THE ROLE OF LISTENER AFFILIATED SOCIO-CULTURAL FACTORS IN PERCEIVING NATIVE ACCENTED VERSUS FOREIGN ACCENTED SPEECH

DISSERTATION

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ABSTRACT

The present study is a correlational study to determine if listeners’ perception of (1) accentedness and (2) comprehensibility can be predicted from listener affiliated socio-cultural factors (referred to as listener factors). The listener participants were 60 Native Speakers of American English (referred to as Native Listeners, NL) who were undergraduate and graduate students enrolled in a large mid-western University. The listeners were divided into (1) the audio group who listened to four audio clips and (2) the video group who watched four video clips recorded from the same speakers. The speakers consisted of three Non-Native Speakers (NNS) with three ordinal categories of accents (e.g., Moderate Accent, Low Accent, Foreign Non Accent), and one NS with Native Non Accent. The audio group did not receive each speaker’s Socio-Cultural Information (SCI) while the video group received SCI of each speaker. With respect to the between-group differences, the video group perceived the speakers’ accentedness and nativeness more positively than the audio group. However, the video group perceived the speakers’ comprehensibility more negatively compared to the audio group. The length of time in the program made the largest contribution to predict speakers’ degree of accentedness. Listeners’ frequency of interaction with accented speakers made the largest contribution to predict listeners’ perception of comprehensibility. Among listener factors, SCI of the speakers, interaction, and exposure primarily contributed to predict whether the speakers sounded like native or non-native. From the listeners’ point of view, the findings showed that SCI and the disclosure of speakers’ identity were used positively in the listeners’ perception of accentedness and nativeness. The findings of the study challenge the NNS principle in the sense that nativeness is not equal to non-accentedness. This study contributes to empowering NNS identities and helps them to be involved in speech communities as legitimate participants. Even though this study presents some implications and key issues concerning how to use listener factors and why the NS-NNS dichotomy and the NS principle should be challenged, further research is suggested to find factors of facilitating NS-NNS communication in order to help educate NS toward embracing the sociocultural differences of NNS.
Dedicated to my parents:
Jae Hak Cheong and Mi Ja Cho, who encouraged me to
be passionate and to dream of my future,
and
Jean Kun Oh, who devoted his life
to me and to pursing and maintaining this dream
I remember every detail of the day my father gave me English language learning materials. What was laid out before my eyes were audio tapes recorded by native speakers of American English, English picture books, and flash cards. My father put his plan into action. I have a clear picture of how he had planned his children to learn a new language and culture. I played and replayed the song in the tape recorder “London Bridge is falling down”. Learning a foreign language, especially Chinese (I don’t want to penalize this language), was difficult for me to acquire the complicated shapes and difficult lines of the characters. However, what was pulling my attention was the rhythmic sounds and intonation of English from behind the small speaker. I didn’t need any direction to imitate and enjoy the sound in order to understand what was going on in the tape recorder. The first time that I began learning English was listening and sounding out the paragraph describing the exotic world with a new language, English. Listening to the sounds and rhythm of the English Alphabet continued for a couple of years until my father left us accidentally when I was twelve. Based on the memory of my father, the word “Father” and “English” made my heart ache with a deep sorrow, sober, link, and integrity that came whenever I thought about him and the first time of learning English.

Although my father left me when I was young, I have met many people who have shown me motherly and fatherly love. The very first person is Dr. Keiko K. Samimy, my academic adviser, who became a role model in my life. Her motherly love and deep affection toward her advisees were like a water fountain that never dries up. Whenever I felt hardships, struggles, or depression, she always took care of me like a real mother. She provided academic motives when I was a master student, helped me pursue this dissertation study, and constructed my identity as a future scholar. She showed me exactly how to balance guidance and freedom as an academic and psychological adviser. She encouraged me to keep continuing the long journey of Ph. D. and had a big impact on constructing my passion to develop, improve, and make things fruitful. Although I
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VITA

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**FIELDS OF STUDY**

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CHAPTER 1

INTRODUCTION

“Social and economic globalization has necessitated the use of an international means of communication in the world. English has become the language of international communication. It was estimated as early as 1985 that the number of people who used English worldwide either as their native or non-native language was one and a half billion” (Alptekin, 2002, p. 60).

For 30 years, the history of pronunciation research and pedagogy in the acquisition of English as a Foreign or Second Language (L2) has been a study in extremes (Levis, 2005). The principles of English Pronunciation Instruction as L2 (EPI) aimed to identify some aspects of achieving “nativeness” or “intelligibility” (Field, 2005; Levis, 2005) and teaching these two qualities in L2 speech. As Munro and Derwing (1995) explained that nativeness, overtly as well as covertly, represents the aspects of how the accents of Foreign-Born English Speakers (FBES) are the same or differ from the characteristics of English, commonly spoken in the native language (L1) community. Putting it another way, “the lack of nativeness” is identified with “foreign accentedness” or “foreign accented speech” (hereafter: refer to as accentedness or accented speech) indicating “the degree to which learners’ speech is free of segmental and suprasegmental
features characteristic of their native language” (Gatbonton, Trofimovich, & Magid, 2005, p. 492). This approach is called a nativeness principle or a native speaker norm and focuses on acquiring biologically conditioned factors such as native-like pronunciation, accents (or accentedness), prosody, and phonemic segments, (Field, 2005; Levis, 2005). In conjunction with the nativeness principle, most recently published pronunciation materials display native speakers of English as the optimum models for pronunciation learning (Levis, 2005).

In contrast, intelligibility implies that the utterances of L2 learners need to be understandable (Levis, 2005), and the most desirable outcome of pronunciation instruction is represented by promoted intelligibility (Derwing & Munro, 2005). In other words, intelligibility signifies the basic requirement for which a listener actually comprehends an utterance. This ability is estimated by the judges who are able to apprehend and transcribe the actual words of speech (Field, 2005). From the same point of view, the degree and overall rating of ease to understand a given speaker or the perception of the level of difficulty encountered while trying to understand the speech from the view point of listeners is defined as comprehensibility (Field, 2005; Derwing & Munro, 1997).

Smith (1992, p.76) defined “intelligibility” and “comprehensibility” in order to avoid the confusion of the use of these terms. He defined that intelligibility indicates the capacity “to recognize words/utterances”, and comprehensibility defines the ability to “seize the meaning of words/utterances (locutionary force)”. In particular, Abercrombie (1949) stated, “language learners need no more than a comfortably intelligible
pronunciation” (p. 120). As a result, intelligibility has been viewed as an appropriate goal for L2 pronunciation instruction and a primary quality necessary for L2 learners to achieve comprehensibility of the L2 speech (Field, 2005). However, numerous linguistic studies (Nelson, 1982; Matsuura et al., 1999) used the terms “intelligibility” and “comprehensibility” alternatively, and the American Heritage Dictionary of the English Language treated these terms as synonyms (Picket et al., 2000). Therefore, this study addresses the term “intelligibility” as a fundamental factor in facilitating the comprehensibility of speech.

With respect to definitions, individuals from inner circle countries use English as the primary language (Kachru, 1992), and they receive education through the medium of English. They are referred to as Native Speakers (NS) of English. Because English is their first language, NS are commonly believed to be proficient and accomplished users of English (Medgyes, 1992). In conjunction with such a belief, in terms of language production, NS have represented the norms, the standard, and models to compare all other varieties of English (Smith & Rafiqzad, 1979). In accordance with these NS norms, no one questions the intelligibility and comprehensibility of people who: (1) acquire English as the L1, (2) are involved in the continued use of English in their daily life, (3) maintain a high level of competence in English, and (4) share “native intuition and group identity” (McKay, 2002, p. 29). The net result of such a definition has produced a binary classification between NS and Non-Native Speakers (NNS).

