Speaker***				
	n	Min	*Max*	Mean *(SD)*	95% CIs	*n*	Min	Max	Mean *(SD)*	95% CIs
AV-gesture-face	20	14	31	23.80 *(4.79)*	21.55, 26.05	20	9	24	17.15 *(4.30)*	15.13, 19.17
AV-face	20	11	34	22.00 *(6.64)*	18.89, 25.11	20	5	27	16.75 *(4.95)*	14.43, 19.07
A-only	20	12	33	21.65 *(6.75)*	18.48, 24.82	20	13	23	17.80 *(2.98)*	16.40, 19.20

Note. The maximum score on the listening comprehension test = 34

Prior to running a two-way between groups ANOVA to examine the effects of accent and stimulus condition on listening comprehension of the participants, the assumptions of normality and homogeneity of variances were checked. Shapiro-Wilk's test revealed that the data were normally distributed for each cell of the design ($p = .219$ for native speaker AV-gesture-face, $p = .748$ for native speaker AV-face, $p = .291$ for native speaker A-only, $p = .541$ for nonnative speaker-AV-gesture-face, $p = .963$ for nonnative speaker AV-face, $p = .512$ for nonnative speaker-A-only).
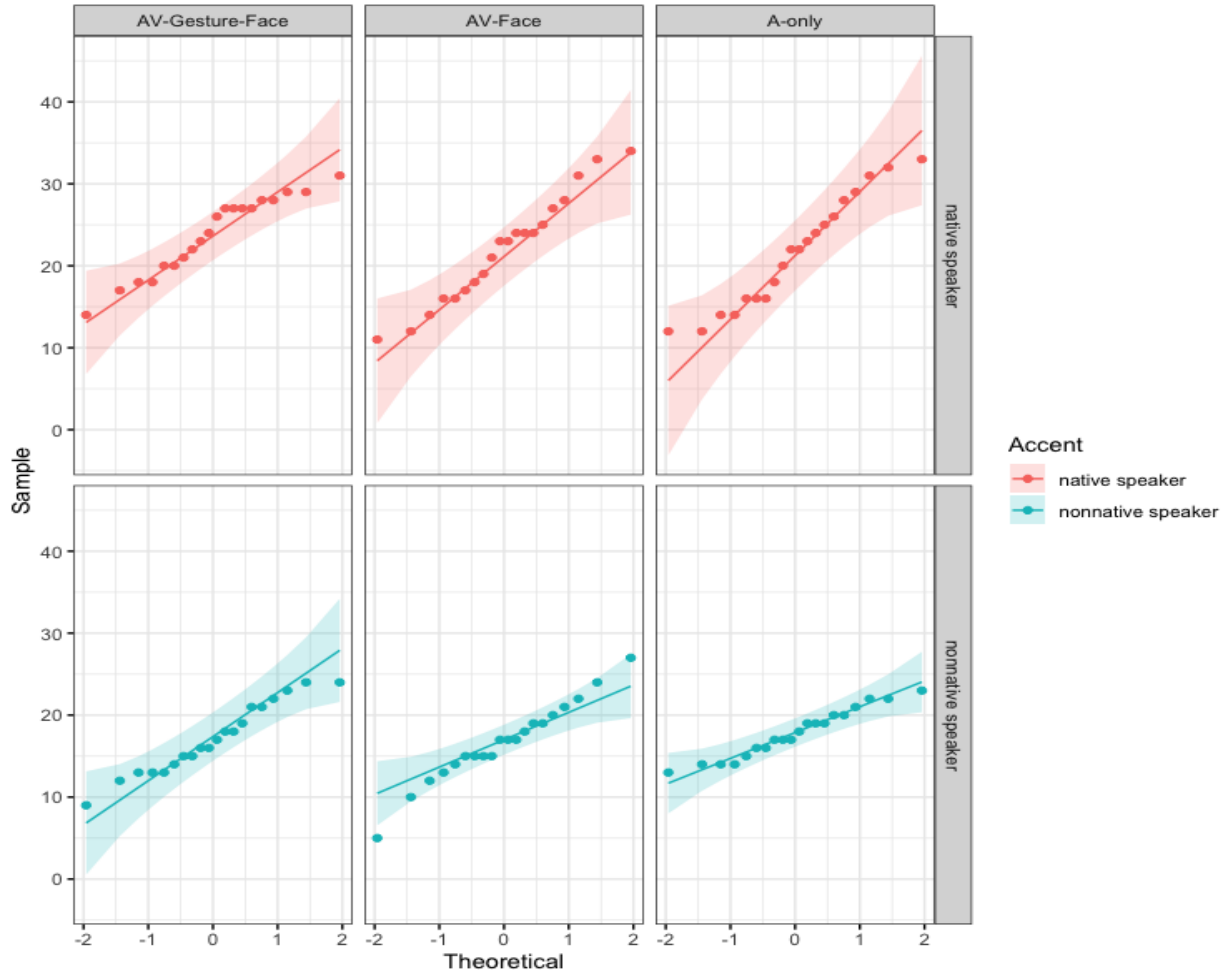
Figure 3. Q-Q Plot for Visual Examination of Normality of the Data

Homogeneity of variances was assessed by Levene's test which indicated heterogeneous variances, $F (5, 114) = 3.593$, $p = .005$. Visual inspection of both Q-Q plots and boxplots (see Figures 3 & 4) confirmed the normality of the data and the unequal variances. Although the assumption of homogeneity of variances was violated, the two-way ANOVA was conducted anyway since it is robust to heterogeneity of variances when: a) the assumption of normality is met, and b) group sizes are equal (Jaccard, 1998; "The Assumption of Homogeneity of Variances", 2021).
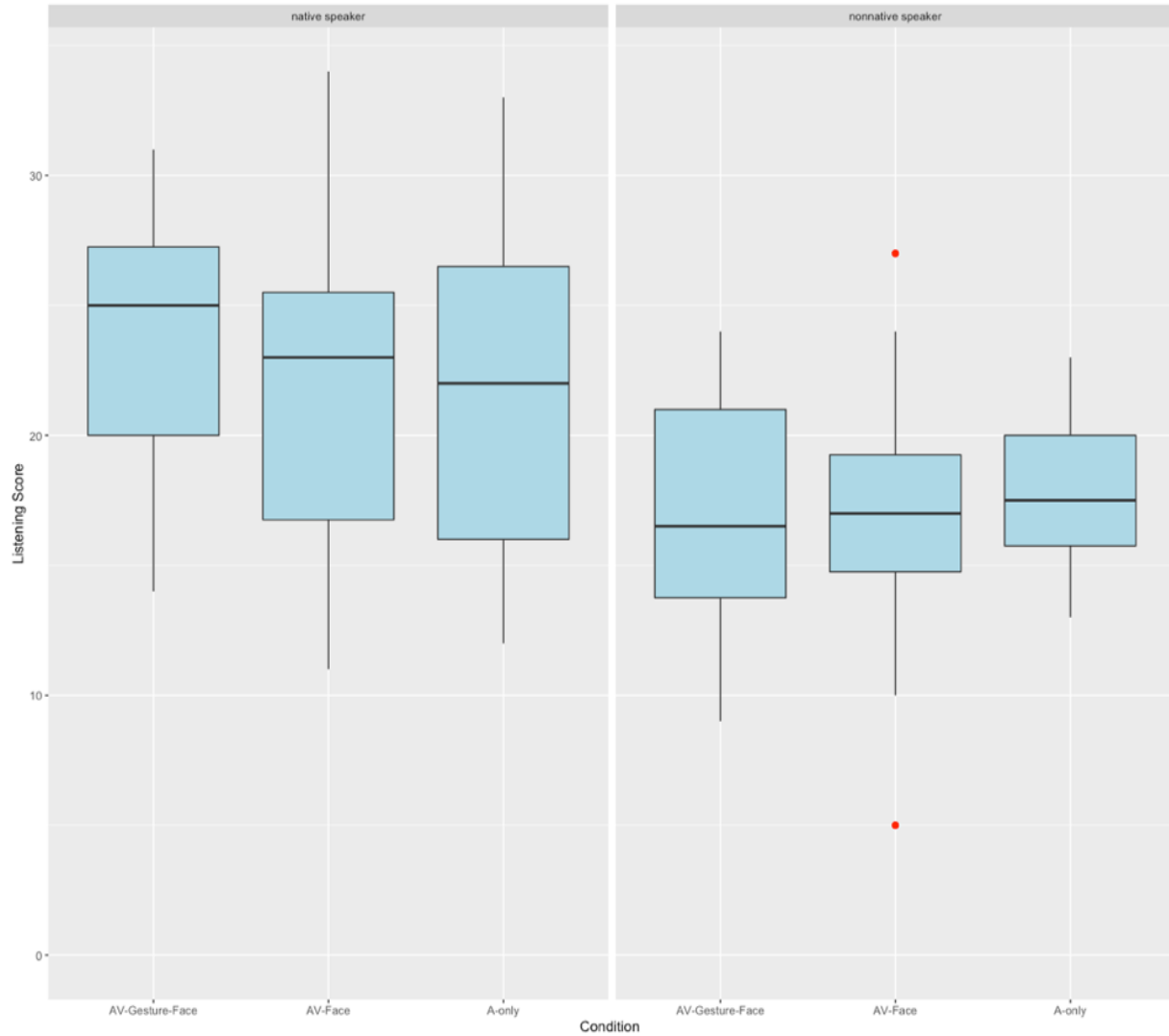
Figure 4. Boxplot for Visual Examination of Homogeneity of Variances

The independent variables used to run the two-way ANOVA were accent and stimulus condition and the dependent variable was listening comprehension scores. The two-way ANOVA was used to determine if there was an interaction effect between accent and stimulus condition on participants' listening comprehension scores. Results revealed that the interaction effect between accent and stimulus condition on listening comprehension scores was not significant, $F(2, 114) = .713$, $p = .492$, partial $\eta^2 = .012$. There was also no main effect of stimulus condition, $F(2, 114) = .460$, $p = .633$, partial $\eta^2 = .008$. However, there was a

significant main effect of accent, $F(2, 114) = 30.085$, $p = .001$, partial $\eta^2 = .209$. This finding indicated that the listening comprehension scores of participants who listened to the native speaker were significantly higher than the listening comprehension scores of participants who listened to the nonnative speaker (see Figure 5).
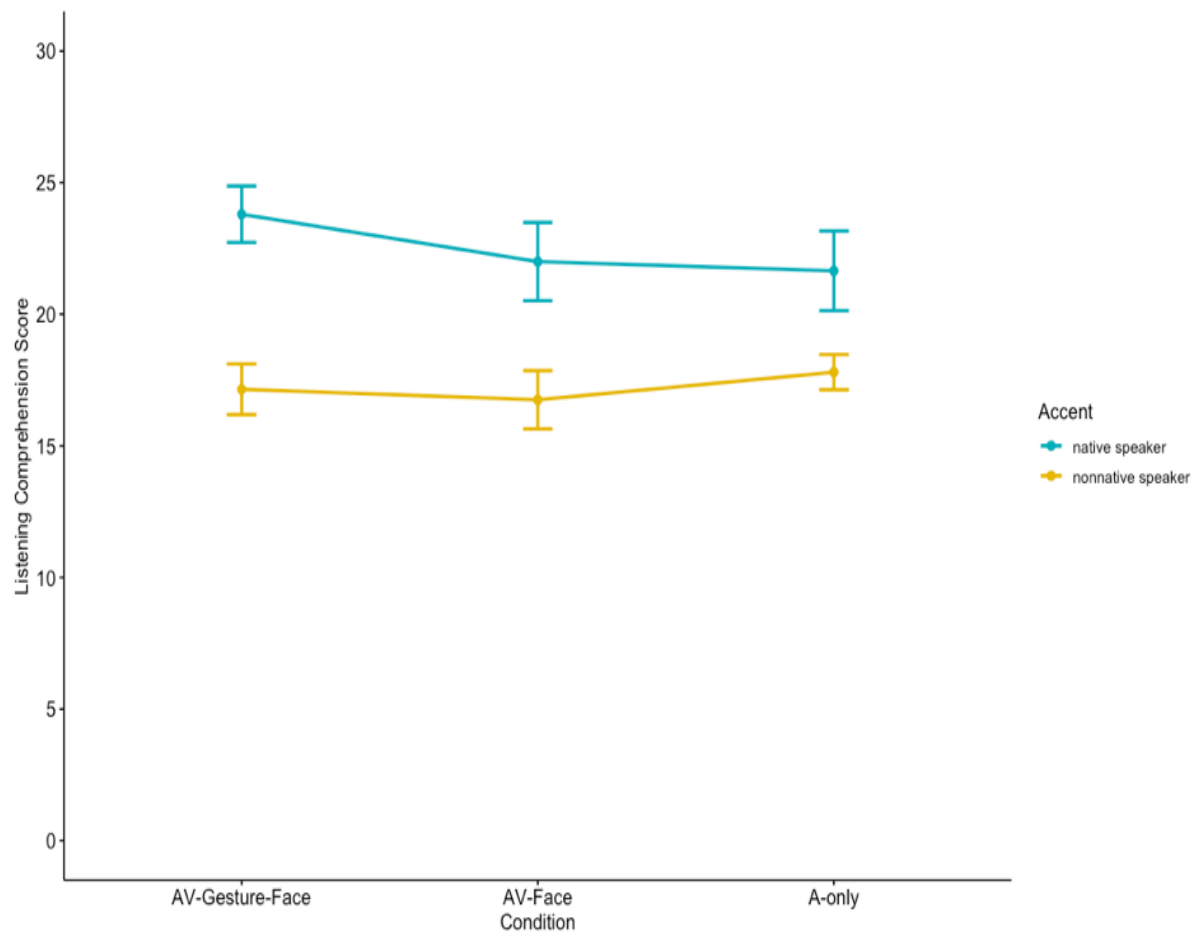
Figure 5. Effects of Accent on Participants' Listening Comprehension Scores

RQ2: Effects of Stimulus Condition on Ratings of Comprehensibility and Accentedness

The second research question examined whether or not the L2 listeners' ratings of accentedness and comprehensibility for the native and nonnative speakers were significantly different across each stimulus condition. Descriptive and inferential statistics for ratings of accentedness and comprehensibility in all the conditions for each speaker were examined (see Tables 8 & 9). For accentedness ratings 1 represented *very strong nonnative accent* and 9

represented *native-like accent*. For comprehensibility ratings 1 represented *very difficult to understand* and 9 represented *very easy to understand*.

Table 8
Native Speaker: Descriptive Statistics for Accentedness and Comprehensibility Ratings

Stimulus Condition	*n*	Min	Max	Accentedness Mean (*SD*)	95% CIs	Min	Max	Comprehensibility Mean (*SD*)	95% CIs
AV-gesture-face	20	7	9	8.65 (*.587*)	8.38, 8.92	6	9	8.30 (*.923*)	7.87, 8.73
AV-face	20	3	9	8.00 (*1.55*)	7.27, 8.73	4	9	7.35 (*1.63*)	6.59, 8.11
A-only	20	6	9	8.35 (*1.04*)	7.86, 8.84	6	9	7.75 (*1.07*)	7.25, 8.25

Table 9
Nonnative Speaker: Descriptive Statistics for Accentedness and Comprehensibility

Stimulus Condition	*n*	Min	Max	Accentedness Mean (*SD*)	95% CIs	Min	Max	Comprehensibility Mean (*SD*)	95% CIs
AV-gesture-face	20	1	2	1.20 (*.410*)	1.01, 1.39	1	3	1.55 (*.759*)	1.19, 1.91
AV-face	20	1	7	2.05 (*1.73*)	1.24, 2.86	1	6	2.00 (*1.37*)	1.36, 2.64
A-only	20	1	4	1.80 (*1.05*)	1.31, 2.29	1	5	2.10 (*1.41*)	1.44, 2.76

Tests of Parametric Assumptions and Analysis of Ratings for Native Speaker

Prior to running a one-way ANOVA to determine if there were significant differences in L2 listeners' ratings of accentedness and comprehensibility across all three conditions for the native speaker, the assumptions of normality and homogeneity of variances were examined. For accentedness and comprehensibility ratings for the native speaker, Shapiro-Wilk's test of normality was significant for the accentedness ratings data ($p = .001$ for the AV-gesture-face condition, $p = .001$ AV-face condition, $p = .001$ A-only condition) and for comprehensibility ratings data ($p = .001$ for the AV-gesture-face condition, $p = .011$ for AV-face condition, $p =$

.011 for A-only condition). This significance indicated that the accentedness ratings data were not normally distributed.

To further examine the normality of the data, skewness and kurtosis coefficient for accentedness and comprehensibility were assessed to ensure that the data were not significantly beyond the bounds of normal distribution. The analysis revealed that the skewness and kurtosis coefficient for accentedness and comprehensibility were beyond the threshold of $\pm$ 1.96 (see Table 10). These coefficients indicated the assumption of normality had been violated.

Table 10
Native: Skewness and Kurtosis Coefficients for Accentedness and Comprehensibility Ratings

Stimulus Condition	Accentedness		Comprehensibility	
	Skewness coefficient	Kurtosis coefficient	Skewness coefficient	Kurtosis coefficient
AV-gesture-face	-2.97	1.64	-2.19	.36
AV-face	-4.08	4.75	-1.07	-.96
A-only	-2.78	.79	-.59	-1.10

The assumption of homogeneity of variances was also checked and Levene's test for equality of variances indicated that this assumption had been violated for accentedness, F (2,57) = 3.588, p = .034 and for comprehensibility, F (2,57) = 6.503, p = .003. Since the assumptions of normality and homogeneity were violated, the bootstrapping method[16] was used to analyze the mean difference (*MD*) between the levels of the stimulus condition variable (Field, 2018). Comparison of the AV-gesture-face and AV-face conditions was significant for comprehensibility ratings, *MD* = .950, *SE* = .414, BCa 95% CI [.079, 1.82] and accentedness ratings, *MD* = .650, *SE* = .375, BCa 95% CI [.053, 1.50] since the bootstrapped CIs do not cross zero.

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[16] For reader information, the Kruskal-Wallis test produced the following results for: a) accentedness ratings, $H(2)$ = 1.74, p = .419 and b) comprehensibility ratings, $H(2)$ = 4.42, p = .109.

Tests of Parametric Assumptions and Analysis of Ratings for Nonnative Speaker

Ratings of accentedness and comprehensibility data were explored to ensure that the assumptions of normality and homogeneity of variances were met prior to running a one way-ANOVA. Shapiro-Wilk's test indicated a nonnormal distribution for accentedness ($p = .001$ for the AV-gesture-face condition, $p = .001$ for AV-face condition, $p = .001$ for A-only condition) and comprehensibility ($p = .001$ for the AV-gesture-face condition, $p = .001$ for AV-face condition, $p = .001$ for A-only condition). Assessment of the skewness and kurtosis coefficients for both accentedness and comprehensibility further confirmed that the data were significantly beyond the bounds of normal distributions (see Table 11). L2 listeners tended to assign lower ratings to the nonnative speaker on the 9-point accentedness and comprehensibility scale.

Table 11
Nonnative: Skewness and Kurtosis Coefficient for Accentedness and Comprehensibility Ratings

Stimulus Condition	Accentedness		Comprehensibility	
	Skewness coefficient	Kurtosis coefficient	Skewness coefficient	Kurtosis coefficient
AV-gesture-face	3.17	.70	1.98	-.37
AV-face	3.92	3.50	2.89	2.27
A-only	2.02	-.19	2.06	-.19

Levene's test for equality of variances also indicated that the assumption of homogeneity had been violated for accentedness, $F (2,57) = 6.039$, $p = .004$ and was approaching significance for comprehensibility $F (2,57) = 3.129$, $p = .051$. Since the assumptions of normality and/or homogeneity were violated, the bootstrapping method was used to analyze the mean difference (*MD*) between the levels of the stimulus condition variable for both accentedness and comprehensibility ratings. For accentedness ratings, comparison of the AV-gesture-face and AV-face conditions was significant, $MD = -.850$, $SE = .394$, BCa 95% CI [-1.74, -.151] and between AV-gesture-face and A-only, $MD = -.600$, $SE = .253$, BCa 95% CI [-1.15, -.152] since the bootstrapped CIs do not cross zero.

RQ3: Learners' Preferences for and Perception of Visual Cues

Part One of the SAVC Questionnaire

To gain a better understanding of how speakers' accent (native vs. nonnative) influenced L2 listeners' preference for visual cues and listening comprehension, responses to questionnaire items (1-5) in the first part of the questionnaire were tabulated. These items were developed to elicit L2 listeners' feedback on speakers' accent within each stimulus condition. Thus, each stimulus condition was given different items (see Appendix E). Responses for each group (i.e., AV-gesture-face, AV-face, A-only) in each accent condition (i.e., native vs. nonnative) were tabulated and an independent samples *t*-test or the Mann-Whitney U test was conducted. For instance, the independent samples *t*-test or its nonparametric counterpart was used to determine if there was a significant difference in the means of participants who listened only (i.e., A-only) to the native speaker and those who listened only to the nonnative speaker.

Ratings of L2 listeners in the AV-gesture-face condition. Items one and two in part one of the SAVC questionnaire were analyzed and descriptive statistics for each item and speaker (native vs. nonnative) were obtained (see Tables 12 &13). Prior to running an independent samples *t*-test, the assumptions of normality and homogeneity of variances were examined for item 1 in part one of the SAVC questionnaire. Shapiro-Wilk's test indicated issues in the normality of the data ($p = .019$ for ratings of native speaker; $p = .018$ for ratings of nonnative speaker). To further assess the normality of the data, skewness (-1.08 for ratings of native speaker; 1.59 for ratings of the nonnative speaker) and kurtosis (-.62 for ratings of native speaker; .22 for ratings of the nonnative speaker) coefficients were examined. The coefficients obtained were between the threshold of ±1.96 which indicated that the data were within the

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bounds of normal distribution. Levene's test of homogeneity was also conducted and indicated

no concerns with homogeneity of variances, F (1, 38) = .731, p = .398.

Table 12

AV-gesture-face Condition: Descriptive Statistics for Listeners' Ratings of Stimulus Condition

Item Number	Focus of Item	Native Speaker					Nonnative *Speaker*				
		n	Min	Max	Mean (*SD*)	95% CIs	n	Min	Max	Mean (*SD*)	95% CIs
1	Watching the speaker's *face* helped me understand the lecture.	20	1	9	6.35 (*2.49*)	5.18, 7.52	20	1	9	3.95 (*2.46*)	2.80, 5.10

Note. 9 = Strongly agree; 8 = Agree; 7 = Moderately agree; 6 = Mildly agree; 5 = Neutral; 4 = Mildly disagree; 3 = Moderately disagree; 2 = Disagree; 1 = Strongly disagree

Since there were no issues with normality and homogeneity of variances, an independent

samples *t*-test was conducted. The result indicated that there were significant differences in the

ratings of L2 listeners who listened to the native speaker and those who listened to the nonnative

speaker, $t(38)$ = 3.06, p = .004, d = .96[17]. L2 listeners who listened to the native speaker tended

to mildly agree (M = 6.35) when asked whether or not seeing the native speaker's face helped

facilitate their listening comprehension. On the other hand, L2 listeners who listened to the

nonnative speaker tended to assign more lower ratings (M = 3.95). L2 listeners indicated that

seeing the nonnative speaker's face did not facilitate their listening comprehension.

As for item 2 in part one of the SAVC questionnaire, Shapiro-Wilk's test indicated that

the data were not normally distributed (p = .001 for ratings of native speaker; p = .044 for ratings

of nonnative speaker). This issue in normality was further confirmed since the skewness

coefficient (-2.38 for ratings of native speaker) was beyond the threshold of $\pm$ 1.96. Levene's

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[17] Plonsky and Oswald (2014) indicated that, in L2 research, effect sizes around .40 are considered small, .70 is medium and 1.00 is large.

test indicated no issues in the equality of variances, F (1, 36.070) = .089, p = .767.

Table 13

AV-gesture-face Condition: Descriptive Statistics for Listeners' Ratings of Stimulus Condition

Item Number	Focus of Item	**Native Speaker**					**Nonnative *Speaker***				
		n	*Min*	*Max*	*Mean (SD)*	*95% CIs*	*n*	*Min*	*Max*	*Mean (SD)*	*95% CIs*
2	Watching the speaker's gestures helped me understand the lecture.	20	2	9	7.45 (*2.11*)	6.46, 8.44	20	1	7	4.40 (*1.90*)	3.51, 5.29

Note. 9 = *Strongly agree;* 8 = *Agree;* 7 = *Moderately agree;* 6 = *Mildly agree;* 5 = *Neutral;* 4 = Mildly disagree; 3 = Moderately disagree; 2 = Disagree; 1 = Strongly disagree*

Since the assumption of normality was violated, the nonparametric test Mann-Whitney U was conducted. The test revealed significant differences in the ratings of L2 listeners who listened to the native speaker and those who listened to the nonnative speaker, U = 59.50, z = -3.88, p = .001, r = .866. Those who listened to the native speaker moderately agreed that seeing the native speaker's gestures facilitated their comprehension (M = 7.45) whereas participants who listened to the nonnative speaker provided ratings that indicated their mild disagreement (M = 4.40) when asked about whether or not seeing the nonnative speaker's gestures facilitated their comprehension.

Ratings of L2 listeners in the AV-face condition. Items three and four in part one of the SAVC questionnaire were analyzed and descriptive statistics for each item and speaker (native vs. nonnative) were obtained (see Tables 14 & 15). For item three, Shapiro-Wilk's test indicated that there were issues in the normality of the data (p = .005 for ratings of nonnative speaker). The normality of nonnative speaker data was further examined by exploring the skewness (1.05) and kurtosis (-1.28) coefficients which indicated that the data were within the bounds of normal distribution. Levene's test indicated no issues in homogeneity of variances, F (1, 38) = .345, p = .561.

Table 14

AV- face Condition: Descriptive Statistics for Listeners' Ratings of Stimulus Condition

Item Number	Focus of Item	**Native Speaker**					**Nonnative** *Speaker*				
		n	Min	Max	Mean *(SD)*	95% CIs	*n*	Min	Max	Mean *(SD)*	95% CIs
3	Watching the speaker's *face* helped me understand the lecture.	20	1	9	5.60 *(2.34)*	4.50, 6.70	20	1	6	3.00 *(1.86)*	2.13, 3.87

Note. 9 = Strongly agree; 8 = Agree; 7 = Moderately agree; 6 = Mildly agree; 5 = Neutral; 4 = Mildly disagree; 3 = Moderately disagree; 2 = Disagree; 1 = Strongly disagree

Table 15

AV- face Condition: Descriptive Statistics for Listeners' Ratings of Stimulus Condition

Item Number	Focus of Item	**Native Speaker**					**Nonnative** *Speaker*				
		n	*Min*	*Max*	*Mean (SD)*	*95% CIs*	*n*	*Min*	*Max*	*Mean (SD)*	*95% CIs*
4	I would have understood the lecture better if I had seen the speaker's *gestures*	20	3	9	7.40 *(2.06)*	6.43, 8.37	20	2	9	5.90 *(2.53)*	4.72, 7.08

Note. 9 = Strongly agree; 8 = Agree; 7 = Moderately agree; 6 = Mildly agree; 5 = Neutral; 4 = Mildly disagree; 3 = Moderately disagree; 2 = Disagree; 1 = Strongly disagree

An independent samples *t*-test was conducted and revealed significant differences in the ratings of L2 listeners, $t(38) = 3.87$, $p = .001$, $d = 1.23$. Participants who listened to the native speaker provided neutral ratings when asked if seeing the speaker's face facilitated their comprehension ($M = 5.60$) whereas participants who listened to the nonnative speaker tended to assign lower ratings ($M = 3.00$) and indicated that seeing the nonnative speaker's face did not help increase their comprehension.

As for item four, Shapiro-Wilk's test indicated that there were issues in the normality of the data ($p = 001$ for ratings of native speaker; $p = .029$ for ratings of nonnative speaker). To further assess this, skewness (-1.95 for ratings of native speaker; .558 for ratings of nonnative

speaker) and kurtosis (-.449 for ratings of native speaker; 1.22 for ratings of nonnative speaker)

coefficients indicated that the data were within the bounds of normal distribution. Levene's test

also indicated the assumption of homogeneity was met, $F(1, 38) = 1.136$, $p = .293$. An

independent samples t-test was conducted and revealed significant differences in participants'

ratings, $t(38) = 2.054$, $p = .047$, $d = .64$. Participants who listened to the native speaker tended to

assign higher ratings ($M = 7.40$). They indicated that seeing the speaker's gestures could have

facilitated their comprehension. On the other hand, participants who listened to the nonnative

speaker assigned neutral ratings ($M = 5.90$).

   Ratings of L2 listeners in the A-only condition. Item five in part one of the SAVC

questionnaire was analyzed and descriptive statistics for each speaker (native vs. nonnative) were

obtained (see Table 16). For item five, Shapiro-Wilk's test indicated issues in the normality of

the data ($p = .001$ for ratings of native speaker; $p = .001$ for ratings of nonnative speaker). The

nonnormality of the data was further confirmed by obtaining the skewness (-3.38 for ratings of

native speaker; -1.94 for ratings of nonnative speaker) and kurtosis (2.82 for ratings of native

speaker; .275 for ratings of nonnative speaker) coefficients. Levene's test indicated no concerns

with homogeneity of variances, $F(1, 29.218) = .112$, $p = .740$.

Table 16
A-only Condition: Descriptive Statistics for Listeners' Ratings of Stimulus Condition

		Native Speaker					**Nonnative** *Speaker*				
Item Number	**Focus of Item**	*n*	Min	Max	Mean (*SD*)	95% CIs	*n*	Min	Max	Mean (*SD*)	95% CIs
5	I would have understood the lecture better if I had seen the speaker.	20	1	9	7.35 (*2.20*)	6.32, 8.38	20	4	9	7.50 (*1.63*)	6.73, 8.27

Note. 9 = *Strongly agree;* 8 = *Agree;* 7 = *Moderately agree;* 6 = *Mildly agree;* 5 = *Neutral;* 4 = *Mildly disagree;* 3 = *Moderately disagree;* 2 = *Disagree;* 1 = *Strongly disagree*

Because the assumption of normality was violated, the Mann-Whitney U test was conducted in place of an independent samples *t*-test. The analysis revealed no significant differences in the ratings of participants who listened to the native speaker and those who listened to the nonnative speaker, $U = 195.50, z = .127, p = .899, r = .02$. Participants who listened to the native speaker ($M = 7.35$) and those who listened to the nonnative speaker ($M = 7.50$) in the A-only condition both indicated that seeing the speaker they listened to could have facilitated their comprehension of the lecture they listened to.

RQ 4: Effects of Accent and Visual Cues on L2 Listeners' Daily Usage of English and Language Development

Part Two of the SAVC Questionnaire

Participants' rankings (from 1 to 6) of the top six activities that: a) they use most often when using English (item 2) and b) help improve their English listening (item 3), speaking (item 4) and vocabulary skills (item 5) were tallied, and percentages were obtained. In each table, the far-left column included the item number on the SAVC questionnaire followed by a list of activities. The far-right column represents the raw total number and percentage of participants who chose the given activity. The top row includes the rankings from 1 (*most often* or *most helpful*) to 6. Each ranking in the top row includes the raw number and percentages of participants who selected each rank across the activities.

Item two in part two of the SAVC questionnaire dealt with the type of activities that participants used the most when communicating in English (see Table 17). Overall, participants indicated that the top six activities they used English most often were: 1) watching TV and other visual media (93%), 2), attending, online or in person, face-to-face classes (71%), and 3) talking mask-to-mask, outside of class to nonnative speakers of English who do not speak Arabic (66%).

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Participants' choices of the top six activities may have likely been influenced by the COVID-19

restrictions. During the optional follow-up interview, participants were asked to explain the

rationale behind their choices and rankings. Four participants indicated that due to the pandemic

they spent their time at home either watching TV and other visual media or attending online

classes. One participant also indicated that her usage of emails with her professors, classmates

and/or students increased.

Table 17

Rankings of Activities Used the Most When Communicating in English

SAVC_Q2	Ranking						
	1	2	3	4	5	6	Total
Watching TV and other visual media (e.g., Netflix, YouTube)	53 44%	17 14%	9 8%	14 12%	8 7%	11 9%	112 93%
Attending face-to-face classes	22 18%	21 18%	13 11%	9 8%	11 9%	9 8%	85 71%
Talking mask-to-mask, outside of class, to nonnative speakers	6 5%	8 7%	15 13%	18 15%	20 17%	12 10%	79 66%
E-mailing	17 14%	12 10%	7 6%	6 5%	17 14%	16 13%	75 63%
Talking mask-to-mask, outside of class, to native speakers	7 6%	14 12%	18 15%	14 12%	7 6%	11 9%	71 59%
Talking face-to-face outside of class to native speakers	6 5%	12 10%	15 13%	9 8%	9 8%	9 8%	60 50%
Reading magazines, newspapers, or books	2 2%	7 6%	11 9%	14 12%	10 8%	11 9%	55 46%
Talking face-to-face outside of class to nonnative speakers	2 2%	12 10%	8 7%	5 4%	12 10%	12 10%	51 43%
Listening to the Radio	2 2%	8 7%	5 4%	6 5%	4 3%	9 8%	34 28%
Texting	1 1%	2 2%	7 6%	8 7%	9 8%	7 6%	34 28%
Attending mask-to-mask classes	1 1%	4 3%	4 3%	5 4%	4 3%	2 2%	20 17%
Homework	1 1%	3 3%	2 2%	3 3%	3 3%	5 4%	17 14%
Talking on the telephone to nonnative speakers	0 0%	0 0%	4 3%	4 3%	3 3%	3 3%	14 12%
Talking on the telephone to native speakers	0 0%	0 0%	2 2%	5 4%	3 3%	3 3%	13 11%

As for participants' top third choice (i.e., talking mask-to-mask, outside of class to nonnative speakers), participants noted that they: a) returned to their L1 Arabic speaking home countries during the pandemic and hence their interaction with nonnative speakers of English who work at shops, restaurants, hospitals, etc. increased ($n = 10$), and/or b) spent their time with friends who were nonnative speakers of English ($n = 5$). Generally, 14 participants explicitly confirmed that when using English they prefer having visual cues. Four participants indicated encountering difficulty communicating in English over the phone, especially with nonnative speakers and this can explain why talking on the telephone was chosen as the activity for which participants used English the least. The participants explained that unlike when communicating in Arabic, they intentionally avoid communicating in English via telephone due to the lack of access to visual cues, such as seeing the speaker's face, gestures and overall expressions.

Item three on the questionnaire sought information about the top six activities participants perceived as the most effective in improving their listening skills (see Table 18). Results revealed that the top six were: a) watching TV and other visual media, such as YouTube, Netflix, etc. (98%), b) talking face-to-face outside of class either online or in person to native speakers of English (91%), c) attending face-to-face (no mask) classes or meetings (88%), d) listening to the radio/CD (71%), e) talking on the telephone (Audio-only) to native speakers of English (70%), and f) talking face-to-face outside of class either online or in person to nonnative speakers who do not speak Arabic (68%). Twenty participants explained that watching TV and other visual media was one of their top choices because of its auditory-visual nature. Five participants noted that seeing the speakers and/or having subtitles while watching allows them to decode and recall new words faster and it generally facilitates and helps improve their listening comprehension.

Seven participants expressed during the interview that when they were ranking the

activities on the questionnaire, they had a preference for options that involved interacting or

listening to native speakers, even in the absence of visual cues. Many indicated that native

speakers are a better source of English.

Table 18

Rankings of Activities that Help Improve Listening

SAVC_Q3	Ranking						
	1	2	3	4	5	6	Total
Watching TV and other visual media (e.g., YouTube, Netflix)	78	12	9	8	5	5	117
	65%	10%	8%	7%	4%	4%	98%
Talking face-to-face outside of class, to native speakers of English	22	33	20	20	7	7	109
	18%	28%	17%	17%	6%	6%	91%
Attending face -to-face classes or meetings	4	19	33	23	15	12	106
	3%	16%	28%	19%	13%	10%	88%
Listening to the radio/CD	9	30	14	12	12	8	85
	8%	25%	12%	10%	10%	7%	71%
Talking on the telephone (Audio-only) to native speakers of English	3	5	14	18	24	20	84
	3%	4%	12%	15%	20%	17%	70%
Talking face-to-face to nonnative speakers	0	10	16	13	23	20	82
	0%	8%	13%	11%	19%	17%	68%
Talking mask-to-mask to native speakers of English	2	6	12	13	14	14	61
	2%	5%	10%	11%	12%	12%	51%
Talking on the telephone (Audio-only) to nonnative speakers	1	2	2	9	10	21	45
	1%	2%	2%	8%	8%	18%	38%
Talking mask-to-mask to nonnative speakers	1	3	0	4	10	13	31
	1%	3%	0%	3%	8%	11%	26%

They explained that the English of native speakers does not contain errors in grammar or

pronunciation (both segmental and/or suprasegmental). Four participants expressed a preference

for interacting with native speakers because they have the ability to adjust their speech (i.e.,

slower their speech rate, pronounce the words more clearly) when communicating with learners

of English; such adjustments helped improve their listening skills. The participants expressed

feeling that interacting with nonnative speakers did not help improve their listening skills,

especially when visual cues were absent and this was evident in the participants' rankings.

Although many participants indicated their preference for having access to auditory-visual

activities, six participants indicated that they chose listening to the radio/CD or podcasts because they found them to be helpful when preparing for the listening tests, such as the listening sections of the IELTS and/or TOEFL tests. They expressed that although this activity was auditory-only it was relevant to the skill of listening.

Questionnaire item four sought information about the activities that learners felt helped improve their English-speaking skills (see Table 19). Results revealed that the top six activities participants perceived to improve their speaking were: a) talking face-to-face outside of class either online or in person to native speakers (94%), b) attending online or in person face-to-face (no mask) classes or meetings (85%), c) talking on the telephone (Audio-only) to native speakers of English (83%), d) talking face-to-face outside of class either online or in person to nonnative speakers who do not speak Arabic (77%), e) watching TV and other visual media (76%), and f) talking mask-to-mask, outside of class, to native speakers of English (62%).

Eight participants during the optional follow-up interview indicated that for speaking they chose the activities that allowed and required them to practice speaking in order to achieve their daily goals and tasks. Again, the participants indicated their preference for interacting with native speakers rather than nonnative speakers because native speakers' language does not contain errors in grammar or pronunciation, and/or have the ability to adjust their speech. Generally, participants indicated their preference for seeing the speaker. Participants also explained that although watching TV allows them to learn new words and phrases, it was not one of their top three choices because it did not allow them to practice speaking. However, as noted earlier, the participants indicated their preference for watching TV and other visual media over listening to the radio or CD because of its auditory-visual nature which they noted facilitated their learning of English. One participant added that watching TV helped improve her pragmatic

skills. Again, similar to the findings for item 3, participants found activities that involved

interacting with nonnative speakers without seeing their face and/or gestures as the least

effective and the least preferred.

Table 19

Rankings of Activities that Help Improve Speaking

SAVC_Q4	Ranking						
	1	2	3	4	5	6	Total
Talking face-to-face, outside of class, to native speakers	66	19	11	4	8	5	113
	55%	16%	9%	3%	7%	4%	94%
Attending face-to-face classes or meetings	10	11	19	25	21	16	102
	8%	9%	16%	21%	18%	13%	85%
Talking on the telephone to native speakers of English	1	13	29	24	17	15	99
	1%	11%	24%	20%	14%	13%	83%
Talking face-to-face to nonnative speakers	6	26	20	13	15	12	92
	5%	22%	17%	11%	13%	10%	77%
Watching TV and other visual media (e.g., YouTube, Netflix).	32	14	7	11	14	13	91
	27%	12%	6%	9%	12%	11%	76%
Talking mask-to-mask to native speakers of English	2	23	15	11	11	12	74
	2%	19%	13%	9%	9%	10%	62%
Listening to the radio/CD	2	9	8	11	11	12	53
	2%	8%	7%	9%	9%	10%	44%
Talking on the telephone to nonnative speakers	1	3	4	10	13	20	51
	1%	3%	3%	8%	11%	17%	43%
Talking mask-to-mask to nonnative speakers	0	2	7	11	10	15	45
	0%	2%	6%	9%	8%	13%	38%

Item five explored the activities that participants preferred and felt helped them improve

their vocabulary development (see Table 20). Overall, the top six activities were: a) Watching

TV and other visual media (99%), b) scrolling through websites, blogging, etc. (93%), c) talking

face-to-face outside of class, online or in person, to native speakers of English (84%), d)

attending, online or in person, face-to-face (no mask) classes (80%), e) listening to the radio/CD

(70%), e) talking on the telephone (Audio-only) to native speakers of English (501%).

Table 20

Rankings of Activities that Help Improve Vocabulary

SAVC_Q5	Ranking						Total
	1	2	3	4	5	6	
Watching TV and other visual media (e.g., YouTube, Netflix)	54 45%	35 29%	11 9%	7 6%	6 5%	6 5%	119 99%
Scrolling through websites, blogging, etc.	40 33%	38 32%	12 10%	12 10%	8 7%	2 2%	112 93%
Talking face-to-face to native speakers of English	9 8%	16 13%	30 25%	19 16%	19 16%	8 7%	101 84%
Attending face-to-face classes or meetings	8 7%	8 7%	22 18%	22 18%	18 15%	18 15%	96 80%
Listening to the radio/CD	2 2%	10 8%	23 19%	19 16%	14 12%	16 13%	84 70%
Talking on the telephone to native speakers of English	1 1%	3 3%	5 4%	10 8%	26 22%	16 13%	61 51%
Talking face-to-face to nonnative speakers of English	2 2%	3 3%	7 6%	15 13%	6 5%	24 20%	57 48%
Talking mask-to-mask to native speakers of English	2 2%	5 4%	6 5%	14 12%	13 11%	12 10%	52 43%
Talking on the telephone to nonnative speakers	0 0%	0 0%	3 3%	1 1%	7 6%	8 7%	19 16%
Talking mask-to-mask to nonnative speakers	2 2%	2 2%	1 1%	1 1%	3 3%	10 8%	19 16%

During the follow-up interview, eight participants noted the importance of having visual cues when learning vocabulary. Many expressed their preference to actually see the word in front of them. They explained that while reading or watching TV, having subtitles allows them to identify cognates, focus and recall words easier. Participants also expressed their preference for talking to native speakers. Three participants explained that native speakers use words and phrases that are unfamiliar to them and such exposure allows them to develop their vocabulary. Similar to the findings for items three and four, participants ranked talking to nonnative speakers, especially in the absence of the visual cues, as the least preferred activity, as evident in the participants' rankings above.