NNS are characterized as people who have linguistic and cultural deficit. They are not born in the inner circle English speaking countries where English dominates everyday
life (Brutt-Griffler & Samimy, 1999, 2001; Higgins, 2003; Medgyes, 1992; Nayar, 1994, 1997; Samimy & Brutt-Griffler, 1999) and do not receive educational training from a mainstream English-speaking environment. The countries of NNS are addressed as outer-circle or expanding circle countries (Kachru, 1992). They accept multiple varieties of English because English is taught and learned as a means of access to other parts of the world and it enables them to increase international opportunities (Matsuda, 2003). Matsuda (2003) claimed that the awareness of the varieties of English places an equal value on the pedagogical approaches for NNS and the acceptance of World Englishes (WE) or English as an international language (EIL). A simple classification between NS versus NNS places a burden on L2 learners to obtain nativeness or the recognized intelligibility factors (e.g., syntactic and lexical knowledge and contextual transparency) to achieve full success in L2 communication (Field, 2005). Therefore, from the viewpoint of inner circle countries, NNS are also recognized as FBES. In these circumstances, NNS (hereafter: identified with FBES) are perceived to exhibit the aspects of foreign–accented speech (Derwing & Munro, 1997) and are likely to be judged relative to the intelligibility or comprehensibility of their communication as defined by NS norms of acceptability.

Jenkins (2000, 2002) focused on a wide range of differences in terms of applying intelligibility across various contexts of communication. In contrast to the NS norms, she asserted that EIL learners need not adapt to the NS norms but should adjust their speech to primarily communicate with NNS. Her approach was derived from EIL and introduced the concept of English as a Lingua Franca Core (LFC). This concept supports WE or the EIL movement while recognizing more than 300 million NNS who speak English more
with each other than with NS (Dauer, 2005). She claimed that the communications between NNS-NNS do not need native-like accent and do not need to identify with NS. The most important criterion for mutual intelligibility and comprehensibility in an EIL environment is to ensure that the interaction between NS-NNS or NNS-NNS is understandable (Jenkins, 2000, 2002). In contrast, within the context of English as second language (ESL) environments, she claimed that ESL learners need to consider other factors to help them be understandable to a wide range of communication participants and interlocutors. In general, her claims revealed that teaching intelligibility has been positioned as the dominant goal of pronunciation teaching consistent with the nativeness principles (Levis, 2005).

Many researchers (Esling & Wong, 1983; Flege, 1984; Munro, Derwing, & Burgess, 2003) have emphasized the significance of native-like pronunciation or nativeness because pronunciation issues (hereafter: identified with accent) of speakers may result in a breakdown of communication or a loss of intelligibility (Jenkins, 2000). Especially, in the communication between NNS and NS (hereafter: identified with Native Listeners, NL), Derwing and Munro (2005) found that the sensitivity of NL moved from their personal accents to the varieties of different accents. According to this study, the perceptions of the varieties of accents had an influence on the comprehension of the various utterances made by NNS. Flege (1984) demonstrated that NL used identifying clues of nativeness when hearing NNS speech. For example; words, phrases, individual segments, and segment portions of approximately 30 milliseconds in length were utilized as identifying clues. Esling and Wong (1983) examined that NL used multiple cues (e.g.,
prosodic factors and segmental variations), voice quality, or speech characteristics generally noted in pronunciation texts, and they could recognize accentedness of NNS speech. Moreover, NL were able to detect accented speech after hearing a single word, even presented backward (Munro, Derwing, & Burgess, 2003).

In sum, accent is one of the factors most frequently used to measure the intelligibility of L2 speakers and the success of communication between interlocutors. Many scholars (Bickerton, 1981; Derwing & Munro, 2005; Johnson, 1992; Johnson & Newport, 1989; Lenneberg, 1967) agreed that accent is involved in maturational constraints. From the perspectives of these scholars, FBES who acquired L2 after early childhood are relatively late starters to perform native patterns of pronunciation. In brief, they claimed that achieving a native-like pronunciation or competence is less likely after certain ages (Bickerton, 1981; Johnson & Newport, 1989; Lenneberg, 1967). Thus, accented speech or what is perceived to be poor pronunciation has resulted in the creation of negative perceptions of L2 speakers (Jenkins, 2000).

On the basis of these studies, pronunciation/accent is considered as a contributing factor to the success of creating intelligible and comprehensible speech. If so, what is the role of listener factors (especially NL) that are involved in the speech events for the perception of native or non-native accents? Are they responsible for establishing the norms of comprehensible speech of NNS? In the same way, can the professionals postulate that other factors are related to establishing the norms of intelligible and comprehensible speech of NNS? In brief, what factors contribute to the listeners’ perception of accent? To what extent do the linguistic or non-linguistic factors of NNS
help them to be perceived as comprehensible? Because these issues have been less explored in EPI, this study addresses these questions as problems and attempts to fill in these gaps.

**Problem Statement**

As the gaps between accent and native listener perception exist, this section specifically presents three problems that this study intends to address. The problems consist of the following: (1) the competing principles of essential factors that contribute to accentedness versus comprehensibility, (2) the relationship between the perception of foreign accents and listener affiliated factors, and (3) the necessity of tolerance of NNS speech due to the growing population of teaching assistants in American academic settings.

**The Competing Principles of Essential Factors that Contribute to Accentedness versus Comprehensibility**

During the past twenty years, many pronunciation specialists have studied the features of natural utterances that contribute to the intelligibility of speech of FBES (Field, 2005). By proposing that certain problematic sounds (e.g., diphthongs and voiced consonants) affect pronunciation and break down the communication, Gimson (1978) initiated a simplified phonological system and insisted that this unique model should be taught to L2 learners. Furthermore, Jenner (1989) proposed that if a common core of
phonological features is taught systematically, this would contribute to the creation of a framework for intelligible speech without regard to the degree of accentedness of L2 speakers. In short, as Field (2005) stated, since the 1970s, many English teachers worldwide came to realize that traditional approaches to achieving native-like pronunciation were time-consuming and unrealistic. Compared to other features, he insisted that obtaining intelligibility has been emphasized as a criterion that helps L2 learners as well as teachers to achieve overall communicative success.

By doing so, the superiority of teaching suprasegmentals rather than segmentals has been valued because these features have been constantly believed to promote intelligibility of L2 speech (Avery & Ehrlich, 1992; Levis, 2005; Morley, 1991; Smith & Rafiqzad, 1979). According to Field (2005), the role of phonemes (segmentals) has been perceived to be relatively less significant than that of prosody (suprasegmentals including intonation, word stress, pitch, and rhythm). Unfortunately, however, Pennington and Ellis (2000) exhibited that some suprasegmental features such as the intonation of sentence tags and pitch movement marking boundaries were not learnable whereas other features such as elements of intonation and nuclear stress were obtainable.

Similarly, from the perspective of EIL, Jenkins (2000) and Levis (1999) argued that the evidence of whether suprasegmentals prohibit intelligibility of communication has not been clearly documented. In particular, Jenkins (2000) found that “words stress rules are so complex as to be unteachable” (Jenkins, 2000, p. 120) and these features rarely hinder intelligibility of the speakers. She also argued that except for the nuclear stress, most aspects of intonation or other weak forms such as stress-timing, word stress,
pitch movement, reductions, and assimilation of connected speech were not teachable or learnable. Much of the literature on L2 speech has focused on speech production and pronunciation but these findings have not been perceived as practical or applicable to actual classroom settings (Derwing & Munro, 2005).

Current intonational research is disconnected to modern language teaching and is scarcely reflected in pronunciation teaching materials (Levis, 1999). Such a problem has led to the production of a large amount of L2 speech literature that is limitedly concerned with biologically constrained factors, and this reduces hopes for late starters of L2 learning. In conjunction with the neurological factors, many scholars (Bickerton, 1981; Brown, 1994; Johnson, 1992; Johnson & Newport, 1989; Krashen, 1973, 1982; Lenneberg, 1967; Lightbown & Spada, 2000; Oyama, 1976; Penfield & Roberts, 1959; Patkowski, 1980, 1994) observed that children possess a biologically optimal age called “the critical period” (CP) to learn a language. This biologically conditioned period helps younger learners or early starters be superior to adults or late starters’ brain flexibility and is referred to as a Critical Period Hypothesis (CPH, Penfield & Roberts, 1959).