Part Three of the SAVC Questionnaire

In part three of the SAVC questionnaire, participants were explicitly asked to indicate, based on their experiences, their general preference for and perception of visual cues when communicating with both native and nonnative speakers of English. Participants' responses to items six and seven revealed that, generally, participants did not prefer engaging in auditory-only telephone conversations in English ($M = 3.84$, $SD = 2.25$) and indicated their preference for seeing the speakers' face ($M = 7.70$, $SD = 1.71$) as shown in Figure 6.
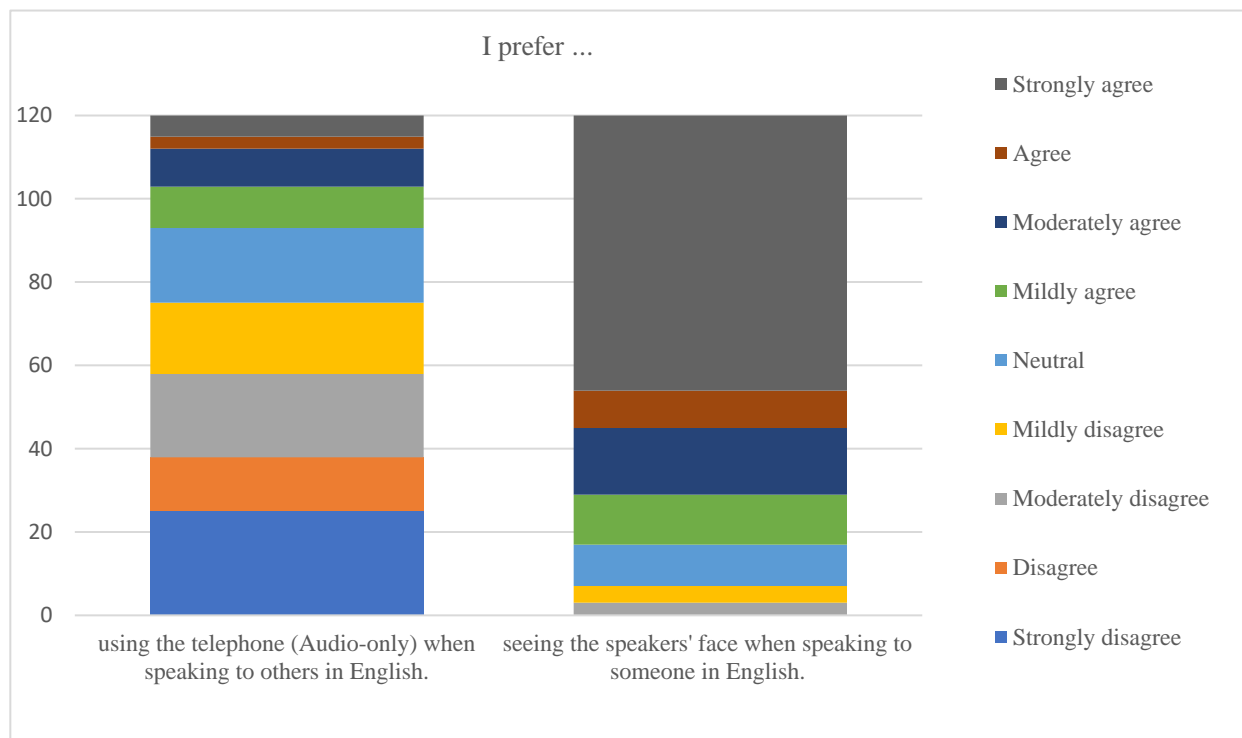
Figure 6. Responses to SAVC Questionnaire Items 6 & 7
Note. The *y* axis represents the raw number of participants who chose each response option.

Participants' responses to items 8, 9, 11, and 12 were generally positive as shown in Figure 7. The participants indicated that seeing native speakers' face ($M = 7.19$, $SD = 2.10$) and gestures ($M = 7.53$, $SD = 1.72$) does facilitate their comprehension when communicating in English.
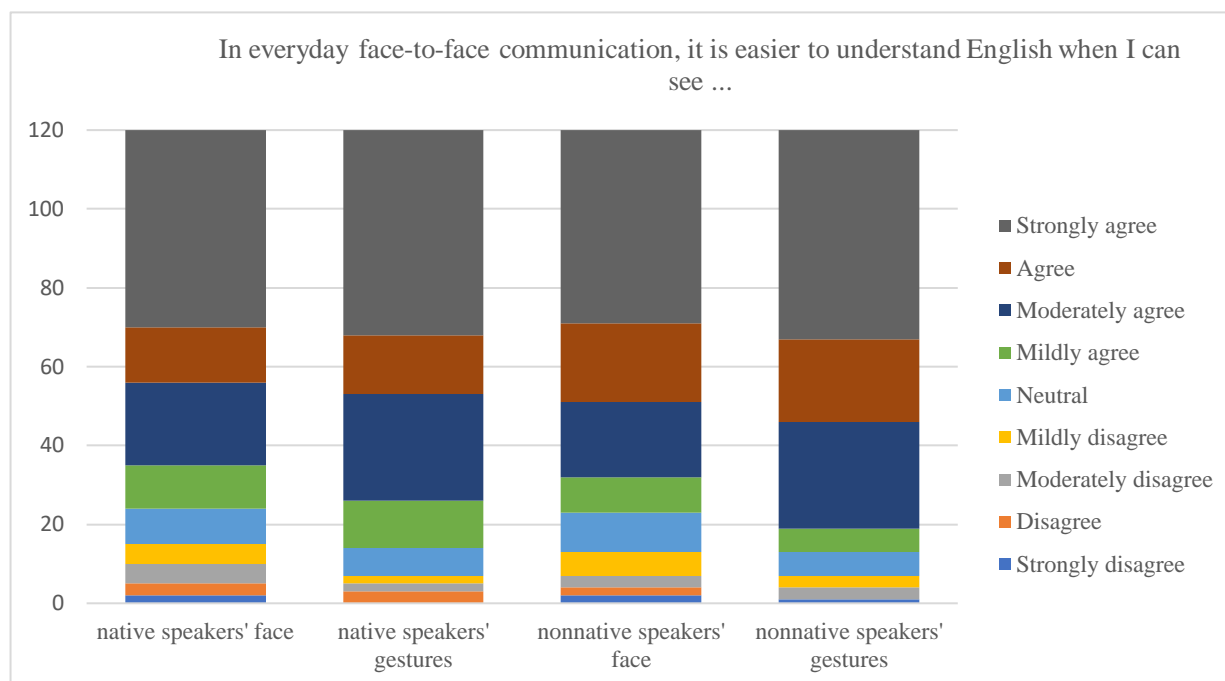
Figure 7. Responses to SAVC Questionnaire Items 8, 9, 11, & 12

Participants' responses were also positive and similar when asked about seeing nonnative

speakers' face (*M* =7.30, *SD* =2.00) and gestures (*M* = 7.68, *SD* =2.10). Participants also agreed

that seeing both native (*M* = 7.22, *SD* = 1.90) and nonnative (*M* = 7.52, *SD* = 1.83) speakers'

gestures facilitated their understanding of English during mask-to-mask communication, as well

(see Figure 8).

Items 14, 15, 17, and 18 sought information about participants' explicit awareness of and

attention to both native and nonnative speakers' lip movements and gestures during face-to-face

communication in English. The responses revealed that participants tended to have higher

attention to both native (*M* = 7.42, *SD* = 1.63) and nonnative (*M* = 7.65, *SD* = 1.61) speakers'

gestures than native (*M* = 5.92 , *SD* = 2.31) and nonnative (*M* = 6.10 , *SD* = 2.27) speakers' lip

movements, as shown in Figure 9.
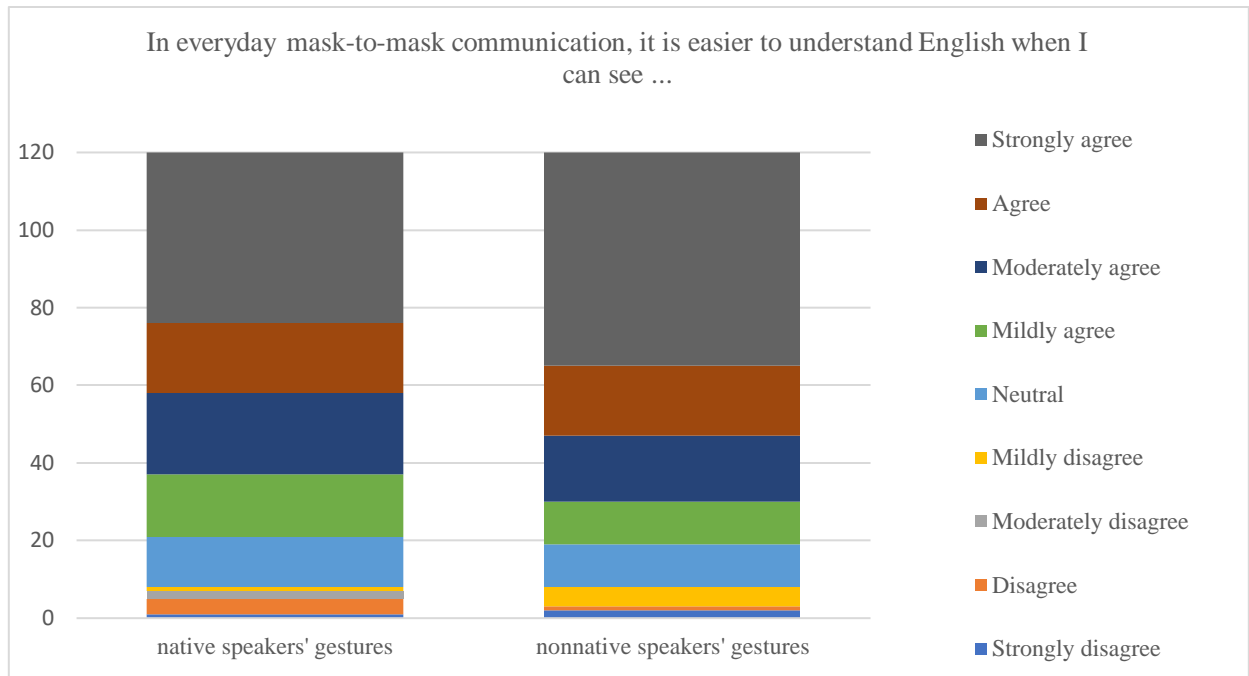
Figure 8. Responses to SAVC Questionnaires Items 10 & 13
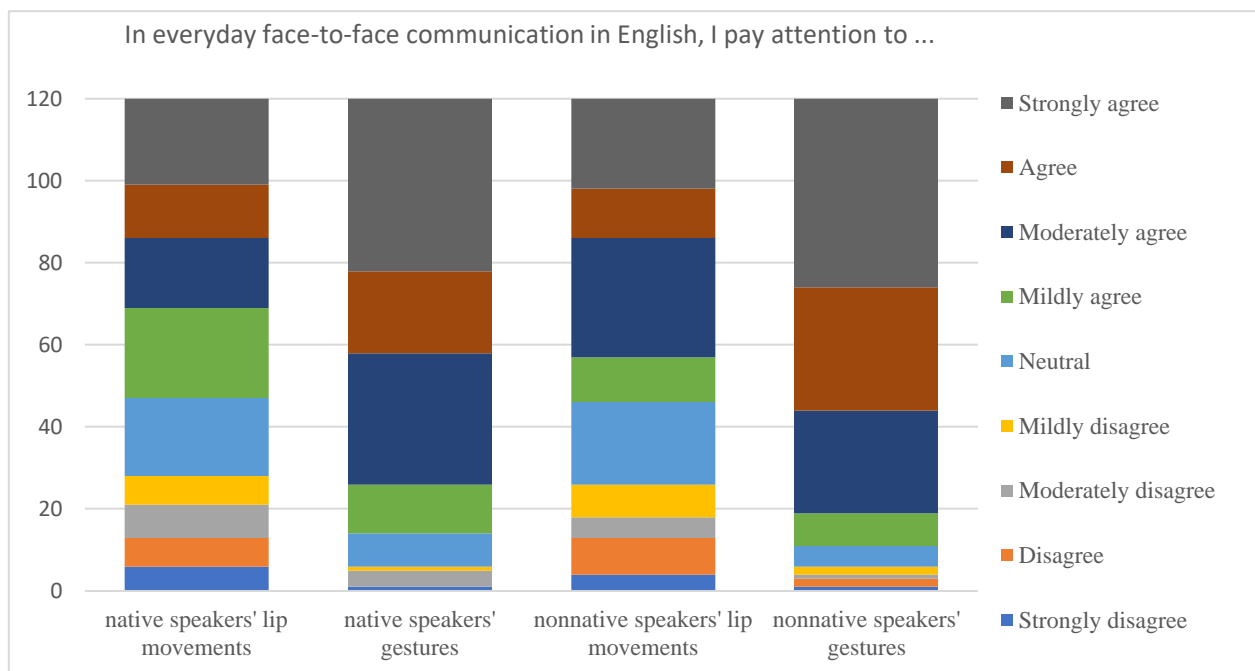
Figure 9. Responses to SAVC Questionnaire Items 14, 15, 17, & 18

Participants' tendency to pay attention to native ($M = 7.50$, $SD = 1.70$) and nonnative ($M = 7.67$, $SD = 1.59$) gestures was also observed in mask-to-mask communication, as shown in Figure 10. Interestingly, the responses revealed that participants' attention to native and nonnative speakers'

gestures in both face-to-face and mask-to-mask communication was similar.
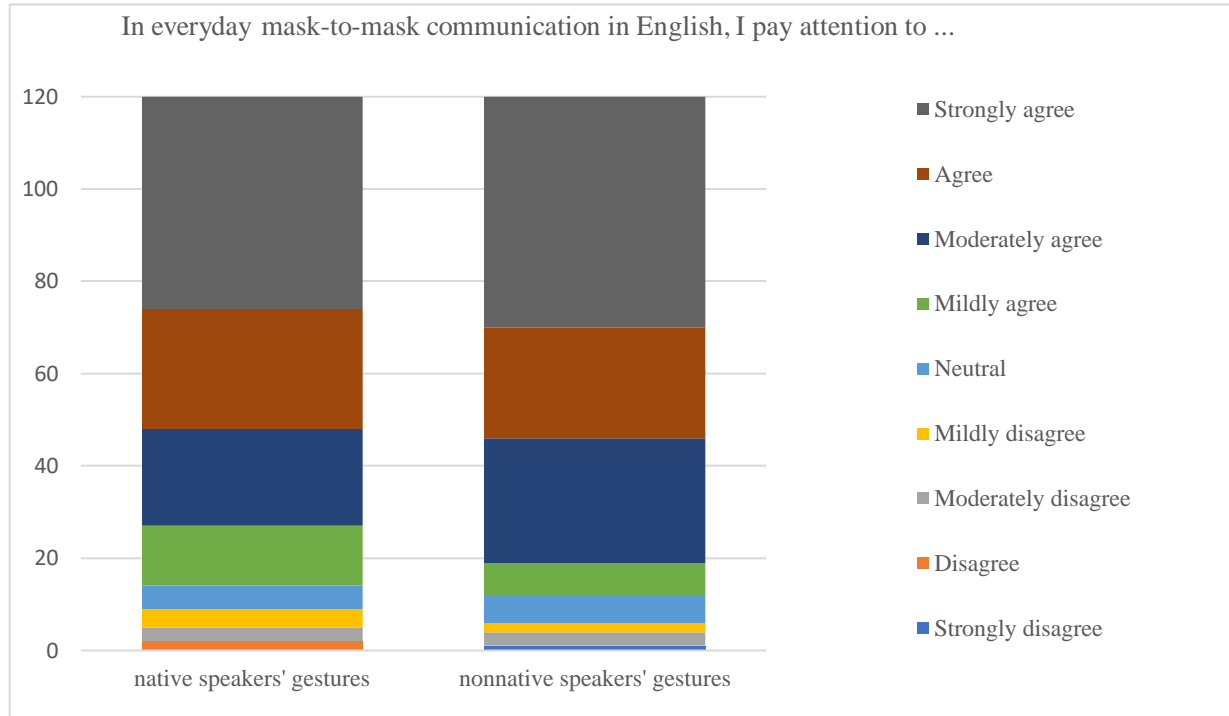
Figure 10. Responses to SAVC Questionnaire Items 16 & 19

To further examine participants' attention to speakers' lip movements and gestures, participants' responses to items 20, 21, and 22 were examined to determine if participants' attention to lip movements and gestures was influenced by the language they are communicating in (i.e., Arabic vs. English) (see Figures 11 & 12). The participants generally indicated not paying attention to speakers' lip movements when communicating with other L1 speakers of Arabic ($M = 3.85$, $SD = 2.61$). However, generally they agreed that they paid attention to speakers' gestures when communicating in Arabic ($M = 6.04$, $SD = 2.48$). Responses related to participants' attention to gestures during mask-to-mask communication in their L1 were generally positive ($M = 6.39$, $SD = 2.39$) and similar to the responses provided for face-to-face communication.
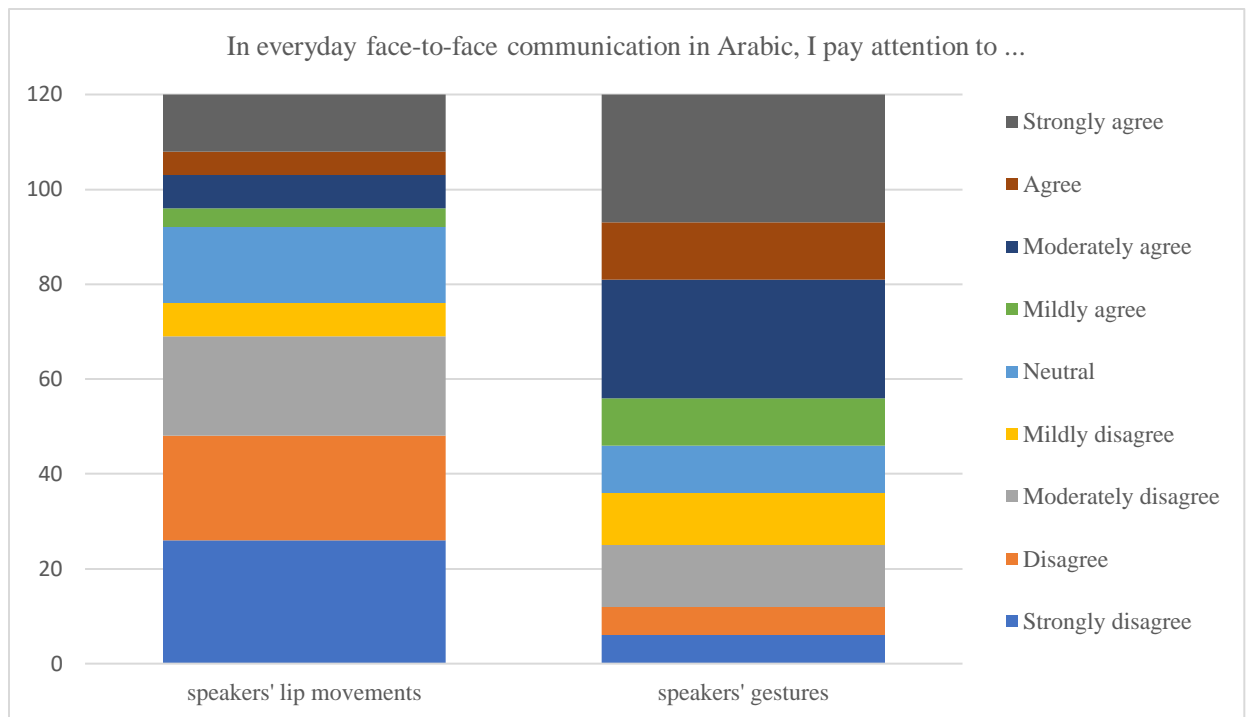
Figure 11. Responses to SAVC Questionnaire Items 20 & 21
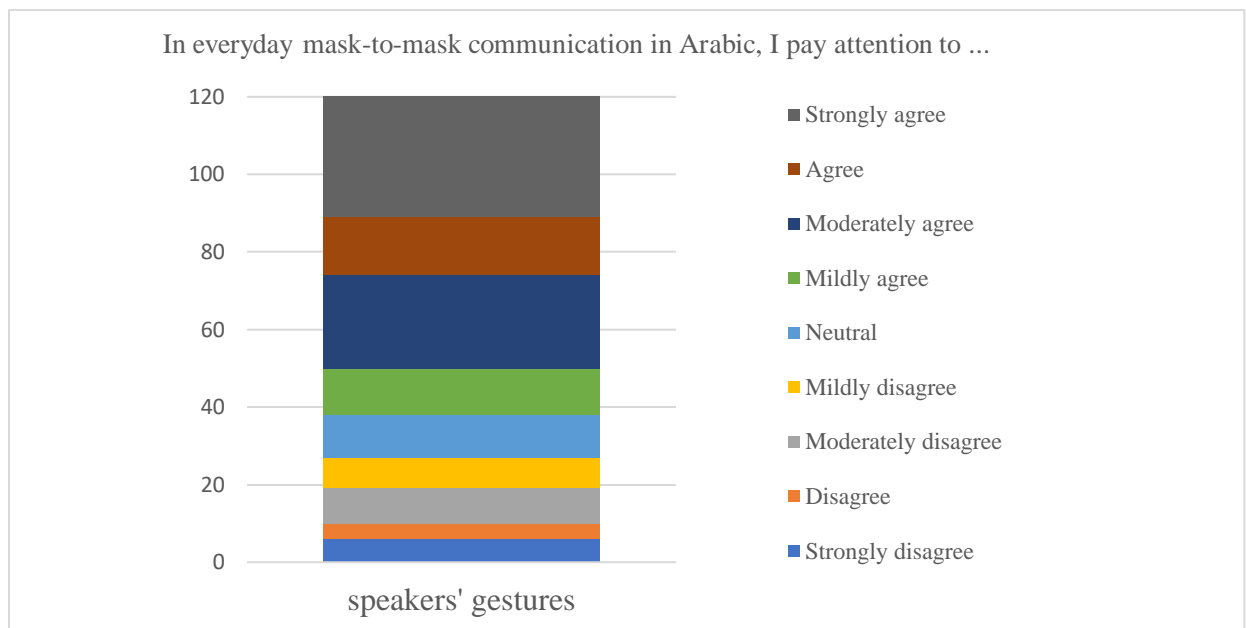
Figure 12. Responses to SAVC Questionnaire Items 22

Items 23, 24 and 25 were also examined, as shown in Figure 13. A large number of

participants agreed that the auditory-visual nature of TV and other visual media facilitated their

understanding of English ($M = 7.18$, $SD = 1.97$). On the other hand, responses were quite neutral

($M = 5.59$, $SD = 2.38$) in terms of participants' use of gestures when talking in their L1 versus

their L2. A couple of participants commented while filling out the questionnaire that they had not

made a conscious comparison between the number of gestures they produce when using their L1

and L2. Overall, participants generally agreed that their use of gestures when communicating in

English does facilitate others comprehension of their speech ($M = 6.30$, $SD = 2.22$).
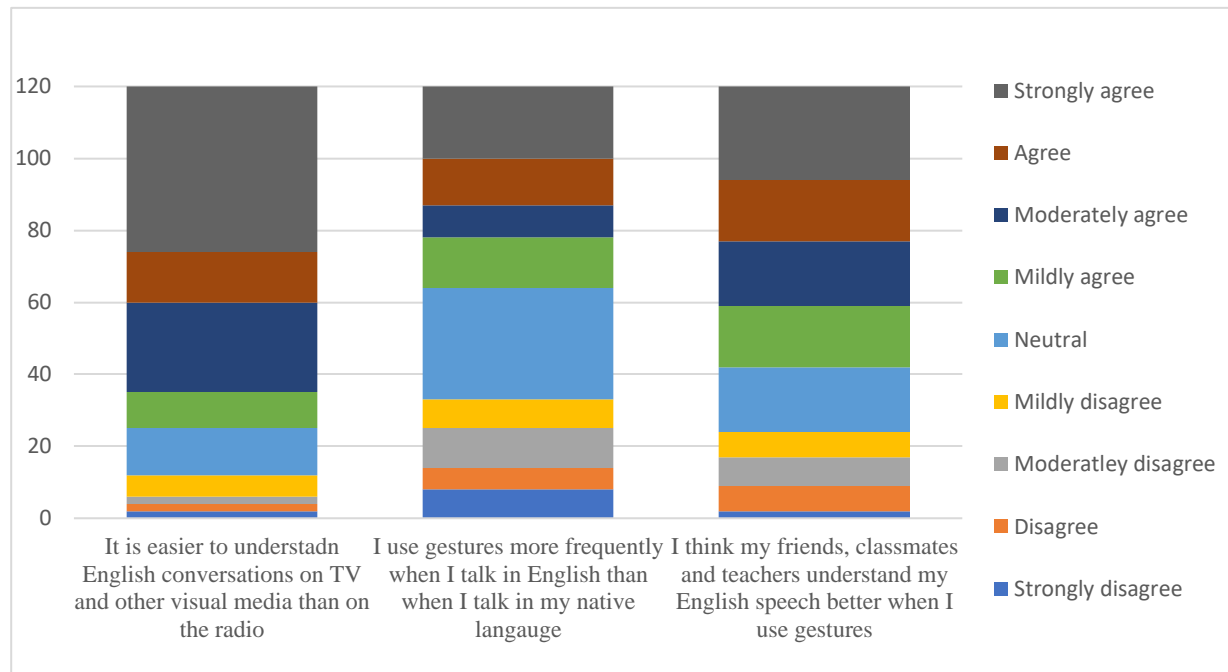
Figure 13. Responses to SAVC Questionnaire Items 23, 24 & 25

Responses to the Optional Open-ended Question and Follow-up Interview

After completing the listening comprehension test and all the items on the SAVC

questionnaire, participants who listened to both the native and nonnative speakers in all three

stimulus conditions were given an optional open-ended question that was specifically designed

for the condition they were in. The optional open-ended question asked the participants about the

stimulus condition they were in and to provide any comments they wished to share about the

experiment. Since the second follow-up interview question overlaps with the optional open-

ended question, participants' recorded responses to the second follow-up interview item (see

Appendix E) were written down by the researcher, grouped by stimulus condition and added to

the participants' written responses. The participants' written ($n = 93$) and verbal responses ($n = 41$) for each stimulus condition were analyzed, synthesized and any recurring patterns were reported.

Overall, participants who listened to both native (18 out of 46) and nonnative (11 out of 50) speakers across all three stimulus conditions indicated that their unfamiliarity with the topic increased the difficulty of the listening comprehension task and/or decreased their interest and motivation while listening. Six participants who listened to the native speaker indicated that they wished they were given the chance to take notes and a couple of participants expressed wanting to read the questions prior to listening to each clip. A couple of participants indicated that reading the questions beforehand may have helped them understand the nonnative speaker whereas interestingly none of the participants who listened to the nonnative speaker indicated having the desire to take notes while listening. This could have been due to difficulty in understanding the nonnative speaker.

Comments of Participants in the Native AV-Gesture-Face Condition

Eight out of 16 participants indicated that seeing the native speakers' gestures was helpful. Four participants were more specific and noted that it would have been more helpful if the native speaker had produced more meaningful gestures (i.e., iconic) because they felt iconic gestures were the most useful. Those types of gestures also helped them recall important information needed to answer the questions on the listening comprehension test. To clarify, one participant explained that during the interview in one of the clips the speaker used an iconic gesture that helped her visualize the word "patch" while explaining the sentence *"If water leaks through the wall of the structure, you can just patch it up by putting some of the dry material over that leak"*. The participant indicated that the speaker's use of gestures to explain this

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statement allowed her to recall the information and as a result was able to answer the question correctly. Another participant pointed out that the native speaker's correct and clear usage of suprasegmental features (i.e., stress and intonation) and hand movements (e.g., speaker moves her hand upwards and downwards) helped him pay attention and stay focused.

Comments of Participants in the Native AV-Face Condition

Overall, nine out of 15 participants noted that seeing the speaker's gestures may have made the descriptions given by the lecturer clearer and may have helped facilitate their understanding of the lecture. When the participants were explicitly asked about whether or not seeing the speaker's face was helpful, their responses were divergent. Six participants indicated that seeing the speaker's lip movements and face facilitated their listening comprehension whereas six other participants noted that seeing the native speaker's face was rather unhelpful and distracting as evident in the following excerpts that were written in English by two participants:

(1) *"The speaker's expressive facial expressions were irritating and distracting"*

(2) *"The speaker's facial expressions were distracting as if she was uncomfortable"*

(3) *"Some of the pauses and what she does (hard swallowing) makes it look like she is either uncomfortable or nervous. Smiling made me notice her more and listen properly. It made her seem friendly and approachable. It relaxed me."*

(4) *"I found the speaker's face changes throughout the lecture very distracting."*

Interestingly, unlike participants in the other conditions, only participants in the AV-face condition repeatedly made comments about the native speaker's facial expressions ($n = 6$) and explicitly stated feeling that the speaker was uncomfortable and/or nervous ($n = 3$).

Comments of Participants in the Native A-only Condition

Thirteen out of 14 participants in the A-only condition noted that seeing the speaker's face and/or gestures may have facilitated their understanding, especially since the topic they listened to involved many descriptions and steps. Seven participants mentioned that the native speaker was clear and they did not have any issues comprehending her speech, but they noted for the parts in which she talked about shaping and formulating the clay, seeing her hand movements would have helped them visualize what she was saying especially since they have no background knowledge of the topic.

Comments of Participants in the Nonnative AV-Gesture-Face Condition

One out of 19 participants indicated that seeing the nonnative speaker's gestures helped her grasp only the general idea of the topic. She reported that the speaker's gestures did not facilitate her understanding of the details present in each clip. As for seeing the speaker's face, seven participants indicated that it was helpful whereas seven other participants mentioned that seeing the face did not facilitate their comprehension. All the participants noted that the speaker's accent was too difficult to understand and five participants elaborated by explaining that they were too occupied during the listening task trying to decipher and process the nonnative speaker's speech and as a result they would miss any new information that followed. Five participants in the AV-gesture-face condition expressed feeling "frustrated", "uncomfortable", "overwhelmed", "lost", stressed" and "irritated".

Comments of Participants in the Nonnative AV-Face Condition

Six out of 17 participants indicated that seeing the speaker's face and lip movements were not helpful whereas two indicated that seeing the face helped them grasp the general idea. One participant pointed out that he had begun to benefit from seeing the speaker's face towards

the end of the lecture. He explained that as he listened, he began to realize how the nonnative speaker was pronouncing certain words, such as 'clay' and 'percentage'. During the interview, one participant indicated having had classmates who were Vietnamese and having always struggled to understand the Vietnamese accent. Five participants also expressed that the speaker's accent made it very difficult to focus, as evident in the following excerpt from one of the participants who wrote that: *"The accent was so distracting. I couldn't focus on the topic and wanted to withdraw by the end of the second video."* Also, ten participants indicated that seeing the speaker's gestures may have enhanced their understanding whereas one explicitly stated that seeing the speaker's gestures would not have helped due to speaker's strong accent which prevented her from being able to comprehend the content presented to her.

Comments of Participants in the Nonnative A-only Condition

All 14 participants in the A-only condition indicated that seeing the speaker may have helped facilitate their understanding. Five participants noted that the speaker's accent made the process of comprehending the details very difficult. One participant wrote the following: *"I thought it was very difficult to listen to the speaker explaining the steps of making clay. There were many parts of the conversation that I did not understand at all. The questions that followed the clips, however, made it clearer for me as I could actually read what the speaker may have been talking about. I believe his accent was tremendously hard and I struggled as I tried to grasp what he was saying."* Two participants added that the speaker's accent decreased their attention. The participants wrote:

(1) *"The hardest part was keeping track of the speaker's instructions as my attention span was drifting off very frequently due to how hard the accent was."*

(2) *"As a result of being lost while listening, I found myself thinking about something else for*

a moment."

Interview Item 3, 5, and 6: Communicating with Native Versus Nonnative Speakers

Items 3, 5, and 6 in the follow-up interview covered three questions which are: a) do you have difficulty understanding nonnative speakers? b) have you in the past preferred to communicate with a native speaker of English rather than a nonnative speaker? c) have you in the past preferred to work with a classmate or instructor who is a native speaker of English rather than a nonnative? The recorded responses of 41 participants to these questions were written down, analyzed and synthesized.

There was an interesting common thread throughout these interviews. Eight participants emphasized that the ease or difficulty of understanding nonnative speakers depended on the strength of the speaker's accent and their familiarity with it. For instance, five participants expressed that in many cases they found themselves being able to adapt to moderate or heavy Indian accents due to their frequent exposure to such accents in everyday and educational settings in Saudi Arabia and abroad. Eleven participants also added that the ease or difficulty of comprehending depends on the nonnative speaker's L1 and the degree of similarity it has with English and Arabic or on the topic they are listening to (familiar vs. unfamiliar), as noted by a couple of participants.

Seventeen participants indicated that the most difficult accents are the East Asian accents (e.g., Chinese, Taiwanese, Korean, Vietnamese, and Japanese). Three participants explained that what further makes these accents difficult to understand is the speakers', sometimes, incorrect usage of suprasegmental features, such as stress and intonation or fast speech rate. Four participants noted, based on their experiences with Chinese, Korean, or Vietnamese instructors and/or classmates, that they continue to struggle to comprehend such accents even after multiple

interactions and exposure to such accents. Four participants highlighted that in many cases they find themselves being able to adapt and easily comprehend unfamiliar European and/or South American accents (e.g., French or Brazilian) within a very short period of time. They explained that these European and South American accents are easier to understand perhaps because they have segmental and suprasegmental features that are similar to English or Arabic.

When participants were asked about whether they preferred to communicate with a native or nonnative speaker, their responses varied. Eight participants noted that in their regular everyday interactions they had no preference as long as the speaker they were listening to was intelligible. Nine participants indicated that in the past when their English proficiency level was lower, they preferred to communicate with nonnative speakers of English because they felt that nonnatives were friendlier, approachable and they shared the same language learning experiences and struggles. One participant added that communicating with other nonnative speakers involved a greater number of communication breakdowns which were helpful in learning the language. Four participants indicated their preference for interacting with native speakers because they have the ability to adjust and simplify their language when they notice that the listener cannot understand them.

When asked about their preferences within an educational setting, the participants' responses also varied. Twenty-one participants indicated that when they were at a lower proficiency level of English they preferred to have a native speaker instructor. Five explicitly explained that having a native instructor would allow them to acquire the correct form of the language (i.e., correct grammar and pronunciation). Twenty-one participants maintained their preference for native speakers even after reaching more advanced levels in English and enrolling into different undergraduate and graduate programs. The participants explained that having a

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native speaker instructor or working with a native speaker classmate helps save time and effort. They explained that when the instructor is a native speaker, they understand the course content easier and faster. Four participants elaborated by sharing their own classroom experiences. They mentioned that they had been in a situation in which they were taught by a nonnative speaker with a strong Asian accent. These participants explained that during class they found themselves trying to write down what the instructor wrote on the board or presented on the PowerPoint slides. They also found themselves spending more time outside of class trying to gather additional material online and from other classmates in order to understand the content and pass a required course. These participants explained that what further complicated the situation in class or when communicating with these nonnative instructors was their inability to ask their nonnative instructors to repeat what they had said because they were shy and/or did not want to sound rude. Three participants, on the other hand, mentioned that they had found themselves in situations where they chose to enroll in classes taught by a nonnative instructor because sometimes these instructors were more knowledgeable and more experienced in their area of study than a native instructor; however, these participants pointed out that when they chose to enroll, the speech of the nonnative instructor must be comprehensible and intelligible.

As for the participants' preference for working with a native versus nonnative classmates. Three participants indicated that when their language proficiency level was lower they felt more comfortable working with nonnative speakers as long as they did not share the same L1 or have a strong accent, especially an East Asian accent. As advanced language users, five participants indicated their preference to work with native speakers because they could communicate with each other faster.

Interview item 4: Strategies Used to Enhance Understanding of Strong Accents

Item four in the follow-up interview asked the participants about the different strategies they utilize in order to enhance their ability to understand nonnative speakers with a strong accent. Participants explained that they would try to enhance their understanding by: a) explicitly asking the speaker to repeat what they had said ($n= 11$) or using a facial expression that would implicitly indicate to the speaker that they had not understood ($n = 1$), b) getting physically closer to the speaker ($n = 1$), c) trying to pay attention to speaker's gestures (e.g., looking at what they were pointing to) in an attempt to semantically map the word or sentence they were hearing to the gesture they were seeing ($n = 6$), d) making multiple clarification requests, such as saying "*do you mean…?*" ($n =3$), e) spending more time with the speaker in order to familiarize themselves with the accent ($n = 17$), f) resorting to written communication, such as emails or texting ($n = 5$), g) asking the speaker to slow down if they were talking too fast ($n = 4$), h) using their cell phone to ask the nonnative speaker to type in the word or sentence they said or show them an image that represented what they have said ($n = 1$).

Some participants indicated that it depended on the topic. Participants explained that if the topic were not important, they would: a) try to guess and grasp the general meaning ($n = 4$), b) pretend that they have understood what they heard ($n = 1$), or c) avoid any type of future interactions ($n = 1$). A couple of participants noted that in case of a nonnative accent, they did not feel obligated to understand it or become familiar with it. Interestingly, on the other hand, five participants expressed feeling obligated or had the desire to understand native accents. These participants who were studying in either the UK or the US indicated spending time watching videos that exposed them to the accents they found to be difficult, such as Irish or Scottish and African American Vernacular English, and they reported that such a strategy helped

enhance their understanding.

Interview item 7: Attention to Nonnative Speaker's Lip Movements and Gestures

Item seven in the follow-up interview asked the participants if their attention to nonnative speakers' lip movements and gestures depended on the strength of their accent. All 41 participants indicated that their attention did increase when they found themselves interacting with a nonnative speaker who had a strong accent. The participants noted that they would automatically start to look for cues, such as speaker's lip movements and gestures. One participant elaborated that her attention to the speaker's lip movements and gestures depended on the topic (familiar vs. unfamiliar) and three participants explained that their attention depended on their personal goals (e.g., needing to pass a required course vs. everyday casual interactions). One participant who was an engineering student further elaborated and mentioned having a Chinese instructor with a very strong accent. He mentioned that during class he paid great attention to his instructor's lip movements and gestures and explained not paying that much attention to the lip movements and gestures of his native instructors. Another participant explained that her attention really depended on the speaker's L1. She mentioned that her attention to the lip movements and gestures of a speaker with an unfamiliar nonnative accent would be greater than her attention to the lip movements and hand gestures of a speaker with a strong accent who is an Arab or a native speaker of English.

CHAPTER 4: DISCUSSION

RQ1: The Effects of Accent and Stimulus Condition on L2 learners' Listening Comprehension

The first research question explored how speakers' accent (native vs. nonnative) and stimulus condition (AV-gesture-face vs. AV-face vs. A-only) affected the listening comprehension of Arab L2 learners of English. The results of this study uncovered no significant differences in the listening comprehension scores of the participants who listened to the native speaker across three stimulus conditions. A closer examination of the mean scores across the three stimulus conditions showed a gradual decline in listeners' performance from the AV-gesture-face, to AV-face, to A-only. This trend could suggest that seeing both the native speaker's face and gestures may have helped increase the participants' understanding of the lecture. This observation aligns with some comments made by the participants who indicated that seeing the native speaker's gestures, especially the representational gestures (i.e., iconic and metaphoric) which were salient helped the listeners: a) grasp the meaning of some new concepts, b) visualize what was being described, and c) recall subsequent information when answering the questions on the listening comprehension test. The beneficial role of gestural cues in facilitating listeners' recall of information and comprehension of the native speaker's speech aligns with the findings of Sueyoshi and Hardison (2005) which highlighted the importance of representational gestures and their positive impact on L2 learners' listening comprehension.

As for nonnative accented speech, the results revealed that the listening comprehension scores of participants who listened to the nonnative speaker across the three stimulus conditions were significantly lower than the scores of those who listened to the native speaker. Interestingly, the role of visual cues, especially gestural cues in facilitating native speech was not observed

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when speech was delivered by the nonnative speaker. The mean scores of participants were not significantly different. These findings can be ascribed to a number of reasons. First, since the speaker in this study had a strong and unfamiliar accent, it is highly possible that the listeners were too occupied 'tuning in' to the various phonetic patterns produced by this nonnative speaker which would be a natural and automatic attempt to comprehend the speech they were listening to. This cognitive process is known as "perceptual adaptation" and it occurs when listeners encounter an unfamiliar accent (Banks et al., 2015). The participants' engagement in such a process could have prevented them from comprehending and recalling the various details and descriptions presented in the lecture. Interestingly, during the follow-up interviews, some participants across the three stimulus conditions reported being too occupied trying to recognize the phonetic patterns in the nonnative speaker's speech, especially during the first three or four clips, that they no longer were able to pay attention or comprehend the detailed information required to answer the listening comprehension questions. The similarity in the learners' performance across three stimulus conditions aligns with the findings of Banks et al. who reported that audiovisual cues (e.g., seeing the speaker's facial cues) did not facilitate native English listeners' perception of accented speech (i.e., novel accent vs. nonnative Japanese accent). The participants' lack of familiarity with the speaker's articulatory patterns could have reduced the effectiveness of visual cues, as suggested by Irwin et al. (2011).

Second, 71% of the gestures produced by the nonnative speaker in this study were beat gestures. As a result, listeners' exposure to representational gestures (25%) was very minimal. Also, as noted earlier in the paper, analysis of the gestures produced by the nonnative speaker revealed that he produced his gestures in a very subtle manner as opposed to the native speaker's gestures which were very salient. The nonnative speaker's gestures were so subtle that it is

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possible they did not facilitate listeners' comprehension and recall of information. Finally, the reduced benefits of visual cues in enhancing listeners' comprehension can be due to listener-related effects; that is, seeing the speaker in the AV-gesture-face and AV-face conditions could have increased the listeners' perceived nonnativeness of the speaker in this study. This possible explanation is compatible with Yi et al. (2013) who found that seeing an Asian speaker's facial cues reduced native English listeners' intelligibility of statements presented in noise by a Korean speaker. Yi et al. pointed out that listeners' implicit 'visual biases' can negatively affect listeners' processing of speech.

The findings of this study which indicated that the Vietnamese nonnative accent resulted in lower listening comprehension scores does not align with findings in Barros' (2011) study. Barros reported finding no significant differences in the listening comprehension of participants (i.e., undergraduate native English speakers) who listened to a native and a nonnative speaker of English in both AV-gesture-face and A-only conditions. The discrepancy in the findings between the studies can be due to a number of factors, such as: a) the nonnative speaker's first language, b) strength of accent, and c) the type and number of gestures produced by the speaker. The only descriptions that Barros provided about the nonnative speaker in her study was that the nonnative speaker was a Brazilian graduate teaching assistant in the department of Entomology and whose L1 was Portuguese. With such minimal information about the nonnative speaker's accent, it is difficult to draw more conclusive insights.

RQ 2: The Effects of Stimulus Condition on Ratings of Comprehensibility and Accented-ness

The second research question in this study investigated whether or not listeners' ratings of accentedness are affected by speakers' accent (native vs. nonnative) and stimulus condition

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(AV-gesture-face, AV-face and A-only). The findings of this study revealed significant differences in the accentedness and comprehensibility ratings of participants who listened to the native speaker. The significant differences were found in the accentedness ratings of participants in the AV-gesture-face and AV-face conditions. Interestingly, the native speaker was rated as the least nativelike in the AV-face condition and the most nativelike in the AV-gesture-face condition. The significant difference between the two conditions was also observed in the comprehensibility ratings of participants in the AV-gesture-face and AV-face conditions. The results revealed that L2 listeners in the AV-gesture-face condition had the least difficulty understanding the native speaker whereas L2 listeners in the AV-face condition had the greatest difficulty in understanding the native speaker. One possible explanation for these findings is that the native speaker's facial expressions while presenting which could have decreased listeners' ability to understand and negatively influenced their accentedness ratings. Participants in the AV-face condition indicated that seeing the native speaker's facial expressions was distracting and noted that the speaker's facial expressions signaled to them that speaker seemed uncomfortable or nervous. In fact, one participant in the AV-face condition sought confirmation from the researcher of whether or not the speaker was a native speaker of English. It is possible that speaker's nervousness while presenting could have led the participants to question whether or not English was her L1 and hence provided lower accentedness ratings. Such remarks related to the native speaker's emotional state were, interestingly, mostly made by participants in the AV-face condition. Emotional or affective state has been reported to be a talker-related factor that can, as seen in this study, affect listeners' perception of speech (Abercrombie ,1967). Participants' recognition of the speaker's facial expressions and emotional state highlight the myriad of information available to an observer just by solely looking at the speaker's face. When

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observers are looking at a speaker's face, their attention is not only focused on linguistic information (e.g., segmental identification cues from the lip movements) as highlighted in most research, but on information related to speaker's affect and facial features (e.g., lip shape) as will be discussed later in the study. The fact that observers' attention when looking at a speaker's face is not solely on the lip movements is further supported by a recent eye-tracking study conducted by Hardison and Inceoglu (2021). In their study, the participants whose L1 was English listened to a native speaker of English and a native speaker of French under three different conditions: a) audiovisual, b) audiovisual with noise, and c) visual only. Although Hardison and Inceoglu noted that observers' attention to a speaker's mouth area increased when the audio accompanying the speakers' face was degraded or absent, they generally found that under all three conditions, the participants most often tended to focus their attention on the speaker's nose with shifts of attention to other areas of the face, such as the eyes, forehead and especially the mouth. They attributed participants' frequent fixations to the mouth to what Lansing and McConkie (2003) referred to as the *Information Source attraction Effect*. Interestingly, in the present study, one participant in the AV-face condition noted that looking at the native speaker's eyes while listening helped convey the meaning of some points in the lecture and hence increased his understanding. The participant's attention to the speaker's eyes in this study can also be attributed to what Lansing and McConkie (2003) referred to as the *Information Source attraction Effect.*

The native speaker's facial expressions did not seem to have the same negative effect on the comprehensibility and accentedness ratings of participants in the AV-gesture-face condition. This could be attributed to speaker's use of representational gestures which facilitated the participants' comprehension and increased listeners' perception of the speaker's nativeness.