With respect to the CPH and accentedness, the debate still remains on the varieties of factors that are essential for (1) the listeners to perceive an intelligible speech and (2) the speakers to achieve intelligibility rather than native-like pronunciation and accent. Much literature has focused on the interrelation between intelligible or comprehensible L2 speech and biologically conditioned factors referred to as CP (Flege & Frieda, 1995; Levis, 2005; Moyer, 1999). According to these studies, the effects of age and maturational factors have been traditionally examined and have raised some issues on
EPI. In doing so, from the viewpoint of early starters, age has been perceived as the most significant factor to develop nativeness. As apposed to late starters, early starters have been likely to be perceived to command native-like accent because they begin to obtain a language at the early age. On the other hand, for late starters, age decreased the possibility to develop nativeness or emolliate accentedness.

In summary, these beliefs or myths, with respect to the impact of age, have influenced the claims that most people who learn a second language after early childhood or late starters are apt to exhibit non-native patterns of pronunciation (Bickerton, 1981; Derwing & Munro, 2005; Johnson, 1992; Johnson & Newport, 1989; Lenneberg, 1967). Many pronunciation specialists doubted whether ESL learners, who passed a certain age, would achieve ultimate attainment in L2 pronunciation (Derwing & Munro, 2005; Flege, 1987a; Flege & Munro, 1994; Flege, Munro, & MacKay, 1995; Scovel, 1981; Walsh & Diller, 1981; Wode, 1989, 1992). Unfortunately, however, researchers have found that late starters of L2 who obtained native-like speech patterns were limited to a very small number of those with special aptitude (Ioup, Boustagi, El Tigi, & Moselle, 1994) and higher motivation (Moyer, 2004). Few documents explored to what extent the age-related factors and the NNS accents are intertwined within the socio-cultural context where communication occurs. Therefore, the following section addresses the problem in conjunction with insufficient studies regarding how socio-cultural aspects affect constructing listeners’ identity in the perception of foreign accents. This section purports to examine the gap between the role of listeners in communication events and perception of NNS accent.
The Perception of Foreign Accents and Listener Affiliated Factors

Pajares (1992) stated that “beliefs are far more influential than knowledge in determining how individuals organize and define tasks and problems and are also stronger predictors of behavior” (p. 311). He claimed that the roles of beliefs is instrumental and drives people to define tasks and select the cognitive as well as affective mechanisms with which to recognize, perceive, interpret, plan, make decisions, and react, etc. From the socio-cultural point of view, beliefs are intertwined with identity because the “relationship between beliefs and actions is interactive” (Richardson, 1996, p. 104). In general, beliefs have an influence on the recognition of phenomena because this process indicates “knowledge or feeling that someone or something present has been encountered before” (Merriam Webster, 2007). Beliefs also have an impact on the perceptual process because perception is associated with “quick, acute, and intuitive cognition or physical sensation interpreted in the light of experience” (Merriam Webster, 2007). In essence, beliefs and perceptions are socio-psychological factors that are intertwined with the socio-cultural process of identity construction, decision-making process, attitudes, and behavior about certain phenomena. Similarly, for this study, listener affiliated socio-cultural factors are defined using various socio-cultural aspects (e.g., recognition, perceptions, cultures, beliefs, attitudes, and familiarities with the varieties of utterances) that are brought by listeners into the acts of speech.

Listener affiliated socio-cultural factors are constructed by the reflexive relationship between the speakers and the listeners in language events. The constructing process of listener affiliated factors is observed by exploring the role of listeners in
communication events. For example, Bakhtin (1986) insisted that the speech event is called an, “inherently responsive process” because listeners (hearers) become speakers. According to him, listeners are engaged in an actively responsive understanding of what is heard. Hearing or listening is a social process that allows listeners to construct perceptions, conceptualizations, and beliefs. Accordingly, the understanding of the listener can be directly realized or represented in action. In short, what is heard from the speaker is transferred to the listener, and the hearer as a communication participant ultimately shares the identity, cultural practices, and intercontextual ties with the speaker. Bakhtin (1986) clearly described the role of listeners in speech events as follows:

“Sooner or later what is heard and actively understood will find its response in the subsequent speech or behavior of the listener. In most cases, genres of complex cultural communication are intended precisely for this kind of actively responsive understanding with delayed action” (pp. 59-60).

Similarly, Vygotsky (1978, 1987) proposed that learning or meaning-making process in language events is mediated on the interpsychological plane between an individual and other people and the cultural artifacts. The appropriation and knowledge transformation from speakers to listeners in speech events is transferred by the intrapsychological decision-making process of the listeners. Bloome and Bailey (1992) also focused on the intertextual juxtapositions of language events in the wide varieties of conversational contexts. They argued that people who are engaged in a language event are involved in intertextual juxtapositions that are socially constructed and interactionally recognized by the participants. According to them, speakers and listeners who are
engaged in a language event should be acknowledged by the participants and obtain social significance within the event. The intertextual ties between speakers and listeners enable the listeners to bring the prior perceptions and construct new perceptions through the language events.

In summary, L2 pronunciation and production issues are related to prior knowledge, beliefs, perceptions of listeners, and socio-cultural representations that are constructed by meaning-making process of speech events. Numerous scholars (Bradlow, Pisoni, Akhahane-Yamada, & Tohkura, 1997; Gilbert, 1993) have noted that providing L2 learners with appropriate perceptual training tasks (e.g., discrimination and identification) can improve production, speech, and sensitiveness to suprasegmentals as well as segmentals of L2 learners. Unfortunately, however, problems emerge because little research or studies have explored various data sources that probe the interrelations between self-perception of language productions and changing perceptions of listeners in speech events. The extent to which the listener variables have an impact on the changing beliefs and perceptions as a result of obtaining socio-cultural information has been less documented. An important question worth considering is to what extent the listener affiliated socio-cultural process in line with speech events has been isolated from the interrelational studies on biological factors and others (Moyer, 1999). Such a situation can be an important issue in American academic settings because the number of NNS teaching professionals is increasing. Therefore, the following section can specifically discuss the problem occurred by insufficient understanding of listener factors in American academic settings.
The Necessity of Tolerance of NNS Speech due to the Growing Population of Teaching Assistants in American Academic Settings

The number of International Teaching Assistants (ITA) in American universities is increasing, and, hence, the need for cross-cultural communication between NNS ITA and NS students has become important issues in academic settings (Lippi-Green, 1997; Pickering, 2001). As the numbers of ITA grow, NS students have more opportunities to listen to the varieties of accented English. More specifically, in real academic settings, although ITA do not represent intelligibility problems, the prejudice of NL, who incorrectly assume that ITA lack intelligibility or comprehensibility simply because they are NNS, exists in real academic settings. With respect to the attributes that may potentially impact the perceptions of intelligibility of the speech of ITA, the interrelational factors that are aligned with NL and the attitudes toward NNS ITA (e.g., willingness to understand, tolerance, and positive attitudes, etc.) have been less explored.

From the same perspective, for the sake of satisfying the expectations of NS students, American universities have developed instruction programs that are designed to improve the English proficiency of ITA. However, few programs have focused on teaching them native-speaking discourse patterns (Pickering, 2001), and the problem between the expectations of NL and the non-native discourse patterns of ITA emerged. The limitations on this issue resulted in the ineffectiveness of delivering teaching material and establishing rapport with NS students. To make matters worse, subsequently, speech styles and ways to present the lectures of ITA have obfuscated the information structure and ended up characterizing their qualities as unsympathetic and uninvolved (Pickering,
Likewise, the gap between the speech styles of NNS and expectations of native-speaking discourse styles of NL have produced various problems in L2 pronunciation pedagogy and have generated unexpected outcomes. Therefore, the problems interplayed between the NL and ITA trigger the necessity to portray (1) the perspectives and beliefs of NL regarding accented speech of NNS and (2) the factors aligned with the perceptions of accentedness of NL.