Interestingly, there were no significant differences between the comprehensibility and accentedness ratings of participants in the AV-gesture-face and the A-only conditions. One possible reason for this is that the native speaker's speech, as noted by some participants in the A-only condition, was very clear and intelligible.

Comprehensibility ratings of the nonnative speaker's speech uncovered no significant differences among the L2 listeners across three stimulus conditions. Surprisingly, this finding contradicted what was originally hypothesized in this study; that is, variation in comprehensibility ratings would be most evident in the nonnative speaker condition. Some participants, regardless of their stimulus condition, expressed that the nonnative speaker's accent was very strong and his articulation of speech was very unclear that they felt that seeing his face and/or hand gestures would not impact their comprehension of his speech. It is important to note, though, that this explanation does not imply that the similarity in the participants' ratings is solely attributed to the nonnative speaker's strong accent, but also other talker-related factors, such as: a) the amount, type, and saliency of the gestures the nonnative speaker produced, b) the L1 family the accent belongs to (Asian vs. European), and c) listeners' familiarity with the accent which are factors that will be further elaborated upon later in this study.

Unlike comprehensibility ratings, significant differences were observed in the accentedness ratings of participants in the AV-gesture-face and AV-face conditions, and the AV-gesture-face and A-only conditions. Opposite to what was hypothesized, the nonnative speaker was rated as the most nonnative-like in the AV-gesture-face condition and the least nonnative-like in the AV-face condition. The low accentedness ratings observed in the AV-gesture-face condition can be due to: a) L2 listeners' realization of the strength of the speaker's accent which affected their listening comprehension even in the presence of visual cues, b) the nonnative

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speaker's very subtle gesturing throughout the lecture which could have increased listeners' frustration and perception of the speaker's nonnativeness. The nonnative speaker was rated as least nonnative-like in the AV-face condition. There are two possible explanations for this. First, seeing only the speaker's face could have simply allowed the participants to focus more on the speaker's lip movements and facial expressions and such focus could have facilitated what was referred to earlier as "perceptual adaptation" (Banks et al. 2015). Second, it is possible that a listener-related factor, such as international experience (i.e., living abroad in an English-speaking country versus never living in an English-speaking country) could have played a role in the L2 listeners' accentedness ratings. Although Edwards, Zampini and Cunningham (2018) found that international experience did not impact the accentedness ratings of listeners from the US and Hong Kong who listened to English speech delivered by speakers from the US, Hong Kong, Singapore, and China, it is possible that international experience affected the accentedness ratings of the participants in this study. To further asses this, the background information of participants was rechecked, and it revealed that participants in the AV-gesture-face condition had more international experience (7 out of 20 participants) than the participants in the AV-face (4 out of 20) and A-only (5 out of 20) conditions. It is possible that the participants with no international experience could have been more lenient in their accentedness ratings.

RQ3: L2 listeners' Preferences and Perception of Visual Cues

Ratings of L2 Listeners Across Three Stimulus Conditions

The third research question explored how L2 listeners in each stimulus condition felt about the presence of visual cues when listening to either native or nonnative speakers of English.

AV-gesture-face condition. Participants in the native AV-gesture-face and the nonnative

AV-gesture-face conditions were explicitly asked to indicate if seeing the speakers' face helped facilitate their understanding of the seven clips they watched. The findings revealed significant differences in the ratings of participants in each accent condition. Participants who listened to the nonnative speaker moderately disagreed whereas those who listened to the native speaker mildly agreed. Overall, participants in both native AV-gesture-face condition and nonnative AV-gesture-face condition tended to assign lower ratings when asked about the facilitative effects of seeing the speaker's face. Participants in the native AV-gesture-face condition and the nonnative AV-gesture-face condition were also asked to indicate to what extent seeing the speaker's gestures facilitated their comprehension of the seven clips. The results uncovered significant differences in the ratings. Participants who listened to the native speaker assigned higher ratings which generally indicated that seeing the native speaker's gestures was facilitative. On the other hand, participants who listened to the nonnative speaker assigned lower ratings that indicated their negative attitude towards seeing the nonnative speaker's gestures. The participants generally indicated that seeing the nonnative speaker's gestures did not facilitate their comprehension.

AV-face-condition. Participants in the native AV-face and the nonnative AV-face conditions were also explicitly asked to indicate if seeing the speakers' face helped facilitate their understanding of the seven clips they watched. The results revealed significant differences between the ratings of participants in the native AV-face and the nonnative AV-face conditions. Participants in both conditions tended to assign lower ratings when asked if seeing the speaker's face facilitated their comprehension. Participants who listened to the native speaker indicated having a neutral stance whereas participants who listened to the nonnative speaker generally disagreed that seeing the nonnative speaker's face facilitated their understanding. Significant

differences between participants' ratings in the native AV-face and nonnative AV-face condition was also observed when the participants were asked if seeing the speakers' gestures could have enhanced their understanding of the seven clips they listened to.

Overall, based on the findings discussed above, it can be determined that seeing the native speaker's face in the AV-gesture-face condition was more facilitative than in the AV-face condition. The neutral stance observed in the ratings of participants in the AV-face condition can be ascribed to the native speaker's facial expressions that many participants found to be distracting rather than helpful. Another interesting point is the positive yet moderate ratings of participants in the AV-gesture-face condition when asked about the facilitative effects of seeing the native speaker's gestures. Participants in the AV-gesture-face condition explained during the interviews that the native speaker's gestures were insufficient. They expressed that they needed to see more meaningful (i.e., representational) gestures that would help them understand the topic they were listening to, especially since the topic involved many descriptions and instructions. The participants' comments raise an important question which is: did the native speaker's lack of expertise in the topic she presented affect her use of representational gestures? Traften, Trickett, Stitzlein, Saner, Schunn, and Kirschenbaum (2009) confirmed that speakers who are more experienced in a certain domain produce more representational gestures than those who are less experienced. Traften et al. highlighted in their study the importance of examining the gestures of speakers who have real-world domain knowledge rather than novices. It is also possible that the native speaker's emotional state (i.e., feeling nervous and uncomfortable) may have been linked to her lack of expertise.

As for the nonnative speaker, overall, participants tended to assign lower ratings which indicated that L2 listeners in both the AV-gesture-face and AV-face conditions did not find that

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seeing the nonnative speaker's face had a facilitative effect on their listening comprehension. This result leads to several interesting possibilities. First, the nonnative speaker in this study had a strong nonnative accent which, regardless of listeners' amount of attention to the speaker's face, could have negatively reduced the participants' ability to "adequately benefit" from seeing the nonnative speaker's face and lip movements (Yi et al. 2013). Second, the nonnative speaker in this study had an accent (i.e., Vietnamese accent) that was unfamiliar to the majority of participants in the study. This lack of familiarity could have negatively influenced the facilitative effects of seeing the speaker's face and lip movements. In Irwin et al. (2011), native English listeners from Nottingham were able to speechread sentences visually presented by talkers with a Nottingham accent more accurately than sentences presented by talkers with a Glaswegian accent. Irwin et al. concluded that listeners' familiarity with an accent enhances listeners' ability to lip read speakers' speech more accurately. Irwin et al. also added that generally both groups of listeners found that the Nottingham accent was easier to lip read than the Glaswegian accent and they concluded that not only familiarity with the accent affects listeners' ability to benefit from the speaker's lip movements, but also the accent itself. That is, regardless of listeners' familiarity with the accent, some accents are generally harder to speechread than others. In this study, the participants listened to an unfamiliar accent that can generally be more difficult to understand than other nonnative accents.

The final and third factor that could account for the participants' ratings is the size and shape of the nonnative speaker's lips which is a talker-related factor. Interestingly, this point was raised by a participant in the AV-gesture-face condition. The participant noted during the interview that some speakers have lip shapes and sizes that are easier to read than others. She explained that, in this study, the size and shape of the nonnative speaker's lips did not allow her

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to benefit from seeing the speaker's lip movements. Interestingly, the participant's comment lends support to previous studies which reported that the speaker's lip shape (Massaro, Cohen, & Gesi, 1993) and lip visibility (talker with neutral lips vs. talker wearing bright lipstick) can influence speech readability (Lander & Capek, 2013).

In addition to the participants' negative ratings towards seeing the nonnative speaker's face, they also provided mildly negative ratings when asked about the facilitative effects of seeing the nonnative speaker's gestures. As discussed earlier in the study, the nonnative speaker's gestures were not produced in a salient and clear manner. This could have reduced the participants' ability to notice and benefit from them. One participant expressed the feeling that the speaker seemed to be producing the same motions throughout the seven clips. Also, the participants' noticing and the facilitative effects of seeing the nonnative speaker's gestures could have been further reduced by listeners' lack of familiarity with the topic and the speaker's strong and unfamiliar accent which may have prevented them from noticing and/or mapping what was being said to any meaningful gestures.

A-only condition. No significant differences were found between the ratings of participants who listened to the native speaker and those who listened to the nonnative speaker. The participants in both accent conditions moderately agreed that seeing the speaker could have enhanced their ability to comprehend the lecture they listened to. The very similar ratings provided by the participants in both accent conditions suggests that, overall, listeners tend to prefer to see the speaker's face and hand movements; however, based on the ratings of participants in the AV-gesture-face and AV-face in both accent conditions, this preference can be positively or negatively influenced by a number of talker-related factors, such as speaker's facial expressions, visibility of the speaker's lips, and saliency, type and number of gestures produced,

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etc.

RQ4: The Effects of Accent and Visual Cues on L2 Listeners' Daily Usage of English and Language Development

The fourth and final research question in this paper explored how visual cues and speaker's accent influenced the participants' preferences in everyday communication and their choice of activities that help improve their listening, speaking and vocabulary. The participants indicated that the top six activities they used the most in their everyday English usage were: 1) watching TV and other visual media (93%), 2) attending, online or in person, face-to-face classes (71%), 3) talking mask-to-mask, outside of class, to nonnative speakers who do not speak Arabic (66%), 4) emailing (63%) , 5) talking mask-to-mask, outside of class to native speakers of English (59%), 6) talking face-to-face, outside of class to native speakers of English (50%). The participants indicated that their usage of English was affected by a number of factors which are: a) the COVID-19 pandemic which led to an increase in the amount of time spent watching TV or interacting mask-to-mask with nonnative speakers of English, b) the participants' status as students and/or instructors, c) the participants' strong preference for visual cues.

Effects of Visual Cues: Activities that Help Develop Listening, Speaking and Vocabulary Skills

Generally, it was found that the participants tended to prefer activities that involve auditory-visual input. The participants explained that activities with visual cues helped them decode, comprehend, and restore information easily and quickly. It is important to point out, however, participants emphasized that their choices and preferences were not solely based on the presence or absence of visual cues, but also on the degree of compatibility between the activity and the skill they wanted to develop. For instance, the majority of the participants ranked

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'*talking face-to-face with native speakers*' as the top activity that they felt helped improve their speaking skill because, as pointed out by some participants during the interview, talking with native speakers allowed them to actually practice speaking.

Effects of Speakers' Accent: Activities that Help Develop Listening, Speaking and Vocabulary Skills

The participants' responses uncovered a strong preference for communicating with native speakers versus nonnative speakers. The majority of activities that participants indicated helped improve their listening, speaking, and vocabulary skills involved exposure to native English speech, even in the absence of visual cues. Interestingly, participants tended to have a lack of preference for activities that involved exposure to nonnative speech. This lack of preference was maintained and observed even in the presence of visual cues. Participants noted multiple times during the interviews that their preference to communicate with native speakers arises from the fact that, unlike nonnative speech, native speaker's speech is usually clear, and it does not contain grammatical, segmental, or suprasegmental errors. Some also expressed that sometimes native speakers have the ability to adjust their speech (i.e., talk more slowly or use more simplified words) when interacting with L2 learners of English. The participants' preference for communicating with a native versus nonnative speaker will be further elaborated upon later in the paper.

Preference for and Perception of Visual Cues When Communicating with Native Versus Nonnative Speakers of English

Generally, in everyday interactions, participants moderately agreed that seeing a native versus a nonnative speaker's face and/or gestures facilitated their comprehension when communicating in English. The participants indicated that during face-to-face communication,

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their attention to both native and nonnative speakers' gestures was greater than their attention to the speaker's face. The participants also moderately agreed that seeing a native and nonnative speaker's gestures helped increase their comprehension during mask-to mask interactions. Interestingly, the results revealed that participants' awareness of and attention to native and nonnative speakers' gestures were similar in both face-to-face and mask-to-mask communication in English.

Another interesting finding is that participants' attention to speakers' lip movements and gestures decreases when communicating in Arabic versus English. A few participants explained that when communicating in Arabic, they do not usually experience communication breakdowns or have difficulty understanding other speakers of Arabic hence their reliance on visual cues decreases. When participants were asked about whether or not their own use of gestures was affected by the language they were communicating in, the participants' responses were neutral. A couple of participants noted not being consciously aware of the number of gestures they produce when they communicate in English. This finding supports Busa's (2015) claim that speakers basically may have no conscious realization of their use of nonverbal language when communicating with others. Overall, the participants generally agreed that their use of gestures does facilitate the comprehension of friends, classmates, and teachers.

Generally, the responses of the participants throughout the SAVC questionnaire emphasized their preference for auditory-visual input when communicating in English. On the other hand, they emphasized their lack of preference for auditory only communication, especially with nonnative speakers. Some participants explained that in the past they had intentionally avoided interactions with native and nonnative speakers on the phone. This observation aligns with Kida (2008) who noted that communicating on the phone can be a very difficult task for L2

learners of English. This difficulty may be primarily ascribed to the absence of visual cues. Another possible explanation for participants' preference to avoid phone communication with nonnative speakers can be attributed to the fact that some nonnative speakers have many suprasegmental errors that can further complicate listeners' ability to decode and grasp the meaning of what is being said (Derwing and Munro, 2015).

Follow-up Interview Observations

The follow-up interview conducted with the participants revealed some important points that are worth highlighting and discussing. These points provide deeper insights which could help understand the effects of visual cues and speakers' accent on everyday communication in English. In this study, the participants highlighted a number of factors that can further complicate their comprehension of nonnative speech. The first factor is listeners' familiarity with the nonnative accent and the nonnative speaker's L1 family (e.g., the participants expressed having difficulty comprehending Asian accents). The participants' comments further support the findings of previous studies which indicated that listeners' experience with nonnative speech (Kennedy & Trofimovich, 2008) and/or shared phonology between the listener and the speaker (Wang & van Heuven, 2015) are factors that can help increase the intelligibility of speech. Second, the participants noted that topic familiarity plays a role in increasing their comprehension of nonnative speech. The notion that topic familiarity can help increase listeners' comprehension of nonnative accented speech aligns with findings of previous studies (Barros, 2010; Gass and Varonis, 1984). Interestingly, the effects of the factors mentioned above were not limited to participants' listening comprehension only, but also their attention to the nonnative speaker's gestures (i.e., attention to nonnative speaker's gestures increased when the topic and accent were unfamiliar)

The participants in this study reported utilizing a number of strategies to enhance their ability to comprehend nonnative speakers with a strong accent. As noted above, the participants indicated trying to familiarize themselves with the accent (i.e., listen or interact more with the nonnative speaker) and/or increase their attention to the speaker's lip movements and gestures. The participants also added that they would: a) ask the speaker to repeat themselves, b) rely on contextual cues (e.g., pictures and surrounding setting), c) avoid verbal communication and rely more on written interactions via emails or ask the nonnative speaker to type or write down what they had said. In the present study, some participants indicated that while listening to the first clip, they were unable to identify the general topic of the lecture the nonnative Vietnamese speaker was presenting. The participants noted that reading the questions that followed the first clip helped them gain a better understanding of what was generally discussed in the first clip. The final strategy one participant used to enhance his comprehension of nonnative accented speech was to get physically closer to the nonnative speaker. This point made by the participant can help highlight the role of physical distance in facilitating or hindering listeners' comprehension. The facilitative effects of distance were observed in Zheng and Samuel (2019). Their findings revealed that listeners' recognition of words produced by a nonnative speaker with a relatively strong Chinese accent was greater when the listeners saw a video with the camera zooming in on the speaker's head versus a video with the speaker being relatively far. Zheng and Samuel explained that closer distance increased listeners' visual access to the nonnative speaker's lip movements which in turn facilitated their comprehension of strong nonnative accented speech.

Finally, during the follow-up interviews, the participants were asked whether or not they had a preference in terms of communicating with a native speaker versus a nonnative speaker.

The participants pointed out that their preferences depended on the factors discussed earlier (i.e., nonnative speaker's L1 family, familiarity with the topic and the nonnative speaker's accent). The participants' preferences were also found to be influenced by the listeners' proficiency level. Some participants indicated that prior to becoming advanced users of English, they preferred to communicate with nonnative speakers of English because they shared the same struggles. The participants added that interactions with nonnative speakers consisted of more instances of communication breakdowns and were more challenging which helped improve their oral skills. In Hardison (2014), graduate Chinese learners of English also expressed that communicating with nonnative speakers of English benefitted their oral skills. The Chinese learners in Hardison's study explained that interactions with nonnative speakers pushed them to negotiate meaning and address any occurrences of communication breakdowns. On the other hand, some participants in this study indicated their preference to communicate with native speakers because when difficulties in communication arose during interactions with L2 learners of English they tended to have the ability to simplify and adjust their speech. This scaffolding behavior depicted by native speakers when interacting with learners was also pointed out by the Chinese learners of English in Hardison's study.

Overall, the participants in the study added that within educational settings, they generally preferred to have a native English instructor rather than a nonnative instructor. They explained that during their lower English proficiency levels they preferred to have a native English instructor because that would give them exposure to correct grammar and pronunciation. This preference supports the claim that native speakers have greater linguistic competence and hence are perceived to be "better language models" for learners (Medgyes, 2001). Some participants added that even as advanced users of English at the university level they continue to

have a preference for native English instructors because they are clearer and easier to understand. Although, the participants generally reported having a preference for native English instructors, some did point out having no preference as long as the instructor is intelligible and knowledgeable in their area of study. In fact, one participant indicated struggling to understand his Chinese instructor at the beginning of the semester. However, he mentioned that his comprehension of his instructor's accented speech and his negative attitude towards him decreased over the semester. The participant explained that with time he began to get accustomed to his instructor's accent and noted that the instructor's knowledge and expertise further played a role in increasing his positive attitude towards his instructor. Surprisingly, this finding was also observed in Moussu (2010) who reported that L2 listeners' frequent exposure to their nonnative English instructors' speech positively increased L2 learners' acceptability of their nonnative English instructor.

CHAPTER 5: CONCLUSION

Potential Pedagogical and Assessment Implications

This study has direct implications for both native and nonnative speakers in various educational domains as well as for the field of language assessment. To review, at the outset of this study it was hypothesized that speakers' accent (native vs. nonnative) and stimulus condition (AV-gesture-face vs. AV-face vs. A-only) affect L2 listeners' perception of speech. The results of the study revealed that accent (standard American accent vs. strong Vietnamese accent) significantly impacted L2 listeners' comprehension. The listening comprehension scores of participants who listened to the native speaker were significantly higher than those who listened to the nonnative speaker.

The examination of whether or not stimulus condition (AV-gesture-face vs. AV-face vs. A-only) would increase or decrease L2 listeners' listening comprehension uncovered interesting results. Stimulus condition did not impact the listening comprehension of L2 listeners. The L2 listeners' listening comprehension scores and interview responses revealed no facilitative effects for nonnative speaker's facial cues and/or gestures. Based on the L2 listeners' interviews, this lack of facilitation was ascribed to: a) the speaker's strong Vietnamese accent which the majority of L2 listeners in this study were unfamiliar with, b) the nonnative speaker's very subtle manner in producing gestures which may have made it difficult for the L2 listeners to detect and benefit from seeing his gestures while listening, c) L2 listeners' implicit visual bias towards the Asian speaker which may have reduced the intelligibility of the nonnative speaker's speech (Yi et al, 2013). As for the native speaker, stimulus condition did not significantly affect L2 listeners' comprehension. Although no significant differences were found among the L2 listeners across three stimulus conditions, the participants' listening comprehension scores and interview

responses showed that the scores of participants in the AV-gesture-face condition was higher than the AV-face and A-only conditions. The L2 listeners in this study indicated that the native speaker's gestures did facilitate their understanding and it helped them recall important information. Based on these observations, it was concluded that gestural cues, as predicted, facilitate comprehension and are most effective when produced by the speaker in a salient manner that can be easily detected by the L2 listener. Surprisingly, both listening comprehension scores and L2 listeners' responses to the SAVC questionnaire revealed that both the native and nonnative speakers' facial cues were not very helpful. Based on the L2 listeners' interview responses, these findings were ascribed to the native speaker's facial expressions which revealed to the L2 listeners her emotional state (i.e., nervous and uncomfortable) and the nonnative speaker's lip, shape, unfamiliar accent, and his incorrect articulation of sounds which could have distracted and reduced the L2 listeners' ability to utilize the speakers' facial expressions effectively.

As for the effects of accent and stimulus condition on L2 listeners' ratings of accentedness and comprehensibility, the analysis revealed significant differences in L2 listeners' accentedness and comprehensibility ratings of the native speaker's speech. The significant differences were between the AV-gesture-face and AV-face conditions. Participants' ratings revealed that the native speaker was most 'native-like' and most comprehensible in the AV-gesture-face condition; and the least 'native-like' and most difficult to understand in the AV-face condition. The lower ratings observed in the AV-face condition were again attributed to the native speaker's emotional state and what the participants described as distracting facial expressions of the native speaker. As for ratings of the nonnative speaker's speech, there were no significant differences in participants' comprehensibility ratings across three stimulus conditions.