While many studies on L2 pronunciation research have focused on the biologically constrained factors of L2 speakers, the research on listener affiliated socio-cultural/socio-psychological factors associated with understanding of L2 utterances have been isolated from the ones. If NL in American academic settings are informed of the varieties of the accents of ITA, tolerance of intelligibility and comprehensibility of foreign accented speech will be created. If ITA are informed of the perceptions of their accents from the viewpoint of NL, both interlocutors can heighten their understanding of each other and develop better communication in the classroom. Accordingly, the existing gap between NNS ITA and NL (and other listeners may be included) raises the necessity to observe the factors involved in perceiving accentedness and comprehensibility of NL.

For the sake of bridging the gap between NNS ITA and NL, this study predicts the variables or factors that contribute to measuring comprehensibility and accentedness of foreign accented speech. This study also aims to help communication between NNS-NL be efficient and successful. The objectives and research questions will substantiate why and how this study portrays the listener affiliated variables and assessing NNS accents and comprehensibility from the viewpoint of NL.
Objectives of the Study

The current study purports to predict the two dependent variables: perception of accentedness and comprehensibility of the native speakers of English (listeners or referred to as NL); on the basis of the two independent variables: degree of accentedness (hereafter: accentedness) and Socio-Cultural Information (SCI) of the non-native speakers of English (speakers or referred to as NNS). The belief underlying this study is that the listeners (especially NL) or listener factors may play a significant role in measuring accentedness and comprehensibility of utterances. As Derwing and Munro (2005) agreed, in the perception of accentedness or comprehensibility, the importance of the roles or tasks of listeners and listener factors are necessary to be examined. Therefore, this study attempts to predict the listeners’ perception of accentedness and comprehensibility of foreign accented speech.

The first main independent variable, accentedness, indicates “the degree to which the pronunciation of an utterance sounds different from an expected production pattern” (Munro, Derwing, & Morton, 2006, p.112). Munro and Derwing (1995, 1999) used the term heavily accented speech and non-accented speech. According to this study, heavily accented speech was perceived as much intelligible as non-accented speech. Based on Munro and Derwing’s concept, this study has adapted the concepts of Non-Accented (NA) speech. In particular, the degree to which the speakers’ utterances are free of suprasegmental and segmental characteristic of their native language (Gatbonton,
Trofimovich, & Magid, 2005, p. 492) resulted in dividing the concept of NA into (1) Native-Non-Accented (NNA) speech or Native Non Accent and (2) Foreign-Non-Accented (FNA) speech or Foreign Non Accent. In addition, the degree of accentedness that represents slightly explicit suprasegmental and segmental features characteristics were defined as Low-Accented (LA) speech or Low Accent and Moderately-Accented (MA) speech or Moderate Accent. These two levels were created as additional levels of foreign accented speech. These were defined as four levels of accentedness that were selected to predict the dependent variables concerning how the listeners respond according to these levels. If the responses were different, the factors that might have an influence on the results were examined.

The second main independent variable, that is, the SCI of the speakers signifies that the quality or quantity that actively contributes to the listeners’ perceptions of accented and comprehensible speech. For the two groups who have been randomly assigned native listeners (30-30), the levels (I & II) that provide the SCI of the speakers would explain or predict some factors that might have an impact on the two dependent variables. The two levels of the independent variable consist of the two types of input: audio (level I) and video (level II) input for each separate groups. The level I for the audio group revealed the socio-cultural information of the speakers and was referred to as Non-SCI or audio group. The level II provided by a video/a written description input was defined as the video group, and this input disclosed the SCI of the speakers. In short, while the audio group listened to tape-recorded voices, the video group listened to the voices and watched the ethnic background of the speakers and written document
disclosing the SCI of the speakers (e.g., educational experiences and language learning background). Based on this input, the dependent variables, whether or not the two groups respond identically or differently on scales of accents and comprehensibility, were examined. This study will be more meaningful and valuable to the study of L2 communication research because very few studies have investigated pronunciation from this perspective (Derwing & Munro, 2005).

The rival independent variables for this study were defined as listeners’ (1) major, (2) length of time in the program (length of time), (3) age, (4) sex, (5) experiences of being exposed to the foreign accented speech (exposure), and (6) interaction with a foreign accented speaker (interaction). The rival variables were selected by the review of related studies. For example, Alford and Strother (1990) found that the attitude of the listeners toward American regional accents differ based on sex. Cargile and Bradac (2001) claimed that the effect of information processing was substantially influenced by sex difference. With respect to the exposure variable, the exposure to foreign languages and cultures had an impact on their attitudes and perceptions of the accented speech (Anderson-Hsieh & Koehler, 1988; Gass & Varonis, 1984; Matsuura, Chiba, and Yamamoto, 1992). Familiarity with foreign accents was also a significant factor that increased intelligibility scores of the listeners (Derwing & Munro, 1997; Gass & Varonis, 1984), and this study used the term exposure to connote the meaning of familiarity. In Ryan (1983)’s study, native listeners used some social and personality cues (i.e., sex, age, and social class) in order to infer standard versus non-standard speech styles.
Furthermore, the degree to which the responses of the listeners differ from the types of input will portray listener affiliated socio-cultural factors. For example, in the acts of communication between NL-NNS, NL are placed in the position of listening to and understanding the speech. The listeners bring into this process various socio-cultural perceptions of the speakers on the basis of their own culture, beliefs, attitudes, and familiarity with the varieties of utterances. These factors may have an impact on the judgmental process of accentedness and comprehensibility of the speakers. In other words, NL are essential participants in acts of communication, and their processing load and perceptual recognition tasks while listening play an important role in judging whether the speech is mutually comprehensible (Field, 2005). NL were provided with two types of input and such treatments would have an impact on transforming or not transforming their existing perceptions. Therefore, the research participants that demonstrated different reactions based on the treatments would identify their own socio-cultural variables.

In order to observe the dependent variables “first” and predict how the independent variables function as significant predictors of these dependent variables, the a correlational design was constructed. This design is a quantitative paradigm that aims to predict the two dependent variables: the perception of (1) accents and (2) comprehensibility of the listeners based on the two independent variables: (1) the Socio-Cultural Information (SCI) and (2) the Degree of Accentedness (DA) of the speakers. The basic assumption of this study is that the two independent variables are predicting factors of the two dependent variables when the effects of rival independent variables are
removed. The following two research questions were formulated to conduct the current quantitative study.

**Research Questions**

The stated research objectives listed above include two sections of main research questions. For the first research question (#Q1), the main independent variable SCI was selected to predict a dependent variable: the listeners’ perception of accents. The levels of the main independent variable (SCI) consisted of Non-SCI and SCI (or Audio or Video) and this variable is treated as dichotomous nominal data. The six rival independent variables (major, length of time, age, sex, exposure, and interaction) were included to predict the two dependent variables.

The listeners’ perception of accentedness (dependent variable) was based upon DA (independent variable) that had four ordinal categories. The four ordinal categories were determined by a panel of experts’ inter-rater reliability assessment. Based on an interval scale of measurement, the obtained interval data was forced into falling into four ordinal categories and this process was called a blocking. For example, the numbers that earn between 5.00-5.99 were defined as Moderate-Accent, the numbers that fall between 6.00-6.99 were defined as Low-Accent, the numbers that fall between 7.00-7.99 were defined Foreign Non Accent, and the numbers that earn higher than 8.0 were defined as Native Non Accent. However, the listeners’ perception of accentedness data (dependent
variable) were raw scores obtained by an interval scale of measurement and data analysis process did not contain a blocking process.

The second research question (# Q2) was selected to predict the dependent variable: the listeners’ perception of comprehensibility. The listeners’ perception of comprehensibility was predicted by the two levels (dichotomous, nominal) of one main independent variable, SCI (Non-SCI and SCI) and six rival independent variables. The speakers’ comprehensibility variable had four ordinal categories such as: High-Comprehensible (HC), Intermediate-High-Comprehensible (IHC), Intermediate-Low-Comprehensible (ILC), and Non-Comprehensible (NC). This variable was forced to block as ordinal data as a result of a panel of experts’ inter-rater reliability assessment. For example, the numbers that earned by panel of experts lower than 5.99 were defined as Non-Comprehensible, the numbers that fall between 6.00-6.99 were defined as Intermediate-Low-Comprehensible, the numbers that fall between 7.00-7.99 were defined as Intermediate-High-Comprehensible, and the numbers that earn higher than 8.00 were defined as High-Comprehensible. However, the listeners’ perception of comprehensibility data (dependent variable) were raw scores obtained by an interval scale of measurement and data analysis process did not contain a blocking process.

On the basis of the one main and six rival independent variables, the two research questions were created. The research questions of predicting the two dependent variables on the basis of the two main and six rival independent variables were followed by the two null hypotheses. The hypothesis for research question #1 (Q1) was defined as $H_1$ and the hypothesis for research question #2 (Q2) was defined as $H_2$. 

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Q1: Can listeners’ perception of accentedness be predicted from the following listener affiliated socio-cultural factors?

(1) The Socio-Cultural Information of the speakers (SCI or group)
(2) The listeners’ academic major (major)
(3) The listeners’ length of time in the program (length of time)
(4) The listeners’ age (age)
(5) The listeners’ sex (sex)
(6) The listeners’ experience of being exposed to foreign accented speech (exposure)
(7) The listeners’ interaction with a foreign accented speaker (interaction)

Hypothesis testing for Q1

$H_0: R^2 = 0$

$H_1: R^2 \neq 0$

$\alpha = 0.05$

Q2: Can listeners’ perception of comprehensibility be predicted from the following listener affiliated socio-cultural factors?

(1) The Socio-Cultural Information of the speakers (SCI or group)
(2) The listeners’ academic major (major)
(3) The listeners’ length of time in the program (length of time)
(4) The listeners’ age (age)
(5) The listeners’ sex (sex)

(6) The listeners’ experience of being exposed to foreign accented speech (exposure)

(7) The listeners’ interaction with a foreign accented speaker (interaction)

**Hypothesis testing for Q2**

H$_0$: $R^2 = 0$

H$_2$: $R^2 \neq 0$

$\alpha = 0.05$

In order to answer the two (#Q1-#Q2) research questions, the socio-cultural information of the speakers was obtained by oral and written interview sessions. Their information was analyzed through qualitative approaches such as transcribing and thinking aloud interview protocols. The read-aloud task for textual materials was selected by the researcher to make the reading and listening process meaningful for the research participants. Therefore, the material of “Alumni Grants for Graduate Research and Scholarship” obtained by the following website (www.gradsch.ohio-state.edu) was selected as the reading material. The reading process was video-taped and audio-taped and only used for research purposes.

In summary, this study is concerned about explaining the following three phenomena: (1) predicting listeners’ perception of accentedness and comprehensibility, (2) the relationships between aural/visual input and the degree of perceptual differences of the listeners, and (3) the difference of listeners based on receiving/non-receiving the
information of SCI of the speakers. The lack of published studies on how the two types of input predict the responses of the listeners initiated this study. Therefore, this study intends to (1) predict accents and comprehensibility of NL and (2) explain the impact of different treatments on the perceptions of accentedness and comprehensibility. The purposes of this study may contribute to finding the factors that help L2 communication be more efficient and successful.

Significance of the Study

Previous studies on English pronunciation instruction (EPI) documented that some heavily accented speech can be perceived to be adequately intelligible (Derwing & Munro, 1997; Munro & Derwing, 1995). However, more research is needed to understand how the accent phenomena interfere with meaning (Derwing & Munro, 2005) because the comprehensibility of the speech is also influenced by some characteristics of accented speech (Derwing & Munro, 1997; Munro & Derwing, 1995). For these various reasons, therefore, this study is significant and meaningful for the field of L2 pronunciation research. First, the lack of attention to the socio-psychological as well as socio-cultural factors and internalizing process of listeners, has limited knowledge about the way to integrate pedagogical philosophies into actual classrooms of L2 pronunciation instruction. Although complicated issues exist to explain the interrelationship between socio-cultural, socio-psychological, socio-linguistic, and biological factors, this study combines these factors and suggests practical knowledge of L2 pronunciation pedagogy.
The process of overviewing the listener affiliated socio-cultural factors and internalization may clearly exhibit the factors affecting the perception of moderate, low, and non-accented speech. Subsequently, this study will contribute to creating additional useful data as a source of practical L2 pronunciation research and will be referred to as the document purported to develop practical and useful L2 pronunciation teaching materials and criteria.

This study will be significant in that it may make some suggestions to develop an elaborated curriculum for the training of ITA in American universities. Actually, the growing number of ITA employed in American academic settings, has triggered the necessity of investigating the relationship between speech factors of NNS ITA and comprehensibility of NL students. Although the expectation of native-like-speech and linguistic cues to ITA may not be achievable or realizable, possible ways have been suggested to increase American students’ tolerance to particular accents and accented speech. For example, Hahn (2004) manipulated some suprasegmental features and addressed them as nuclear stress or primary stress. To the three groups of American undergraduate students, she assigned different types of nuclear stress, collected their reactions to the lectures, and measured the comprehension of the classes. The group who was assigned to appropriate nuclear stress understood the lecture more comprehensively and evaluated the speaker more favorably while other groups did not. In summary, Hahn’s study implied that giving suitable instructions such as prosody and other suprasegmentals to L2 speakers, created positive impressions to the speakers or NL and increased the degree of comprehensibility. For the same reason, upon considering that
this study was designed to find socio-cultural factors that might impact tolerance and perceptions of accentedness and comprehensibility of various FBES; conducting this study may provide an essential resource for American educational policy makers to set realistic goals and help ITA as well as American students.

Furthermore, this study is worthwhile in that it provides opportunities of broadening the field of L2 pronunciation research as an exemplary source of investigating listener affiliated socio-psychological/socio-cultural factors that detect accentedness and comprehensibility of the L2 speech. From the viewpoint of NS of English who listen to the speech of NNS, they can extend their views on what factors can prohibit their understanding of NNS speech or what variables may help them their understanding of wide varieties of English. If SCI, age, exposure, and interaction variables are significant to increase their tolerance of foreign accented speech, NL may efficiently use such variables as communication participants. Therefore, using this study, the professionals and pronunciation specialists of teaching English to speakers of other languages (TESOL) in the context of English as a second/foreign language (ESL/EFL) may have a meaningful opportunity to (1) understand the practical needs and concerns of L2 pronunciation pedagogy for L2 learners, and (2) usefully refer the results to design a curriculum for ITA education in U.S.-based academic settings.
Definitions of Key Terms

This section briefly describes key terms that were constitutively and operationally defined for this study. In the three parts of this section, dependent variables were defined first followed by independent variables and other terms, to ensure clarity and consistency for this study. Constitutive definitions defined for this study were referred from Merriam-Webster-Online Dictionary (http://www.m-w.com) version 2007, and the operational definitions were defined by the characteristics of the measurement process explained below.

Dependent Variables

Dependent variables consisted of listeners’ perception of (1) accentedness and (2) comprehensibility. These two obtained variables were obtained by interval scale of measurement, treated as continuous data, and raw scores were used for data analysis.

Perception of Accentedness of the Listeners (Accentedness)

The constitutive definition of accent is “a way of speaking typical of a particular group of people and especially of the natives or residents of a region” (Merriam Webster, 2007). For this study, the definition of accent was operationally referred to as accentedness. The meaning of perception used for this study implies quick, acute, and intuitive cognition or physical sensation interpreted in the light of an experience.
Therefore, the term (perception of accentedness) was used to present the affective domain of “what people feel, perceive, and believe” (Miller, 2001, p.23). Accordingly, the judgmental process of whether the pronunciation of utterances sounds identical or different from an expected production pattern implies the perception of accentedness. Listeners’ perception is measured on the Listener Perception Scale (LPQ) that was developed by the researcher. This measurement is a summated rating scale on which a mean is calculated and treated as interval data.