The very similar ratings were ascribed to the speaker's strong accent and subtle gesturing. On the other hand, there were significant differences in the participants' accentedness ratings. Results showed that the nonnative speaker was rated as most nonnative like in the AV-gesture-face condition and the least nonnative like in the AV-face condition. This finding was ascribed to a number of factors such as speaker's strong accent, subtle manner in producing gestures, listeners' increased attention speaker's lip movements and face in the AV-face condition, and finally listeners' international experience.

Overall, interview responses emphasized the possible effects of topic familiarity, accent familiarity, and shared phonology between the listener and speaker on L2 listeners' comprehension. The absence of such factors in the present study may have further reduced listeners' comprehension and ability to effectively benefit from seeing both the native and nonnative speakers' face and/or gestures. L2 listeners' responses to the SAVC questionnaire uncovered their general preference for visual cues in their everyday interactions and when choosing activities to develop their English listening, speaking and vocabulary skills. The L2 listeners also indicated their general preference for native speech versus nonnative and many expressed their constant struggle to comprehend Asian accents (e.g., Chinese, Japanese, and Vietnamese). The L2 listeners also emphasized their preference for visual cues when communicating with nonnative speakers and they reported their intentional avoidance of talking on the phone in English, especially with nonnative speakers. Although the L2 listeners in this study indicated their preference to communicate with native speakers, some indicated that their preference depended on the intelligibility of the nonnative speaker's speech and subject knowledge.

The findings of the present study provide valuable insights that can help identify: a) when a nonnative speaker's accent becomes problematic, and b) how to address or minimize difficulties in comprehending accented nonnative speech. Pedagogically, the findings discussed above highlight the need for both native and nonnative speakers, especially instructors, to be aware of the importance of not only the type of gestures they use, but also the manner in which they produce them (salient vs. subtle). In classroom settings, both native and nonnative speakers should be aware of their use of representational gestures and the strong impact it can have in helping listeners comprehend speech, especially when the topic being discussed is not familiar to the listeners and involves physical and spatial descriptions. The findings of this study can help nonnative speakers with strong accents and/or teacher preparatory programs realize the importance of having accented speakers accompany their speech with not only meaningful gestures, but also other visual contextual cues such as: a) writing on the board any new jargon or words they tend to mispronounce, b) pictures or videos, c) using handouts, and/or PowerPoint slides. Such strategies can be utilized at the beginning of the semester or at least until the L2 listeners begin to become more familiar with the nonnative speakers' accent. The findings can also help draw the attention of program directors to the importance of considering the phonological similarities between the nonnative instructor and the L2 listeners. This point also needs to be taken into consideration by language instructors teaching in language centers in various English-speaking countries when assigning lower proficiency L2 learners to groups to work on certain class activities (e.g., Arab learners of English may struggle to understand an Asian classmate).

As for assessment implications, it may be helpful to raise the awareness of nonnative test takers taking a speaking test in an audiovisual situation to the possible facilitating effects of

salient representational gestures and the potential impact that the use of such salient

representational gestures may have in enhancing raters' comprehension of their speech and

possibly their score. This point may help test takers, raters, and researchers in the field of

assessment to consider the effect of audio recording only versus video recording versus in person

face-to-face meetings when assessing nonnative accented speech.

Limitations and Future Directions

The present study touched upon the effects of accent and stimulus condition on L2 Arab

listeners': a) listening comprehension, b) accentedness and comprehensibility ratings, c)

preference for visual cues in daily communication and language learning. There are a number of

limitations to be addressed in order to advance this line of research. First, both the native and the

nonnative speakers in the study delivered a lecture about a topic (i.e., ceramics) that they had no

background knowledge or previous experience in. This lack of knowledge and experience could

have affected speakers' production of representational gestures (Traften et al., 2009). Both

speakers in the present study were given a text and were directed to rehearse presenting the text

prior to recording the lectures. This was done to ensure that both lectures were as similar as

possible. Controlling the information the speakers delivered could have impacted their facial and

gestural cues. Furthermore, it is important to point out that rehearsing the text could have

improved the nonnative speaker's speech. Based on these observations, future studies could

enhance their ecological validity by focusing on recording only a knowledgeable and

experienced nonnative speaker delivering a lecture in an actual classroom setting. A natural

setting can help reveal important insights. In Sueyoshi and Hardison (2005), the native speaker

the L2 learners listened to had prior knowledge of and experience with the topic delivered (i.e.,

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ceramics) and the speaker was not restricted to a particular text, such factors could have played a role in finding significant facilitative effects for facial and/or gestural cues.

Third, for cultural reasons, while conducting the experiment, some participants decided to maintain their privacy and keep their cameras off as they took the listening comprehension test. As a result, it was not possible to fully monitor the participants in the AV- gesture-face and AV-face condition to ensure that they kept their eyes on the screen and saw the speaker's face and gestures. It is important to note though, that prior to taking the test, the participants were instructed to look at the screen in front of them and interaction with the participants during the Zoom meeting revealed their willingness to ensure they follow the instructions. Fourth, the year the participants indicated taking the IELTS and TOEFL test varied. Although it may be difficult to execute in the future, recruiting participants who took the IELTS or TOEFL test within three years of the study could help further control the proficiency levels of the participants, especially when utilizing a between groups design. Finally, the sample size in the present study is relatively small for a between-groups design and could have impacted the robustness of the statistics. This was unavoidable due to time constraints and COVID-19 restrictions.

The present study raises a number of additional avenues for future research that can help further examine the effects of nonnative accented speech and stimulus condition on L2 listeners' perception of speech. This study revealed that L2 Arab listeners had difficulty comprehending the Vietnamese accent. The participants also reported having difficulty comprehending Asian accents, in particular. As mentioned earlier in the study, implicit visual bias (Yi et al. 2013) and phonological differences between the listener's and speaker's L1s (Wang & van Heuven, 2015) could be factors that reduce the facilitative effects of visual cues. To further examine the effects of these factors, future studies could explore the role of strong accented Vietnamese speech and

stimulus condition on Asian L2 listeners whose L1 has segmental or suprasegmental features that are similar to Vietnamese. Also, in the present study the nonnative speaker produced gestures in a very subtle manner. Future studies can examine the effects of using more salient gestures on L2 listeners' perception of strong nonnative accented speech. In addition to the saliency of speakers' gestures, it would be helpful to examine the role of physical distance between the L2 listener and the speaker in enhancing listeners' perception of nonnative speakers' facial and gestural cues. The positive effects of seeing the speaker's face from a closer position was observed in Zheng and Samuel (2019) who found that a closer distance facilitated native English listeners' recognition of words produced by a Chinese speaker with a strong accent. It would be worthwhile to investigate the effects of apparent distance on L2 listeners' recognition of English discourse produced by a nonnative speaker with a strong accent. Finally and most importantly, the present study explored the effects of a strong unfamiliar accent and compared it to the effects of a clear standard American accent. The next step would be to explore the effects of additional accent types with varying degrees of accentedness as well as how visual cues affect listeners' perception of these accents; such examination could help draw more conclusive results.

APPENDICES

Appendix A. Background Questionnaire

Please fill in the following information:
1. Participant's information:
   a. First name: _____
   b. Last name: _____
   c. Gender: ☐Female   ☐Male
   d. Age:
2. Where are you originally from? _____
3. At what age did you start to learn English? _____
4. How many years have you studied English (or attended classes where English is the medium of instruction) in the following environments?

Elementary school_____
Middle school_____
High school_____
University_____
Private language school/tutoring_____

5. How long have you been in an English-speaking country?
(   ) year(s) and/or (   ) month(s)
6. What is the level of the program you are currently in?

☐Ph.D. ☐Master ☐ Undergraduate ☐other   If other, please specify_____

7. What is your current area of study? _____
8. How long have you been in your current program? _____
9. Please provide your most recent overall language proficiency scores for ONE of the following tests:

TOEFL   Internet-based _____
IELTS _____
10. Please provide your most recent LISTENING score for ONE of the following tests:
TOEFL   Internet-based _____
IELTS _____
11. Please indicate the year in which you took the IELTS or TOEFL test?
☐ 2020
☐ 2019
☐ 2018
☐ 2017
☐ 2016
☐Other,
If you chose *other,* please specify the year _____

12. How many minutes or hours a week do you use English in face-to-face interactions with native speakers?
Minutes _____   Hours _____
13. How many minutes or hours a week do you use English in face-to-face interactions with nonnative speakers?

Minutes _____   Hours _____

14. How many minutes or hours a week do you use English in mask-to-mask interactions with native speakers?
    Minutes _____   Hours _____
15. How many minutes or hours a week do you use English in mask-to-mask interactions with nonnative speakers?
    Minutes _____   Hours _____
16. How many minutes or hours a week do you watch English programs, films, shows, etc. on TV or the internet?

Topic Title: The Basics of Ceramics

Original script given to both native and nonnative speakers:

Clip 1: (206 words)
So today I am going to talk to you about two things:
The first thing I am going to talk to you about is how to mix clay bodies in the studio. I will also give you some tips that you need to keep in mind when building a ceramic pot, and finally I will talk about how to glaze your ceramic pot. So, mixing clay in the studio is a pretty straightforward process. If you have a small batch, you can just mix it by hand. If you want to make a large batch. However, you are going to need a clay mixer which is a machine designed to churn the components of clay body with water until it reaches a suitable consistency for use. Clay mixers, they are large heavy machines; and they make a lot of dust when they mix, so you are going to need some kind of ventilation or mask. For this reason, a lot of contemporary ceramists do not use a clay mixer, they just buy their clay from a commercial source. This makes sense because you can save studio space. You do not need to have a clay mixer in there; and it is also safer and more convenient.

Clip 2: (419 words)
Sometimes you want to know how to mix your own clay bodies. So today I am going to teach you how to make small batches of clay bodies. Mixing a small batch requires about 500 to 20,000 grams of dry clay material. You might want to mix a small batch if you want to test a new clay body recipe or to make a small amount of a special clay body, such as a porcelain or grit loaded clay. The mixing process I am going to describe to you is not that difficult. It is pretty quick. It is not complicated, and it is not expensive or complex, and you do not have to rely on a machine. So, first what you want to do is weigh all of the clay materials. All the components that you are going to use to make up the clay. you want to mix them together carefully so that they are evenly mixed. Then, you are going to place all the materials onto a flat dry non-porous or water-resistant area such as a large piece of linoleum or stainless-steel table. You are going to form the powdered clay into a mound in the center of the table. And then you are going to form that mound into an atoll-like structure. So basically, you have a mound in the middle surrounded by a doughnut-shaped wall around it and so there is basically a moat-like trench around this central mound. Then you are going to be ready to add the water. To get a workable consistency of clay, you want to add about 30% of the weight of the clay in water give or take 5% on either side. You are going to pour that water into that moat like structure around your atoll; and you are going to let it sit for a few minutes. If water leaks through the wall of the structure, you can just patch it up by putting some of the dry material over that leak. Then, you are going to push the dry clay at the top of the wall. You are going to push that dry clay down into the water a little bit, and you are going to do the same thing with the clay in the center part. You are going to push

that dry clay into the water. If you do this for several minutes, slowly pushing the clay into the water, it will eventually mix the clay into the appropriate consistency that you want.

Clip 3: (302 words)
Once you have mixed the clay, you want to allow the clay to sit for a few minutes. Then, you will begin the process of wedging the clay. You might want to make some adjustments to the consistency of the clay. However, you should definitely wait until the end of the mixing process before you make any adjustments. Only then will you know if the clay is too wet or too dry and what you need to do. If the clay is too dry, you will use a spray bottle to spray water evenly on the surface of the clay. If the clay is too wet, you are going to let it air dry until it reaches the consistency that you desire. Then you are going to place the clay body into a plastic container. If possible, you want to let it sit for up to a week or so before using it. This aging allows the bacteria in the clay to multiply. The bacteria are not harmful. In fact, they are good for creating a workable clay body. Clay bodies which have aged more are generally more plastic than ones that have not.
Note: When you are wedging the clay during this process, it's a good idea to pass a wire several times through the clay body. Separate the pieces, shuffle them, and then mix them back up again to ensure a homogenous mixture; and that it is evenly spread. Also, note that mixing clay creates a lot of dust; and clay particles are known to be some of the smallest particles that we know of , so you are going to want to use ventilation or respiratory precautions, so that you do not breathe in some of the air-borne particles which can stay in the air up to 48 hours.

Clip 4: (269 words)
When your clay is ready, you can use it to build different objects. Making pots is like drawing, but in three dimensions. I always start with drawing the form and having that image present in mind when I am beginning to actually make the objects. To begin building the form, I start off by pinching out a small, curved disk like this. I use that to create the foot of the pot. I like surprising users when they pick up my pots; and they see that the bottom is not flat, but actually it is slightly convex. To pinch a curve disk, you are going to grab some clay that is about the size of a plum and you are going to stick your thumb in it. Then, you are going to create the proper thickness by pushing your thumb and rotating the pot around like this to ensure the proper and even thickness all the way around. You will eventually rotate the ball into a small half inch thick shape of it until everything is uniform. One important thing to remember when making pinched work is patience. Sometimes people build pots by throwing clay on the wheel instead of pinching. There are four important tips that you have to remember when throwing on the wheel. The first one is that you always apply and release pressure to a clay slowly. Number two: never allow water to collect in the bottom of the piece. Number three: You have to slow the wheel down in each step of the process; and finally, you have to be persistent in your efforts.

Clip 5: (256 words)
Now I will talk about glazing. Now, when your ceramic pot is dry and ready to use, you will need to glaze it. Glazing for a lot of people is troublesome. While there's no specific glazing system that fits everyone's needs and preferences, the more information you have allows you more options when you get into a glazing corner. My system for glazing evolved with my own body of work, and as the work changes, I draw on various aspects of it to suit the particulars of the pieces in front of me. For complex forms consisting of thrown and textured elements, I use a combination of pouring, dipping and brushing to get the color where I want it. Dipping is the easiest way to ensure an even application, and pouring, with a little practice, is the next. Brushing takes more practice, time and attention, and I only use it when the first two methods are not options for a tricky place on a pot. Also, I want to point out that there are two things that make the glazing process difficult. The first thing is water. The second one is gravity. You know when a bisque pot becomes too saturated with water; it will not accept glazing correctly. So, you have to use the least amount of water as possible even when you are making corrections. As for gravity, I think that many of us will experience having a drip of glaze flow downward towards the earth over a perfect application of the previous glaze.

Clip 6: (335 words)
Now I will give you some important tips that will help make the glazing process more successful. The first tip is that you have to keep the bisqueware clean. So, lotions, or even oils from your hand can create resist spots where glaze adheres unevenly or not at all. Therefore, throughout the phases of glazing, you have to handle the bisqueware with a clean pair of disposable gloves. If you think your bisqueware has been compromised such as splashed with something, is covered by grime or handled by a visitor, just bisque it again. The second tip is that you have to remove all dust before glazing; including bisque dust, studio dust, household dust, or street dust. In order to do that, you have to use an air compressor for the best result. When you are glazing you have to work outside, or you have to work in a well-ventilated area away from your primary workspace because bisque dust is very dangerous to your lungs. Now let us move on to tip number three. You must use the silicon carbide paper to remove any rough spots you missed before bisque firing. You have to place your work on a piece of foam to prevent chipping. Now, after sanding, wipe with a damp sponge to remove all traces of sanding dust. You need to thoroughly squeeze all the water out of the sponge. Rotate the sponge against your pot while making sure that each area of the sponge is only used once. For me, in each glazing session, I tend to use half a dozen or so of the orange round synthetic sponges. Keep in mind that your glaze must be well mixed. I use an electric drill. Now, glaze all the interior of the pot first by pouring the glaze in, then roll it down for complete coverage. For complex pieces requiring a number of glazing steps, glaze the insides the day before to give you a drier surface to work with, especially for brushing.

Clip 7 (288 words):
Now, what if you cannot dip or pour when you are glazing, what should you do? It is time for

brushing. but remember when you are brushing you have to watch your bisque. Why? Because the glaze is shiny and wet when first applied and then it becomes matt because the bisque absorbs the water. So, if you recoat too soon over a damp coat, you will move the foundation layer rather than add a second coat. Now, when you are brushing, you also have to pay attention to gravity. You have to hold the pot tight to encourage the glaze to go where you want it to go and to keep it from running where you do not want it to go. Now if a drip flows onto a previously glazed surface, you have to stop and then you have to set the pot and wait. I think many of you may want to wipe the drip, but do not do that. You have to resist the urge to wipe the drip. You have to let the drip dry. After that, you will carefully scrape the unwanted drip off with a dental tool or a metal rib. I also suggest you use a small compact brush to wipe away glaze in areas that you cannot reach with a sponge. Now, another tip I want to draw your attention to is to not brush-glaze from the big glaze bucket. You have to pour a small amount of glaze into a cup and then just stir occasionally to ensure it stays properly mixed. Now, keep a large damp sponge nearby to keep the brush handle clean. Unwanted drips often come from a brush handle that is covered with glaze

Native Speaker's script

Clip 1 (197 words)
Today I'm going to talk to you about two things:
The first thing I'm going to talk to you about is how to mix clay bodies in the studio. I'll also give you some tips that you need to keep in mind when building a ceramic pot, and finally I will talk to you about how to glaze your pot. So, mixing clay in the studio is a pretty straightforward process. If you have a small batch, you can just mix it by hand. If you want to make a large batch, however, you're going to need a clay mixer which is a machine designed to churn the components of clay body with water until it reaches a suitable consistency for use. Clay mixers are large heavy machines; and they make a lot of dust when they mix, so you're going to need some kind of ventilation or mask. For this reason, a lot of contemporary ceramists don't use a clay mixer, they just buy their clay from a commercial source. This makes sense because you can save studio space. You don't need to have a clay mixer in there; and it's also safer and more convenient.

Clip 2 (396 words)
Sometimes you want to know how to mix your own clay bodies. So, today I'm going to teach you how to make small batches of clay bodies. Mixing a small batch requires about 500 to 20,000 grams of dry clay material. You might want to mix a small batch if you want to test a new clay body recipe or make a small amount of a special clay body, such as porcelain or grit loaded clay. The mixing process I'm going to describe to you is not that difficult. It's pretty quick. It's not complicated, and it's not expensive or complex, and you don't have to rely on a machine. First, what you want to do is weigh all of the clay materials. All the components that you're going to use to make up the clay. you want to mix them together carefully so that they're evenly mixed. Then, you're going to place all the materials onto a flat dry non-porous or water-resistant area like a large piece of linoleum or stainless-steel table. You're going to form the powdered

clay into a mound in the center of the table. Then you're going to form that mound into an atoll-like structure. So basically you have a mound in the middle surrounded by a doughnut-shaped wall around it and there is basically a moat-like trench around this central mound. Then you're going to be ready to add the water. To get a workable consistency of clay, you want to add about 30% of the weight of the clay in water give or take 5% on either side. You're going to pour the water into that moat like structure around your atoll; and you're going to let it sit for a few minutes. If water leaks through the wall of the structure, you can just patch it up by putting some of the dry material over that leak. Then, you're going to push the dry clay up over the top of the wall. You're going to push that dry clay down into the water a little bit, and then you'll do the same thing with the clay in the center part. You are going to push that dry clay into the water. If you do this for several minutes, slowly pushing the clay into the water, it will eventually mix the clay into the appropriate consistency that you want.

Clip 3 (295 words)
Once you've mixed the clay, you want to allow the clay to sit for a few minutes. Then, you'll begin the process of wedging the clay. You might want to make some adjustments to the consistency of the clay. However, you should definitely wait until the end of the mixing process before you make any adjustments. Only then will you know if your clay is too wet or too dry and what you need to do about it. If the clay is too dry, you'll use a spray bottle to evenly spray water on the surface of the clay. If the clay is too wet, you're going to let it air dry until it reaches the consistency that you desire. Then you're going to place the clay body into a plastic container. If possible, you want to let it sit for up to a week or so before using it. This aging allows the bacteria in the clay to multiply. The bacteria are not harmful. In fact, they're good for creating a workable clay body. Clay bodies which have aged more are generally more plastic than ones that have not.
Note that when you're wedging the clay during this process, it's a good idea to pass a wire several times through the clay body. Separate the pieces, shuffle them, and then mix them back up again to ensure a homogenous mixture; and that it's evenly spread. Also, note that mixing clay creates a lot of dust; and clay particles are known to be some of the smallest particles that we know of, so you're going to want to use ventilation or respiratory precautions, so that you don't breathe in some of those air-borne particles which can stay in the air for up to 48 hours.

Clip 4 (258 words)
When your clay is ready, you can use it to build different objects. Making pots is like drawing, but in three dimensions. I always start with drawing the form and having that image present in mind when I'm beginning to actually make the objects. To begin building the form, I start off by pinching out a small curved disk like this. I use that to create the foot of the pot. I like surprising my users when they pick up my pots and they see that the bottom is not flat, but slightly convex. To pinch a curve disk, you're going to grab some clay that is about the size of a plum and then you're going to stick your thumb in it. Then, you are going to create the proper thickness by pushing your thumb and rotating the pot around like this to ensure an even thickness all the way

around. You'll eventually rotate the ball into a small half inch thick shape until everything is uniform. One thing to remember when making pinched work is patience. Sometimes people build pots by throwing clay on the wheel instead of pinching. There are four important tips that you have to remember when throwing on the wheel. The first one is that you always apply and release pressure to clay slowly. Number two: never allow water to collect in the bottom of the piece. Number three: You have to slow the wheel down in each step of the process; and finally you have to be persistent in your efforts.

Clip 5 (252 words)
Now I'll talk about glazing. When your ceramic pot is dry and ready to use, you'll need to glaze it. Glazing for a lot of people is troublesome. While there's no specific glazing system that fits everybody's needs and preferences, the more information you have allows you more options when you get into a glazing corner. My system for glazing evolved with my own body of work, and as the work changes, I draw on various aspects of it to suit the particulars of the pieces in front of me. For complex forms consisting of thrown and textured elements, I use a combination of pouring, dipping and brushing to get the color where I want it. Dipping is the easiest way to ensure an even application, and pouring, with a little practice, is next. Brushing takes more practice, time and attention, and I only use it when the first two methods are not options for a tricky place on a pot. Also, I want to point out that there are two things that make the glazing process difficult. The first thing is water. The second one is gravity. You know when a bisque pot becomes too saturated with water, it will not accept glazing correctly. So, you have to use the least amount of water as possible even when you are making corrections. As for gravity, I think that many of us will experience having a drip of glaze flow downward towards the earth over a perfect application of the previous glaze.

Clip 6 (331 words)
Now I'll give you some important tips that will help make the glazing process more successful. The first tip is that you have to keep the bisqueware clean. So, lotions, or even oils from your hand can create resist spots where glaze adheres unevenly or not at all. Therefore, throughout the phases of glazing, you have to handle the bisqueware with a clean pair of disposable gloves. If you think your bisqueware has been compromised such as splashed with something, is covered in grime or handled by a visitor, just bisque it again. The second tip is that you have to remove all dust before glazing; including bisque dust, studio dust, household dust, or street dust. In order to do that, you have to use an air compressor for the best result. When you're glazing you have to work outside, or you have to work in a well-ventilated area away from your primary workspace because bisque dust is very dangerous to your lungs. Now let's move on to tip number three. You must use the silicon carbide paper to remove any rough spots you missed before bisque firing. You have to place your work on a piece of foam to prevent chipping. Now, after sanding, wipe with a damp sponge to remove all traces of sanding dust. You need to thoroughly squeeze all the water out of the sponge. Rotate the sponge against your pot while making sure that each

area of the sponge is only used once. For me, in each glazing session, I tend to use half a dozen or so of the orange round synthetic sponges. Keep in mind that your glaze must be well mixed. I use an electric drill. Now, glaze the interior of the pot first by pouring the glaze in, then roll it down for complete coverage. For complex pieces requiring a number of glazing steps, glaze the insides the day before to give you a drier surface to work with, especially for brushing.

Clip 7 (284 words)
Now, what if you can't dip or pour when you're glazing, what should you do? It is time for brushing. but remember when you're brushing you have to watch your bisque. Why? Because the glaze is shiny and wet when first applied and then it becomes matt because the bisque absorbs the water. So if you recoat too soon over a damp coat, you'll remove the foundation layer rather than adding a second coat. Now, when you're brushing, you also have to pay attention to gravity. You have to hold the pot tight to encourage the glaze to go where you want it to go and to keep it from running where you do not want it to go. Now, if a drip flows onto a previously glazed surface, you have to stop and then you have to set the pot down and wait. I think many of you may want to wipe the drip, but do not do that. You have to resist the urge to wipe the drip. You have to let the drip dry. After that, you'll carefully scrape off the unwanted drip with a dental tool or a metal rib. I also suggest that you use a small compact brush to wipe away glaze in areas that you can't reach with a sponge. Now, another tip I want to draw your attention to is to not brush-glaze from the big glaze bucket. You have to pour a small amount of glaze into a cup and then stir occasionally to ensure it stays properly mixed. Now, keep a large damp sponge nearby to keep the brush handle clean. Unwanted drips often come from a brush handle that is covered in glaze.

<u>**Nonnative Speaker's script**</u>
Word count does not include expressions such as "*uhm*", '*okay*", "*alright*", "*you know*" and *false starts*)

Clip 1 (209 words)
Uhm, so today I gonna talk to you about two things, okay:
So, the first thing I'm gonna talk to you is how to mix clay bodies in the studio and I will also give you some tips that you need to keep in mind when building your ceramic pots, and finally, I will talk to you how to glaze your uhm ceramic pot, okay. So, mixing clay in the studio is a pretty straight forward process. Uhm, you know, if you have a small batch, then you just mix it by hand. But, if you, have a large batch, then you have to use a clay mixer. So a clay mixer is a machine designed to churn the components of clay bodies with water until it reaches the the suitable consistency for use. However, clay mixers, are large heavy machines so they will make a lot of dust when when they mix, you know, uhm you need to have some kind of ventilation or a mask. For that reason, a lot of contemporary ceramists do not use a clay mixer, instead they will buy their clay from a commercial source. That makes sense, right? because you can save, you know, studio space and you don't need to have a clay mixer. It's safer and it's more convenient.

Clip 2 (366 words)

Okay, sometimes you want to know how to uhm mix your own clay bodies. So today I am going to teach you how to do that, okay. So, mixing a small batch requires about, you know, 500 to 20,000 grams of dry clay materials. You may want to, you know, mix a small batch if you want to test a new clay body recipe or if you want to make a special amount of clay, uhm such as a porcelain or grit loaded clay. The mixing process is not that difficult. It's not complex. It's not expensive. It's very straight forward because you don't need to have a clay mixer, okay. So, uh first, uhm, you will weigh all of the clay materials and then you will mix all the components together carefully so that they are evenly mixed. Okay, and then you're gonna place all the materials on a flat dry non-porous or water-resistant area such as on a large piece of linoleum or stainless-steel table, okay. So, you're gonna form the powdered clay into a mound in the center of the table. And then you're gonna form that mound into an atoll-like structure. So basically, you have a mound in the middle surrounded by a uhm doughnut-shaped wall around it. So, there is basically a moat-like trench, okay, around the central mound, okay. So, then you are ready to add the water, alright. So, to get a workable consistency of clay, you want to add 30% of the weight of the clay in water and give or take, you know, 5% on either side. You're gonna pour the water into that moat like structure around your atoll; and then you're gonna let it sit there for a few minutes. If water leaks, you know, through the wall of the structure, you can just patch it up by putting some of the dry material over that leak, alright. Now, uhm, you also want to, you know, push the dry clay on top of the wall and you're gonna push that dry clay, you know, into the water a little bit, and then you're gonna do the same thing, you know, in the center part, alright. If you do this for several minutes, slowly pushing the clay into the water, it will eventually mix the clay into the appropriate consistency that you want.

Clip 3 (292 words)

Okay, so once you have mixed the clay, you want to allow the clay to sit there for a few minutes then you will begin the process of wedging the clay. You uhm you might want to make some adjustments to the consistency of the clay. However, you should wait until, you know, the end of the mixing process because you want to know whether the clay is too wet or too dry. If the clay is too dry, then you use a spray bottle to spray water, you know, uhm, over the surface of the clay. If the clay is too wet, you will let it air dry, you know, until, uhm, it reaches the consistency you desire. Then you are gonna place the clay body into a plastic container. If possible, you want to let there, you know, up to a week or so before using it, uhm, because this aging allows the bacteria in the clay to multiply. But don't worry the bacteria are not harmful. There're actually good for creating a workable clay body because, you know, clay bodies which have aged are generally more plastic than those that haven't.

Note that when you are wedging the clay during the process, it's a good idea to pass a wire, you know, through, uhm, the clay body several times to separate the pieces, uhm, shuffle them, and mix them back again to ensure a homogenous mixture and that it is evenly spread. And you also have to remember that mixing clay creates a lot of dust so clay particles are some of the smallest, you know, particles that we have known of, uhm, so you may want to use, like uhm, ventilation

or, uhm, respiratory precautions, you know, because you don't want to breathe in the air-borne particles that can stay, uhm you know, in the air for up to 48 hours.

Clip 4 (272 words)
Alright, so when your clay, your clay, is ready uhm, you can use it to build different objects. You know, making pots is like drawing, but in three dimensions, okay. I always start with drawing the form and having that image present in mind when I'm beginning to actually make the objects. To begin building the form, I start by pinching out a small curved disk like this and I use that to create, you know, the foot of the pot. Uhm, I like surprising users when they picking up, you know, when they pick up my pots because they can see that the bottom is not flat, but, uhm, actually it is slightly convex. To pinch a curve disk, you're gonna grab some clay that is about the size of a plum and then you're gonna stick your thumb into it, okay. Then, you gonna create the proper thickness by pushing your thumb and rotating the pot around like this to ensure the proper and even thickness all the way around, okay. You will eventually rotate the ball into a small half inch thick shape of it until everything is uniform. One important thing to remember when making pinched work is patience. Sometimes, you know, people, uhm, build pots by throwing clay on the wheel instead of pinching. There're four important, there are four important tips that you have to remember when throwing on the wheel, okay. The first one is that you always apply and release pressure to your clay body slowly. Number two: never allow water to collect, you know, in the bottom of the piece. Number three: You have to slow the wheel down in each step of the process; and finally, you have to be persistent in your efforts

Clip 5 (266 words)
Now I will talk about glazing. When your ceramic pot is dry and ready to use, you need to glaze it, okay. Glazing for a lot of people is troublesome. While there's no specific, uhm, glazing system that fits everyone's, you know, needs and preferences, the more information you have allows you to have more options when you're into the glazing corner. My system for glazing evolved with my own body of work. As the work changes, I draw on, you know, various aspects of it to suit the particulars of the pieces in front of me. For complex forms consisting of thrown and textured elements, I use a combination of pouring and dipping and brushing to get the color where I want it. Dipping is the easiest way, you know, to ensure an even application. Pouring, you know, with a little practice, is the next. Brushing takes more time, attention, and practice and therefore I only use that when the first two methods are not the options for a tricky place on a pot. Also, I want to point out that there are two things that make the glazing process difficult. The first thing is water. The second one is gravity, okay. So, you know when a bisque pot becomes too saturated with water; it will not accept glazing correctly so you have to use the least amount of water as possible even when you are making corrections and then (as you) as for gravity, I think that many of us will experience, you know, having (a) a drip of glaze flow downward towards the earth over a perfect application of the previous glaze.
Clip 6 (348 words)

Now, I will give you some important tips, uhm, that will help make the glazing process more successful. Okay, the first tip is that you have to keep the bisqueware clean, okay. So, lotions or oils from your hand can create, uhm, resist spots where glazing adheres unevenly or not at all and therefore, throughout the phases of glazing, you have to handle the bisqueware with a, uhm, clean pair of, you know, disposable gloves. If you think your bisqueware has been compromised I mean, you know, such as, uhm, splashed with something, covered by grime or handled by a visitor, you just bisque it again. Uhm, the second tip is that you have to remove all dust; including, uhm, bisque dust, you know, street dust, household dust or, uhm, studio dust. In order to do that, you have to use an air compressor for the best result. Now when you're glazing you have to work outside, or you have to work in a well-ventilated area far away from your primary workspace because the bisque dust is dangerous to your lungs, okay. Uhm, let us move to tip number three, okay. So, you must use the silicon carbide paper to remove any rough spots you missed before bisque firing. You have to place your work on a piece of foam to prevent chipping. After sanding, wipe with a damp sponge to remove all traces of sanding dust, but remember you need to squeeze, you know, all the water out of the sponge and rotate the sponge against your pot while making sure that each area of the sponge is only used once. For me, in each glazing session, I tend to use half a dozen or so of the orange round synthetic sponges. Keep in mind that your glaze must be well mixed, as well. So, for me, I use an electric drill. Now, glaze all the interior of the pot first by pouring the glaze in and then roll it down for a complete coverage. For complex pieces requiring a number of glazing steps, I myself glaze the insides the day before, you know because I want to have a drier surface to work with, especially for brushing.

Clip 7 (284 excluding)
Okay, so now, what if, uhm, you cannot dip or pour when you're glazing, what should you do? Okay, it's time for brushing, but remember when you're brushing you have to watch your bisque. Why? Because the glaze is shiny and wet when first applied; then, it becomes matt, uhm, because the bisque absorbs the water. So if you recoat too soon over a damp coat, you will remove the foundation layer rather than add a second coat, okay. Now, when you're brushing, you have to pay attention to gravity. You have to hold the pot tight, you know, to encourage the glaze to go where you want it to go and to keep it from running where you don't want it to go to. Now if a drip flows onto a previously glazed surface, you have to stop and then set the pot and wait. I think many of you may want to wipe the drip, okay, but don't do that. You have to resist your urge to to wipe the drip. You have to let the drip dry, okay, and after that, you will carefully scrape the unwanted drip off with a dental tool or a metal rib. (I also suggest you), uhm, you know, I also suggest that you should use a small compact brush to wipe away glaze in areas that you cannot reach with, uhm, you know, with a sponge. Now, another tip I want to draw your attention to is to not brush-glaze, you know, from the big glaze bucket. You have to pour a small amount of glaze into a cup and then stir occasionally to ensure it stays, uhm, properly mixed. Now, you keep a large damp sponge nearby to keep your brush handle clean because, you know, unwanted drips, uhm, often come from the brush handle that is covered with glaze.

(Statements followed by an asterisk represent the correct answers)

Clip 1:
1. How does the speaker recommend preparing a small amount of clay?
    a. Mixing it manually*
    b. Using a clay mixer
    c. Buying it from a store
2. Why does the speaker suggest not using a clay mixer?
    a. They are not commercially available
    b. They make the air unsafe to breathe*
    c. They produce more clay than you will need
3. How do many modern ceramic artists obtain their clay?
    a. They get it from a store*
    b. They make it in their studio
    c. They use a commercial mixer

Clip 2:
4. How does the speaker describe the process of making clay?
    a. It is fairly simple to do*
    b. It is easier than it looks
    c. It takes a lot of practice
5. How is clay measured?
    a. By volume
    b. by thickness
    c. By weight*
6. What is the first step in making clay?
    a. Forming a round ball
    b. Carefully mixing the ingredients
    c. Measuring the ingredients*
7. How much water should be added to the clay?
    a. Between 25%- 35% of the weight of the clay*
    b. Between 500 and 20,000 grams
    c. About 5% of the weight of the clay
8. What should you do if the water leaks out from the mound?
    a. Reduce the amount of water in the mix
    b. Form a new mound that is larger
    c. Use dry clay to fill the hole*
9. How should the dry clay and water be mixed?
    a. Quickly within one minute
    b. Gradually over several minutes*
    c. Slowly over about 30 minutes

Clip 3:
10. What should you do if the clay is too wet?
    a. Add more dry clay to the mix

b. Use a wedge to remove extra water
c. Allow the extra water to evaporate*
11. Why is it important to store the clay in a plastic container?
    a. It lets the bacteria in the clay reproduce*
    b. It helps the clay keep its shape
    c. It keeps harmful particles out of the air
12. Why is it important to have bacteria in the clay?
    a. They make the clay more flexible*
    b. They make the clay stronger
    c. They make the clay more beautiful
13. Why should you pass a wire through the clay?
    a. To break up parts of the clay that aren't mixed well*
    b. To reduce the amount of dust in the clay
    c. To distribute the bacteria throughout the clay
14. What would be a good way to stay safe while mixing the clay?
    a. Wear goggles to protect your eyes
    b. Wear gloves to protect your hands
    c. Wear a mask to protect your lungs*

Clip 4:
15. How does the speaker begin to design a pot?
    a. By looking at pictures of similar pots
    b. By drawing a picture of the pot*
    c. By measuring the right size for the pot
16. What surprises people about the pots the speaker makes?
    a. They have very even sides
    b. They were not made on a wheel
    c. They do not have flat bottoms*
17. Why is it important to rotate the pot?
    a. To allow the pot to dry correctly
    b. To make sure the sides are even*
    c. To create attractive designs on the pot
18. What advice does the speaker give about working on a wheel?
    a. Make sure you do not work too quickly*
    b. Use the wheel after pinching the clay
    c. Avoid using too much water in the clay

Clip 5:
19. How does the speaker describe the options for glazing?
    a. Most pots require a combination of glazing types
    b. Some types of glazing can only be used on some pots
    c. Different pots will require different types of glazing*
20. What is the least difficult way to give a pot an even coat of glaze?
    a. Brushing
    b. Pouring
    c. Dipping*

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21. When does the speaker use brushing on pots?
    a. When other techniques have failed
    b. When other techniques are not suitable*
    c. When other techniques are unnecessary
22. What is one condition that can prevent glaze from being absorbed properly?
    a. If the pot requires corrections
    b. If there are too many drips
    c. If the clay is too wet*
23. How does gravity affect the glazing process?
    a. Heavier pots are harder to glaze
    b. Water will collect at the bottom of a pot
    c. Excess drips can run down the side of a pot*

Clip 6:
24. What is important to avoid doing to an unfinished pot?
    a. Exposing it to outside air
    b. Touching it with bare hands*
    c. Allowing dust to fall on it
25. Why is it a good idea to apply glaze outdoors?
    a. The glaze will dry better in the fresh, open air
    b. Excess sand and water can be poured on the ground
    c. Breathing pottery dust can be harmful to your health*
26. Why is it essential to remove all dust on the pot before glazing?
    a. To create multiple layers for complex pieces
    b. To allow the glaze to become well mixed
    c. To ensure the glaze will stick to the pot*
27. What is done to make the surface of the pot smooth?
    a. It is rubbed with rough sandpaper*
    b. It is blasted with an air compressor
    c. It is thoroughly cleaned with sponges
28. For complex pieces, which part should be glazed first?
    a. The center
    b. The inside*
    c. The outside

Clip 7:
29. When can a second brush coat be applied?
    a. After the glaze is well mixed
    b. After the first coat has dried*
    c. After the drips have been removed
30. What happens if the pot is recoated too quickly?
    a. The first layer of glaze will be taken off*
    b. The glaze will drip too much
    c. The glaze may not be well mixed yet

31. How can the effects of gravity be overcome?

a. By removing drips that have formed
b. By holding the pot carefully as it is glazed*
c. By adding a second coat when needed
32. What should you do if an unwanted drip occurs?
a. Wait until the drip has dried before removing it*
b. Hold the pot in a different position to limit the drip
c. Clean the brush immediately to prevent more drips
33. How can excess glaze be removed from a pot?
a. By washing it in a bucket
b. By cutting it with a metal tool*
c. By letting it drip off
34. Why is it important to keep the brush handle clean?
a. To make sure the glaze stays well mixed
b. To remove excess drips when they occur
c. To prevent excess glaze from dripping*

Appendix D. Accentedness and Comprehensibility Questionnaire

Accentedness:
On a scale from 1 to 9, rate the accent of the speaker you just listened to from *1* being equal to '*very strong nonnative accent*' and *9* being equal to '*Native-like accent*'

Very strong
nonnative accent   Native-like
                                                                                              accent

    •   •   •   •   •   •   •   •   •

Comprehensibility:
On a scale from 1 to 9, indicate how the speaker's ACCENT affected your understanding of the lecture you just listened to. *1* being equal to '*very difficult to understand*' and *9* being '*very easy to understand*'

Very difficult
to understand   Very easy to
                                                                                            understand

    •   •   •   •   •   •   •   •   •

Appendix E. Preference for and Perception of Visual Cues Questionnaire

Part (1) of the SAVC Questionnaire
Items for AV-gesture-face Group Only

1. Watching the speaker's face helped me understand the lecture I just watched.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

2. Watching the speaker's gestures helped me understand the lecture I just watched.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

Items for the AV-face Group Only

3. Watching the speaker's face helped me understand the lecture I just watched.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

4. I would have understood the lecture better if I had seen the speaker's gestures.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

Items for the A-only Group Only

5. I would have understood the lecture better if I had seen the speaker.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

Part (2) of the SAVC Questionnaire
Questions for Participants in all the Groups

1. **Have you taken any classes related to ceramics or pottery?**
   ☐ Yes   ☐ No
2. **In general, when do you use English most often?**
   Please rank ONLY SIX of the statements below from *1* to *6*.
   1 being equal to *'the most often activity'*
   ___Watching TV and other visual media such as YouTube, Netflix, etc.
   ___Attending, online or in person, face-to-face classes
   ___Attending, online or in person, mask-to-mask classes
   ___Listening to the radio.
   ___Talking face-to-face, online or in person, to **native** speakers of English
   ___Talking face-to-face, online or in person, to **nonnative** speakers who do NOT speak Arabic
   ___Talking mask-to-mask, online or in person, to **native** speakers of English
   ___Talking mask-to-mask, online or in person, to **nonnative** speakers who do NOT speak Arabic
   ___Reading magazines/newspapers/books
   ___E-mailing
   ___Texting
   ___Working on written homework assignments

3. **Which activities do you think help improve your English <u>LISTENING SKILLS</u> most effectively?**
    Please rank ONLY SIX of the statements below from *1* to *6*.
    1 being equal to *'the most helpful activity'*
    ___Watching TV and other visual media such as YouTube, Netflix, etc.
    ___Talking face-to-face, online or in person, **to native** speakers of English
    ___Talking face-to-face, online or in person, to **nonnative** speakers who do NOT speak Arabic
    ___Talking mask-to-mask to **native** speakers of English
    ___Talking mask-to-mask to **nonnative** speakers who do NOT speak Arabic
    ___Talking to **native** speakers of English on the telephone (Audio-only)
    ___Talking on the telephone (Audio-only) to **nonnative** speakers who do NOT speak Arabic
    ___Listening to the radio/CD
    ___Attending, online or in person, face-to-face classes or meetings

4. **Which activities do you think help improve your English <u>SPEAKING SKILLS</u> most effectively?**
    Please rank ONLY SIX of the statements below from *1* to *6*.
    1 being equal to *'the most helpful activity'*
    ___ Watching TV and other visual media such as YouTube, Netflix, etc.
    ___Talking face-to-face, online or in person, to **native** speakers of English
    ___Talking face-to-face, online or in person, to **nonnative** speakers who do NOT speak Arabic
    ___Talking mask-to-mask, online or in person, to **native** speakers of English
    ___Talking mask-to-mask, online or in person, to **nonnative** speakers who do NOT speak Arabic
    ___Talking to **native** speakers of English on the telephone (Audio-only)
    ___Talking on the telephone (Audio-only) to **nonnative** speakers who do NOT speak Arabic
    ___Listening to the radio/CD
    ___Attending, online or in person, face-to-face classes or meetings

5. **Which activities do you think help improve your English <u>Vocabulary</u> most effectively?**
    Please rank ONLY SIX of the statements below from *1* to *6*.
    1 being equal to *'the most helpful activity'*
    ___Watching TV and other visual media such as YouTube, Netflix, etc.
    ___Scrolling through websites, blogging, etc.
    ___Talking face-to-face, online or in person, to **native** speakers of English
    ___Talking face-to-face, online or in person, to **nonnative** speakers who do NOT speak Arabic
    ___Talking mask-to-mask, online or in person, to **nativ**e speakers of English
    ___Talking mask-to-mask, online or in person, to **nonnative** speakers who do NOT speak Arabic
    ___Talking to **native** speakers of English on the telephone (Audio-only)
    ___Talking on the telephone (Audio-only) to **nonnative** speakers who do NOT speak Arabic

___Listening to the radio/CD
___Attending, in person or online, face-to-face classes

Part (3) of the SAVC Questionnaire
Questions for Participants in all the Groups

Please circle the number that expresses your opinion.