**Perception of Comprehensibility of the Listeners (Comprehensibility)**

The constitutive definition of comprehensibility is “the capability to contain or hold within a total scope, significance, or amount” (Merriam Webster, 2007). Based on this definition, the term (perception of comprehensibility) indicates how the listener intuitively or physically senses the degree and overall rating of ease to understand a given speaker or the perception of the level of difficulty encountered to understand the given speech. This term was measured on the LPQ that consists of 6 pairs of bipolar adjectives with 10 point scales and is a summated rating scale. The mean for this term was calculated and treated as interval data. However, the speakers’ degree of accentedness (DA) and comprehensibility with 10 point scale points blocked with four ordinal categories as follows.

--High-Comprehensible (HC)

The term “high” implies “rich in quality” (Merriam Webster, 2007). For this study, the degree of rich quality with respect to a way of understanding a speech of a particular
group of people is defined as HC. For the purpose of numerical calculation, this study defined that the numbers that earn higher than 8.00 were referred to as HC.

--Intermediate-High-Comprehensible (IHC)

The term “intermediate” implies “being or occurring at the middle place, stage, or degree or between extremes” (Merriam Webster, 2007). For this study, the degree of middle quality with respect to a way of understanding a speech of a particular group of people is defined as IHC. For the numerical purpose, this study defined that the numbers that fell in between 7.00-7.99 were referred to as IHC.

--Intermediate-Low-Comprehensible (ILC)

The term “low” implies a status of being “situated or passing below the normal level, surface, or base of measurement, or the mean elevation” (Merriam Webster, 2007). For this study, intermediate low is defined as the degree of below the normal level quality with respect to a way of understanding a speech of a particular group of people. For the purpose of numerical calculation, this study defined that the numbers that fell in between 6.00-6.99 were referred to as ILC.

--Non-Comprehensible (NC)

The constitutive definition of “non” indicates “absence of” (Merriam Webster, 2007). Accordingly, Non Comprehensible (NC) is defined as the absence of the normal level with respect to a way of understanding a speech of a particular group of people. For the numerical purpose, this study defined that the numbers that earn lower than 5.99 were referred to as NC.
Main Independent Variables

Main independent variables consisted of speakers’ (1) Socio-Cultural Information (SCI) and (2) Degree of Accentedness (DA). The SCI was obtained by interview sessions with the speakers. The speakers’ DA was self-selected by the researcher, and the panel of experts ensured the validity of this selection.

Socio-Cultural Information of the Speakers (SCI)

The SCI for this study indicates common racial, national, tribal, religious, linguistic, educational or cultural origin or background of the speakers. The levels of the SCI consist of the following two levels: not providing SCI (level #1) for the audio group and providing SCI (level#2) for the video group and this variable was treated as dichotomous nominal data. This variable was obtained through interview sessions with the speakers. The listeners’ perceptions of the accents and comprehensibility were predicted by providing each level of the SCI with two groups, respectively, and Non-SCI is identified with audio group and SCI group is identified with video group.

Degree of Accentedness of the Speakers (DA)

The Degree of Accentedness (DA) of the four speakers was defined in terms of four ordinal categories such as Moderate Accent (MA), Low Accent (LA), Foreign Non Accent (FNA), and Native Non Accent (NNA). These levels were treated as
multichotomous and ordinal data. From the viewpoint of constitutive and operational definitions, the four levels were defined as follows.

--Moderate Accent (MA): The term “moderate” indicates the status of “tending toward the mean or average amount or dimension” (Merriam Webster, 2007). Therefore, this term (MA) is defined as the status of tending toward the mean or average amount or dimension with respect to a way of speaking typical of a particular group of foreign accented speakers.

--Low Accent (LA): The term “low” implies a status of being “situated or passing below the normal level, surface, or base of measurement, or the mean elevation” (Merriam Webster, 2007). Accordingly, this term (LA) is referred to as the status of being situated or passing below the normal level with respect to a way of speaking typical of a particular group of foreign accented speakers.

--Foreign Non Accent (FNA): The term “foreign” implies “born in, belonging to, or characteristic of some place or country other than the one under consideration” (Merriam Webster, 2007). The constitutive definition of “non” indicates “absence of” (Merriam Webster, 2007). Accordingly, Non Accent (NA) is defined as the absence of the normal level with respect to a way of speaking typical of a particular group of foreign accented speakers. On the basis of the two definitions, this term (FNA) is defined as the absence of the normal level with respect to a way of speaking typical of a particular group of foreign accented speakers but representing characteristics of some places or contexts other than English-speaking countries.
--Native Non Accent (NNA): This term (NNA) is defined as the absence of the normal level with respect to a way of speaking typical of a particular group of foreign accented speakers and representing characteristics of some places or contexts of English-speaking countries. The group of experts who are currently teaching at Spoken English Program and English Composition Program at OSU provided valuable input for this study in order to operationally define the four levels of DA. The variable of DA for the speakers was treated as ordinal because one speaker represents one level of the treatment and the rank-order of the speakers was used for the measurement. However, the speakers’ DA (main independent variable) was measured by the listeners’ perception of accentedness (dependent variable) using an interval scale of measurement. The scale of measurement contains a series of bi-polar adjective scales that consist of 10 point-semantic differences. This scale measured whether the speakers’ DA that were perceived by the listeners also represent as they were assigned as MA, LA, FNA, and NNA. In short, speakers’ DA (main independent variable) is ordinal while the listeners’ perception of DA (dependent variable) is treated as interval because the obtained data was calculated and summated by 10-point semantic differential scale.

**Rival Independent Variables**

The rival independent variables for this study consisted of listeners’ (1) academic major (major), (2) length of time in the program (length of time), (3) age, (4) sex, (5) experiences of being exposed to the foreign accented speech (exposure), and (6)
interaction with a foreign accented speaker (interaction). These variables were obtained by self-reporting on the Listener Information Questionnaire (LIQ).

**Academic Major at the Undergraduate and Graduate Program (major)**

The term “major” indicates the programs they were currently enrolled in and pursuing their degrees. Based on the wide varieties of the program, (e.g., CEHE and FAES), the obtained data were treated as multichotomous nominal but dummy-coded.

**Length of Time in the Program (length of time)**

The term “years” indicates the whole period of time that the participants have been enrolled in and pursuing their degrees. The time period that were self-reported by the participants were treated as interval.

**Age of the Listeners (age)**

The constitutive definition of age is: “one of the stages of life or the length of an existence extending from the beginning to any given time.” With respect to listener participants’ maturity to perceive various accents, the age ranges fell in between 21-55 and was treated as interval data.
**Sex of the Listeners (sex)**

This term indicates the male-female dichotomy and was self-reported on the listener information questionnaire (LIQ). The obtained data was treated as dichotomous nominal.

**Experiences of Being Exposed to the Foreign accented Speech (exposure)**

The term “exposure” implies whether the participants have ever been abroad (non-English speaking countries) and how long stayed there. The listener participants self-reported the whole period of days staying in foreign countries during the past year on the LIQ. The obtained data was treated as interval.

**Interaction with a Foreign Accented Speaker (interaction)**

This term indicates an average amount of time period that the listener participants listened to foreign accented speech other than native-speaking English during the past year. The listener participants self-reported the average minutes per week on the LIQ. The obtained data was treated as interval. In addition, this term implied that the participants who reported the higher number were more exposed to foreign accented speech and had a close acquaintance with certain accented speech.
Assumptions of the Study

This study is based on various assumptions from the perspectives of the listeners versus speakers. First, with respect to the listeners, the perception of accentedness and comprehensibility of the listeners have directions and are measurable traits by means of a semantic differential scale. This study assumed that more exposure to foreign accents would create more familiarity with accented speech. Therefore, the exposure variable also implied the familiarity variable but was referred to as exposure. The listener participants were also perceived to be capable of describing their ideas and views on the given speech since they were assumed to hear accented as well as non-accented speech. The listeners were expected to candidly express the impressions and judgments toward the four speech samples since they were presumed to be matured-beings, who can understand and answer the statements on LPQ and LIQ. Finally, on the basis of their matured beliefs, the process of responding to the instruments was supposed to be reasonable. As a result, the data gathered from the 60 NL were presumed to be candid, out-spoken, and trustworthy based on the fact that they were not required to present their authentic names and identities on the both LPQ and LIQ.