6. I prefer using the telephone (Audio-only) when speaking to others in English.
   Strongly disagree   Strongly agree
   •   •   •   •   •   •   •   •   •

7. I prefer seeing the speaker's face when speaking to someone in English.
   Strongly disagree   Strongly agree
   •   •   •   •   •   •   •   •   •

8. In everyday face-to-face communication, it is easier to understand English when I can see **native** speakers' face.
   Strongly disagree   Strongly agree
   •   •   •   •   •   •   •   •   •

9. In everyday face-to-face communication, it is easier to understand English when I can see **native** speakers' gestures.
   Strongly disagree   Strongly agree
   •   •   •   •   •   •   •   •   •

10. In everyday mask-to-mask communication, it is easier to understand English when I can see **native** speakers' gestures.
    Strongly disagree   Strongly agree
    •   •   •   •   •   •   •   •   •

11. In everyday face-to-face communication, it is easier to understand English when I can see **nonnative** speakers' face.
    Strongly disagree   Strongly agree
    •   •   •   •   •   •   •   •   •

12. In everyday face-to-face communication, it is easier to understand English when I can see **nonnative** speakers' gestures.
    Strongly disagree   Strongly agree
    •   •   •   •   •   •   •   •   •

13. In everyday mask-to-mask communication, it is easier to understand English when I can see **nonnative** speakers' gestures.

    Strongly disagree   Strongly agree
    •   •   •   •   •   •   •   •   •

14. In everyday face-to-face communication in English, I pay attention to **native** speakers' lip movements.
    Strongly disagree   Strongly agree
    •   •   •   •   •   •   •   •   •

15. In everyday face-to-face communication in English, I pay attention to **native** speakers'

gestures.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

16. In everyday mask-to-mask communication in English, I pay attention to **native** speakers' gestures

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

17. In everyday face-to-face communication in English, I pay attention to **nonnative** speakers' lip movements.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

18. In everyday face-to-face communication in English, I pay attention to **nonnative** speakers' gestures.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

19. In everyday mask-to-mask communication in English, I pay attention to **nonnative** speakers' gestures

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

20. In everyday face-to-face communication in **Arabic**, I pay attention to speakers' lip movements.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

21. In everyday face-to-face communication in **Arabic**, I pay attention to speakers' gestures.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

22. In everyday mask-to-mask communication in **Arabic**, I pay attention to speakers' gestures.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

23. It is easier to understand English conversations on TV and other visual media than on the radio.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

24. I use gestures more frequently when I talk in English than when I talk in my native language.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

25. I think my friends, classmates and teachers understand my English speech better when I use gestures.

Strongly disagree   Strongly agree

•   •   •   •   •   •   •   •   •

An OPTIONAL open-ended question for all participants
AV-gesture-face condition:
Please write any comments you wish about the research. What part was the most difficult for you when listening to the lecture? What comments do you have about the speaker you listened to? Do you think seeing the face and/or gesture of the speaker helped increase your understanding of the lecture you listened to?
AV- face condition:
Please write any comments you wish about the research. What part was the most difficult for you when listening to the lecture? What comments do you have about the speaker you listened to? Do you think seeing the face of the speaker you listened to helped increase your understanding? Do you think you would have understood the lecture better if you had seen the speaker's gestures.
A-only:
Please write any comments you wish about the research. What part was the most difficult for you when listening to the lecture? What comments do you have about the speaker you listened to? Do you think you would have understood the lecture better if you had seen the speaker's face and/or gestures.

Interview questions for participants who agree to participate in a follow-up interview.
1. Please explain your responses to items (2-5). Explain the reason behind your preferences.
2. (a)Question for participants in the AV-gesture-face condition:
   Do you think seeing the face and gestures of the speaker you listened to helped you understand the lecture? If yes, please explain why you think they were helpful?
   (b)Questions for participants in the AV-face condition:
     b.1. Did the face of the speaker you listened to help you understand the lecture? If yes, please explain why you think they were helpful?
     b.2. Do you think seeing the speaker's gestures would have helped you understand the lecture? please explain why you think they would have helped?
   (c) Question for participants in the A-only condition:
   Do you think seeing the face and gestures of the speaker you listened to would have helped you understand the lecture? If yes, please explain why you think they would have helped?
3. Do you have difficulty understanding nonnative speakers? Please explain.
4. With your previous experiences in mind, what have you done to enhance your ability to understand speakers with a strong accent?
5. Have you in the past preferred to communicate with a native speaker of English rather than a nonnative speaker? Why?
6. Have you in the past preferred to have an instructor or work with a classmate who is a native speaker of English rather than a nonnative speaker? Why?
7. Do you think that your attention to nonnative speakers' gestures and lip movements depends on the strength of their accent? How, please explain.

REFERENCES

REFERENCES

Abercrombie, D., (1967). *Elements of general phonology*. Chicago, IL: Aldine Publishing Co.

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%2F0033688212473270

Abrahamsson, N., & Hyltenstam, K. (2009). Age of onset and nativelikeness in a second language: Listener perception versus linguistic scrutiny. *Language Learning*, 59(2), 249–306. https://doi.org/10.1111/j.1467-9922.2009.00507.x

Alibali, M. W. (2009). Gesture in spatial cognition: Expressing, communicating, and thinking about spatial information. *Spatial Cognition and Computation*, 5, (4), 307-331. https://doi.org/10.1207/s15427633scc0504_2

Alibali, M. W., Heath, D. C., & Myers, H. J. (2001). Effects of visibility between speaker and listener on gesture production: Some gestures are meant to be seen. *Journal of Memory and Language, 44*, 169–188. https://doi.org/10.1006/jmla.2000.2752

Anderson-Hsieh, J., Johnson, R. & Koehler, K. (1992). The relationship between native speaker judgements of nonnative pronunciation and deviance in segmentals, prosody, and syllable structure. *Language Learning*, 42 (4), 529-555. https://doi.org/10.1111/j.1467-1770.1992.tb01043.x

Anderson-Hsieh, J., & Koehler, K. (1988). The effect of foreign accent and speaking rate on native speaker comprehension. *Language Learning*, 38(4), 561-613. https://doi.org/10.1111/j.1467-1770.1988.tb00167.x

Banks, B., Gowen, E., Munro, K. J., & Adank, P. (2015). Audiovisual cues benefit recognition of accented speech in noise but not perceptual adaptation. *Frontiers in Human Neuroscience*, *9*. 1-13. https://doi.org/10.3389/fnhum.2015.00422

Barros, P. C. M. D. (2010). *"It's easier to understand": The effect of a speaker's accent, visual cues, and background knowledge on listening comprehension*. (Master's thesis, Kansas State University). https://pdfs.semanticscholar.org/9929/3a678c4998204008c0dba2b6c4263bd09ba8.pdf?_ga=2.183278816.797735995.1563064802-1724364528.1563064802

Brown, S. (2014). Listening is the same as reading. *Listening Myths: Applying Second Language Research to Classroom Teaching* (pp. 1-16*)*. Ann Arbor, MI: The University of Michigan Press. http://ebookcentral.proquest.com/lib/michstate-ebooks/detail.action?docID=3570459

Busa, M. G. (2015). Teaching learners to communicate effectively in the L2: Integrating body language in the students' syllabus. *Lingue Linguaggi*, 15, 83-98. doi:10.1285/i22390359v15p83

Canagarajah, S. (2006). Changing communicative needs, revised assessment objectives: Testing English as an international language. *Language Assessment Quarterly*, 3(3), 229-242. https://doi.org/10.1207/s15434311laq0303_1

Cao, N. & Chen, G. (2017). The role of gesture in second language learning and teaching. *American Journal of Applied Sciences*, 14 (12), 1070-1074. https://escholarship.org/uc/item/65t0v6xc

Cobb, T. (2008). VocabProfile. Accessed 20 January 2020 at http://www.lextutor.ca/vp/.

Crystal, D. (2003). *The Cambridge encyclopedia of the English language* (2nd ed.). Cambridge, UK: Cambridge University Press.

Dalton-Puffer, C., Kaltenboec, G., Smit, U. (1997). Learner attitudes and L2 pronunciation in Austria. *World Englishes*, 16(1), 115-128. https://doi.org/10.1111/1467-971X.00052

Derwing, T. & Munro, M. (2005). Second language accent and pronunciation teaching: A research-based approach. *TESOL Quarterly*, 39(3), 379-397. https://doi.org/10.2307/3588486

Derwing, T. M., & Munro, M. J. (2009). Putting accent in its place: Rethinking obstacles to communication. *Language Teaching*, *42*(4), 476-490. https://doi.org/10.1017/S026144480800551X

Derwing, T. M., & Munro, M. J. (2015). *Pronunciation fundamentals: Evidence-based perspectives for L2 teaching and research*. Philadelphia, PA: John Benjamins.

Edwards, J. H, Zampini, M. L., & Cunningham, C. (2018). The accentedness, comprehensibility, and intelligibility of Asian Englishes. *World Englishes*, 37(4*), 538-557.* https://doi.org/10.1111/weng.12344

Eisenstein, M., & Berkowitz, D. (1981). The effect of phonological variation on adult learner comprehension. *Studies in Second Language Acquisition*, *4*(1), 75-80. https://doi.org/10.1017/S0272263100004307

Feyereisen, P., & Havard, I. (1999). Mental imagery and production of hand gestures while speaking in younger and older adults. *Journal of Nonverbal Behavior*, 23, 154-171. https://doi.org/10.1023/A:1021487510204

Field, A. (2018). *Discovering statistics using IBM SPSS Statistics* (5th ed.). Thousand Oaks, CA: Sage.

Field, A. (2009). *Discovering statistics using SPSS* (3rd Ed.). London: SAGE publishing.

Field, J. (2005). Intelligibility and the listener: The role of lexical stress. *TESOL Quarterly*, 39(3), 399-423.

Flege, J., Munro, M. J., & MacKay, I.R.A(1995). Factors affecting degree of perceived foreign accent in a second language. *Journal of the Acoustical Society of America*, 97, 3125–3134. https://doi.org/10.1121/1.413041

Firth, A. & Wagner, J. (2007). On discourse, communication, and (some) fundamental concepts in SLA research. *The Modern Language Journal*, 91, 757-772. https://doi-org/10.1111/j.1540-4781.2007.00667.x

Gass, S. & Varonis, M. (1984). The effect of familiarity on the comprehensibility of nonnative speech. *Language Learning*, 34(1), 65-89. https://doi.org/10.1111/j.1467-1770.1984.tb00996.x

Gill, M. (1994). Accent and Stereotypes: Their effect on perceptions of teachers and lecture comprehension. *Journal of Applied Communication Research*, 22, 348-361. https://doi.org/10.1080/00909889409365409

Graziano, M. & Gullberg, M. (2018). When speech stops, gesture stops: Evidence from developmental and crosslinguistic Comparisons. *Frontiers in Psychology*, 9, 1-17. http://dx.doi.org/10.3389/fpsyg.2018.00879

Gregersen, T., Olivares-Cuhat, G., & Strom, J. (2009). An examination of L1 and L2 gesture use: what role does proficiency play? *The Modern Language Journal*, 93(2), 195-208. https://doi-org/10.1111/j.1540-4781.2009.00856.x

Gullberg, M. (2006). Some reasons for studying gesture and second language acquisition (Hommage à Adam Kendon). *IRAL*, 44, 103-124. https://doi.org/10.1515/IRAL.2006.004

Hardison, D. M. (2014). Phonological literacy in L2 learning and teacher training. In J. Levis & A. Moyer (Eds.), *Social dynamics in second language accent* (pp. 195-218). Berlin: de Grruyter Mouton.

Hardison, D. M. (2018). Visualizing the acoustic and gestural beats of emphasis in multimodal discourse: Theoretical and pedagogical implications. *Journal of Second Language Pronunciation*, 4(2), 232-259. https://doi.org/10.1075/jslp.17006.har

Hardison, D. M., & Inceoglu, S. (2021). *L1 and L2 auditory-visual speech perception: Using eye tracking to investigate effects of task difficulty*. Manuscript in preparation. Department of Linguistics & Languages, Michigan State University.

Hirata, Y., Kelly, S. D., Huang, J., & Manansala, M. (2014). Effects of hand gestures on auditory learning of second-language vowel length contrasts. *Journal of Speech, Language, and Hearing Research*¸ 57(6), 2090-2101. http://dx.doi.org/10.1044/2014_JSLHR-S-14-0049

Hirata, Y., & Kelly, S. D. (2010). Effects of lips and hands on auditory learning of second-language speech sounds. *Journal of Speech, Language, and Hearing Research*, 53(2), 298-310. http://dx.doi.org/10.1044/1092-4388(2009/08-0243)

Irwin, A., Pilling, M., & Thomas, S. (2011). An analysis of British regional accent and contextual cues effects on speech reading performance. *Speech Communication*, 53(6), 807-817. https://doi.org/10.1016/j.specom.2011.01.010

Irwing, P. & Hughes, D. (2018). Test development. In P. Irwing, T. Booth, & D. J. Hughes (Eds.), *The Wiley handbook of psychometric testing: A multidisciplinary reference on survey, scale, and test development* (pp. 3-47*).* Hoboken, NJ: Wiley Blackwell.

Jaccard, J. (1998). *Interaction effects in factorial analysis of variance.* Thousand Oaks, CA: Sage Publications.

Janse, E. & Adank, P. (2012). Predicting foreign-accent adaptation in older adults. *The Quarterly Journal of Experimental Psychology*, 65(8), 1563-1585. https://doi.org/10.1080%2F17470218.2012.658822

Julian, F. (1987). An overview of nonverbal gender differences. *Tennessee Communication Association Journal, 13(2), 5-8.*

Kendon, A. (1972). Some relationships between body motion and speech: An analysis of an example. In A. Siegman & B. Poope (Eds.), *Studies in dyadic communication* (pp. 177-210). New York, NY: Pergamon Press.

Kendon, A. (1987). Speaking and signing simultaneously in Walpiri sign language users. *Multilingua*, 6, 25-28.

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. doi:10.3138/CMLR.64.3.459

Kida, T. (2008). Does gesture aid discourse comprehension in the L2? In S. G. McCafferty & G. Stam (Eds.), *Gesture: Second language acquisition and classroom research* (pp. 131-156). New York, NY: Routledge.

Kellerman, S. (1992). 'I see what you mean': The role of kinesic behaviour in listening and implications for foreign and second language learning. *Applied Linguistics*, 13(3), 239-258.

Knight, D. (2011). *Multimodality and active listenership: A corpus approac*h. New York, NY: Continuum International Publishing Group.

Lander, K. & Capek, C. (2013). Investigating the impact of lip visibility and talking style on speechreading performance. *Speech Communication*, 55(5), 600-605. https://doi.org/10.1016/j.specom.2013.01.003

Lansing, C. R., & McConkie, G. W. (2003). Word identification and eye fixation locations in visual and visual-plus-auditory presentations of spoken sentences. *Perception & Psychophysics, 65*(4), 536-552. https://doi-org/10.3758/BF03194581

Lazaraton, A. (2004). Gesture and speech in the vocabulary explanations of one ESL teacher: A Microanalytic Inquiry. *Language Learning*, 54(1), 79-117. https://doi.org/10.1111/j.1467-9922.2004.00249.x

Lippi-Green, R. (2012). English with an accent: Language, ideology, and discrimination in the United States (2nd ed.). London, UK: Routledge.

Lix, L. M., Keselman, J. C., & Keselman, H. J. (1996). Consequences of assumption violations revisited: A quantitative review of alternatives to the one-way analysis of variance *F test*. *Review of Educational Research,* 66, 579-619. https://doi-org/10.2307/1170654

Lott B. (1981) A feminist critique of androgyny: Toward the elimination of gender attributions for learned behavior. In: Mayo C., Henley N.M. (Eds.), *Gender and nonverbal behavior* (pp. 171-180). New York, NY: Springer.

Major, R. C., Fitzmaurice, S. F., Bunta, F., & Balasubramanian, C. (2002). The effects of nonnative accents on listening comprehension: Implications for ESL assessment. *TESOL Quarterly*, 36(2), 173-190. https://doi.org/10.2307/3588329

Major, R. C., Fitzmaurice, S. F., Bunta F, & Balasubramaniam, C. (2005). Testing the effects of regional, ethnic, and international dialects of English on listening comprehension. *Language Learning*, 55(1): 37–69. https://doi.org/10.1111/j.0023-8333.2005.00289.x

Massaro, D., Cohen, M., & Gesi, A. T. (1993). Long-term training, transfer, and retention in learning to lipread. *Perception and Psychology*, 53, 549-562. https://doi.org/10.3758/BF03205203

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, 953-978. https://doi.org/10.1080/01690965.2012.705006

McNeill, D. (1992). Hand and mind: What gestures reveal about thought. Chicago, IL: University of Chicago Press.

McNeill, D. (2006). Gesture and communication. *In the encyclopedia of language and linguistics* (2nd edition) (pp. 58-66). Amsterdam: Elsevier.

Medgyes, P. (2001). When the teacher is a non-native speaker. Teaching pronunciation, 429-442.

Moussu, L. (2010). Influence of teacher-contact time and other variables on ESL students' attitudes towards native-and nonnative-English-speaking teachers. *TESOL Quarterly*, 44(4), 746-768. https://doi.org/10.5054/tq.2010.235997

Munro, M. J. & Derwing, T. M. (2002). Foreign accent, comprehensibility, and intelligibility in the speech of second language learners. *Language Learning*, 49, 285-310. https://doi.org/10.1111/j.1467-1770.1995.tb00963.x

Nesdale, D. & Rooney, R. (1996). Evaluations and stereotyping of accented speakers by pre-adolescent children. *Journal of Language and Social Psychology*, 15, 133-155. https://doi.org/10.1177%2F0261927X960152002

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill.

Ockey, G. J., & French, R. (2014). From one to multiple accents on a test of L2 listening comprehension. *Applied Linguistics*, *37*(5), 693–715. https://doi.org/10.1093/applin/amu060

Ockey, G., Papageorgiou, S., & French, R. (2016). Effects of strength of accent on an L2 interactive lecture listening comprehension test. *International Journal of Listening*, 30, 84-98. https://doi.org/10.1080/10904018.2015.1056877

Pennington, M. C., Chun, D. M., & Hardison, D. M. (2002). VISI-PRO video-based pronunciation training system. Luton, UK: University of Luton, Revenue Investment Fund Project.

Piske, T., MacKay, I. R. A., & Flege, J. E. (2001). Factors affecting degree of foreign accent in an L2: A review. *Journal of Phonetics*, *29*(2), 191-215. https://doi.org/10.1006/jpho.2001.0134

Pett, M. A. (1997). Nonparametric statistics for health care research: Statistics for small samples and unusual distributions. Thousand Oaks, CA: Sage

Plonsky, L. & Oswald, F. (2014). How big is "big"? Interpreting effect sizes in L2 research. *Language Learning*, 64(4), 1-35. https://doi.org/10.1111/lang.12079

Rosenblum, L. (2010). See what I'm saying: The extraordinary powers of our five senses. New York, NY: W.W. Norton & Co.

Saito, K. (2007). The influence of explicit phonetic instruction on pronunciation teaching in EFL settings: The case of English vowels and Japanese learners of English. *The Linguistics Journal*, 3(2), 16-40.

Saito, K., Tran, M., Suzukida, Y., Sun, H., Magne, V., Ilkan, M. (2019). How do second language listeners perceive the comprehensibility of foreign-accented speech? *Studies in Second Language Acquisition*, 41, 1133-1149. https://doi.org/10.1017/S0272263119000226

Shams, L. & Seitz A.R. (2008). Benefits of multisensory learning. *Trends in Cognitive Sciences,* 12(11), 411- 417. https://doi.org/10.1016/j.tics.2008.07.006

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

The assumption of homogeneity of Variance (2021, January 29). Retrieved from https://www.statisticssolutions.com/the-assumption-of-homogeneity-of-variance/

Suarez, R. (2007). The effects of foreign accent and language on reaction time and accuracy in an air traffic control task. (Master's thesis, Embry-Riddle Aeronautical University-Daytona Beach). https://commons.erau.edu/cgi/viewcontent.cgi?article=1278&context=db-theses

Sueyoshi, A. & Hardison, D. (2005). The role of gestures and facial cues in second language listening comprehension. *Language Learning*, 55(4), 66-699. https://doi.org/10.1111/j.0023-8333.2005.00320.x

Trafton,J.G. , Trickett, S. B., Stitzlein, C. A., Saner, L., Schunn, C. D, & Kirschenbaum, S. S. (2009). The relationship between spatial transformations and iconic gestures. *Spatial Cognition and Computation*, 5(4), 307-331. https://doi.org/10.1207/s15427633scc0601_1

von Raffler-Engel, W. (1980). Kinesics and paralinguistics: A neglected factor in second language research. *Canadian Modern Language Review*, 36(2), 225-237.

Williams, J. (1992). Planning, discourse marking, and the comprehensibility of international teaching assistants. *Tesol Quarterly*, 26(4), 693-711. https://doi.org/10.2307/3586869

Wang, H. & van Heuven, V. J. (2015). The interlanguage speech intelligibility benefit as bias toward native-language phonology. *i-perception*, 6(6), 1-13. https://doi.org/10.1177/2041669515613661

Winke, P. (2018). Module testing and outcomes assessment: Receptive skills. Unpublished manuscript.

Yi, H.G., Phelps, J. E. B., Smiljanic, R., & Chandrasekaran, B. (2013). Reduced efficiency of audiovisual integration for nonnative speech. *The Journal of the Acoustical Society of America*, *134*(5), 387-393. https://doi.org/10.1121/1.4822320

Zheng, Y., & Samuel, A. G. (2019). How much do visual cues help listeners in perceiving accented speech? *Applied Psycholinguistics*, *40*(1), 93-109. doi:10.1017/S0142716418000462