With reference to the speakers, the four speaker participants came across as genuinely motivated, they demonstrated interest, and voluntarily participated in this study. Similar to the listeners, they were mature and considerate when communicating with the researcher and when encountering difficulties in fulfilling the tasks required by the researcher. They received appropriate rewards for their contributions after being
tape-recorded and after having completed 36 of the open-ended questions. Such rewards could potentially help increase their eagerness, passion, and involvement in this project. Overall, although their voices and faces would be disclosed to numerous listeners, they were not concerned with revealing their identities. In general, all participants were believed to possess intellectual abilities and literacy skills to understand the instructions written in English on the questionnaire.
CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of the literature review section is to examine how some literature has theoretically portrayed the perspectives of L2 pronunciation research and pedagogy. This section is designed to (1) present theoretical frameworks that are related to EPI and accent studies and (2) connect these frameworks to this study that used visual and aural aids. This chapter consists of five sections. The first part of this chapter purports to demonstrate the interrelation between the principles of EPI and practices that are embedded in the socio-politically affiliated factors. The historical background of the dichotomy between NS versus NNS was explored by the overview of the concept of Native Speaker Fallacy, Monolingual Fallacy, and Linguicism.

The second section describes how biologically-affiliated factors (e.g., age and cognitive variables) are interrelated to the issues of L2 pronunciation. The theoretical background was explained by the CPH and the age factor with cognitive aspects of human beings (e.g., intelligence). The necessity of research that probes the relationship
between the biological factors and affective variables (e.g., language aptitude and motivation) is suggested for the further implications.

The third part of this chapter briefly overviews the historical and theoretical background of socio-psychological and socio-linguistic factors of L2 acquisition. In the fourth part, the issues involved in socio-cultural aspects (e.g., identity construction, perception, ethnic group affiliated factors, identity negotiation process, etc.) involved in L2 acquisition are examined. Based on these theoretical paradigms, the fifth section describes the impact of visual aids in order to explain how listeners’ perception of accent can be influenced by the visualized input. In brief, this chapter reviews a wide variety of theories and provides evidence for this study that examined the internalizing process of the listeners’ perception of the speakers’ socio-cultural information.

The Socio-Politically Affiliated Factors

The Power of English and Standard English

In the history of English Pronunciation Instruction (EPI), English obtained the position as a “bigger weapon in the armory of the English-speaking peoples than star wars” (Phillipson, 1992, p. 9). In other words, if some people take the weapon (English), they can hold the power and promote their status to the extent of governing the people who do not own it. The beliefs and attitudes of NS, who take the weapon through achieving mainstream-English accents and pronunciation, work as gatekeepers and play the role of a powerful metaphor of the dominant group in symbolic domination (Bourdieu,
The prestige of unaccented native-speaker speech has resulted in the misrecognition of both the dominant and subordinated groups (Taylor, 1994).

The position and power of English had an influence on people, who acquired the weapon with more confidence and advantages, and enabled the people to assume the position of all majority-minority relations (Davis, 1991). The concepts of standard language ideology and accent pioneered by Lippi-Green (1997) revealed that the inequality embedded in this concept affected communicative interactions among L2 speakers. According to Lippi-Green, ideology is “the promotion of the needs and interests of a dominant group or class at the expense of marginalized groups, by means of disinformation and misrepresentation of those non-dominant groups” (p. 64). The ideology in operation with dominant versus non-dominant group produced the powered or dominant language group (DLG or NS) and less-powered or non-dominant groups (Non-DLG or NNS). She claimed that the speakers who are from both groups share the communicative responsibilities at the phases of interaction. However, people from DLG reject the distribution of the “communicative burden” (p. 70) with meeting those of non-DLG. This refusal often occurs since the L2 speakers’ accent indexes particular identities for the interlocutor, for example, national, racial, religious, socioeconomic, sexual, etc. These factors reflect the speakers’ identities and call up another stereotype affiliated with accents (Lippi-Green, 1997; Jenkins, 2005).

The discrimination between dominant and subordinate groups has been represented in the debate on Standard English (SE) and accented-English. Both SE users and accented-English users were responsible for causing difficulties in restricting the
scope and the varieties of SE (Kubota, 2001; Lippi-Green, 1997). This phenomena lead to the debate on the identification of SE users among NS. Medgyes (1992) claimed that the division of standard-accent versus accented speech “does not always apply in so-called native English-speaking countries either” (p. 341) because NS are also divided into the groups of speaking SE versus other varieties of English. In reality, “there is no standardized accent associated with SE” (McKay, 2002, p. 51). Instead, the criteria applied to SE have resulted in the discrimination between NS who speak with local dialects or accented English and who do not (Lippi-Green, 1997). Even if the concept of SE commanded by NS has been presented as an ideal principle of English (Strevens, 1983), wide varieties of English are spoken by NS. Some of them are still marginalized because they speak with unique accent regardless of their nativeness.

Likewise, NS in native English-speaking countries have not obtained a universal agreement or a specific norm on what constitutes SE. The ideology of SE applied to NS resulted in power dynamics between the group of speaking SE and other varieties of English among NS. In the same way, FBES have been influenced by these power dynamics applied to SE or non-accented English. Even if to endeavor to speak English with native accent is not achievable for all English users, FBES have been labeled as NNS and have been affected by the dichotomy between NS and NNS. The distinction between the statuses of NS from NNS is prominent in the field of EPI and leads to the NS superiority (Phillipson, 1992).
The Dichotomy between Native Speaker of English (NS) and Non-native Speaker of English (NNS)

The issues of NS superiority have interplayed in EPI principles and have been strengthened by Western norms as well as discussed on a macro-societal and political level (Phillipson, 1992). Primary pedagogic conceptualization in EPI has been constrained by the binary categories of NS and NNS as well as by the predominant ideology of Western perspectives to the teaching of EP and culture (Kumaravadivelu, 2002). Phillipson (1992) claimed that these aspects permeate the beliefs and myths that NNS cannot be regarded as inherently equal to NS. Accordingly, he argued that the position of NS has been involved in critical educational aids from the micro level of EPI to the macro level of inequality.

Although the constructs of NS and NNS are hard to define, Davis (1991) claimed that early language acquisition provides the construct of NS for the language learners who are born into inner circle countries. He postulated that such myths also have an impact on the construction of NS principles in EPI, which postulate “the native speaker must represent a model and a goal” (p. 165). The beliefs of NS principles are deeply intertwined with “NS superiority paradigm” in EPI settings and this is called native speaker fallacy (Phillipson, 1992, 1996; McKay, 2002). This concept consolidated NS principles in that NS serve as the model or norm since they can reify works on standard grammar, vocabulary, received pronunciation, etc. By doing so, pronunciation teaching materials and sound-recording seek to re-animate this principle, and NS are perceived as the best embodiment of the norm and target for learners of English (Phillipson, 1992).
This fallacy is also intertwined with the *monolingual fallacy*, which asserts, “the teaching of English as foreign or second language should be entirely through the medium of English” (Phillipson, 1992, p. 185). Phillipson (1992) also argued that native fallacies involved in NS principles also represent the following beliefs: “an exclusive focus on English will maximize the learning of the language” (p. 185). As a result, the speaker who commands one language (English) only is perceived to be superior to the bilingual speaker (who possesses English and another first language). Such beliefs also provide the linguistic superiority for NS in the field of teaching and learning English. For instance, Samimy and Brutt-Griffler’s (1999) study examined the beliefs of linguistic superiority of NS in some Asian countries. From the linguistic point of view, NS have been characterized as “being informal, flexible, self-confident, fluent, and accurate users of English” (p. 135). NS are believed to know more subtleties of English as well as use authentic English, and their colloquial and conversational English aim to improve language learners’ communication skills instead of developing exam preparation. Such linguistic competence and confidence enables them to possess higher positions and socio-political power dynamics compared to NNS. Their linguistic advantages offer them more chances of having superiority, self-confidence, and socio-cultural power in the field of English teaching and learning.

These phenomena are manifested in the study of Medgyes (1992). The researcher found that international students studying in Britain preferred to be instructed by NS teachers. The students challenged and discredited linguistic sensitivity and proficiency of NNS and preferred NS because they believed that NS play the role of an idealistic model
for international learners of English. NS principle provided some advantages for attaining
a target culture because NS benefited from their inherited background and understanding
of their own cultures. To some extent, monolingual or mono-cultural native speakers
might provide some disadvantages for the L2 learners since NS are not able to sensitize
L2 learners’ needs and assist their conceptual understanding. However, the lack of
linguistic sensitivity, competence, proficiency, and cultural knowledge of NNS fail to
surpass the defects of NS. These insufficient qualities of NNS still undermine the
construction of confidence and superiority as opposed to NS who obtain these traits.

Phillipson (1992) observed that the insufficient linguistic skills of NNS have been
undervalued, and the abilities of NNS to command native-like pronunciation have been
doubted and regarded as a linguistic deficit. No matter where they are born, they have
been characterized as the people who should use English as their L2. They are perceived
to possess permanent limitations that make them put in effort to obtain native-like
pronunciation and overcome their own accents (Canagarajah, 1999; Lippi-Green, 1997).
The ideology of acquiring native-like pronunciation has compelled NNS to assimilate
into the target language and culture, and this view has been criticized for challenging
their identities and failing to recognize them (Pennycook, 1990). In a sense, the efforts to
attain political and cultural aspects of English were replaced by the process of simple
assimilation to the target language and culture.

Phillipson (1992) also argued that such a movement may be operated with
linguicism, which “refers exclusively to ideologies and structures where language is the
means for affecting or maintaining an unequal allocation of power and resources” (p. 55).
For this reason, he found that NNS are stigmatized because of their accents and local dialects of English in the field of EPI, and linguicism on the actions and actors is in operation with unequal division of power consciously or unconsciously. The result of linguicism based on NS-NNS dichotomous principles established barriers for NNS to possess ownership of English as learners (Peirce, 1995, 1997). According to Peirce (1995, 1997), any language learner can claim ownership of a language if they invest in a new language and acquire wide varieties of the symbolic and material resources associated with obtaining the language. In doing so, she believed that the NNS principles can produce more positive and productive perspectives on their identities and contribute to the changing beliefs of NS-NNS dichotomy.

The NS-NNS Dichotomy and Accent Studies

Many scholars (Matsuda, 2003; Kachru, 1998; Peirce 1995, 1997; Yano, 2001) claimed that the paradigm of NS-NNS dichotomy has been complicated by the emergence of non-native varieties of English. Non-native varieties of English (e.g., Kachru, 1998) have raised the issue that NNS have the right to possess ownership of English as NS do (Matsuda, 2003; Peirce 1995, 1997) without regard to their accent. Many studies (Derwing & Munro, 1997; Flege, Takagi, & Mann, 1995; Munro & Derwing, 1995, 1997, 1999; Nelson, 1982; Purcell & Suter, 1980; Smith, 1992) have represented the interrelationship between accent and the production of intelligible or comprehensible speech of L2 speakers. For example, Derwing and Munro (1997) examined that obtaining intelligibility in a L2 was inextricably bound to accent studies,
and Smith (1992) posited that the study of word and utterance recognition corresponded fairly closely to the notion of intelligibility. According to Nelson (1982), intelligibility was referred to as “the apprehension of the message in the sense intended by the speaker” (p.63). Purcell and Suter (1980) identified that speakers’ accents were predicted by four factors: speakers’ L1, aptitude for oral mimicry, strength of concern for pronunciation accuracy, and length of time in the L2 environment. Similarly, from the viewpoint of listeners, accent of NNS in the target language was detected by sex, age of arrival, overall proficiency in the L2, and self-ratings of oral mimicry skills (Thompson, 1991).

Many studies documented that accent and intelligibility are somewhat involved (Flege, Takagi, & Mann, 1995; Munro & Derwing, 1995, 1999; Munro, Flege, & MacKay, 1996; Smith, 1992) but separable (Munro & Derwing, 1995, 1997, 1999). For example, Munro and Derwing (1995) compared the following three aspects: accent, intelligibility, and perceived comprehensibility, with phonemic, phonetic, and grammatical errors, and the goodness of intonation ratings in English productions of Mandarin speakers. This study indicated that accent ratings were substantially related to the goodness of intonation ratings and all error types. However, phonetic errors were not correlated with intelligibility scores for any of the listeners, while grammatical and phonetic errors and goodness of intonation ratings were correlated for some listeners. Accordingly, the attempt to measure these two dimensions (accent and intelligibility) ultimately concluded that the quality of intelligibility was independent of accent.

In reference to the study of comprehensibility, this term has been used in various ways. While Munro and Derwing (1997) referred to comprehensibility as “judgments on
a rating scale of how difficult or easy an utterance is to understand” (p. 2), Smith (1992) posited that comprehensibility was a higher level of understanding than intelligibility. On the other hand, Gass and Varonis (1984) defined comprehensibility in the sense of intelligibility and noticed that the sense of the terms “intelligibility” and “comprehensibility” were somewhat interrelated. They discovered that familiarity with accented speech, a particular accent, and topic of the contents had an impact on NS comprehension. Similar to Gass and Varonis’s study, Wingstedt and Schulman (1984) concluded that comprehension was facilitated by familiarity with a particular accent. In another study, Munro and Derwing (1995) found that comprehensibility was significantly correlated with linguistic measures and goodness of intonation for the majority of listeners, whereas the correlation with phonetic errors was less significant.

Conclusively, accent, intelligibility and comprehensibility are interrelated (Derwing & Munro, 1997). However, as many accent studies have portrayed (Flege, Takagi, & Mann, 1995; Munro, Flege, & MacKay, 1996), strong accents did not necessarily preclude full intelligibility or comprehensibility. According to Munro, Derwing, and Morton (2006), even if accent and comprehensibility are related to intelligibility, they are partially independent dimensions. Their study examined that an utterance that was rated as “heavily accented” could be understood and regarded as fully intelligible by the same listener. Two utterances that were rated as fully intelligible brought distinctive degrees of processing difficulty. With respect to comprehensibility, these utterances might be rated differently. In brief, accent, intelligibility, and comprehensibility are intertwined but they are partially independent dimensions
Based on these examples, this study refers to the research of accent, intelligibility, and comprehensibility, and concludes that accent and comprehensibility are interrelated but independent and separable dimensions. Therefore, this study is meaningful for attempting to find out whether a wide variety of foreign accents interferes with comprehensibility although certain accents may lead the listeners to require extra processing time to comprehend and lower perceived comprehensibility ratings (Munro & Derwing, 1995).

Paradigm Shifts from the NS to the NNS Principle

Accent studies supported the claim of Peirce (1995, 1997) in that the NNS principles may produce some positive aspects of helping NNS possess ownership of English and lead to changing beliefs and paradigms in EPI. Phillipson (1992) suggested that the first aspect is about the diversity of contexts of using English, which denotes idiosyncratic purposes, teaching needs, and strategic approaches varying from one context to another. For instance, ESL consists of two contexts: (1) that “describe programs teaching English to people with a language other than English as their mother tongue” (p. 24), and (2) “countries in which English is not a native language but where it is used widely as a medium of communication in domains such as education and government” (p. 24). Another conventional context comprises EFL countries in which “English is not a medium of instruction or government, but is learned at school, as is the case in France or Japan, for communicating with speakers of the language, or for reading texts in the language” (cf. Phillipson, 1992, p. 24; Richards, Platt, & Weber, 1985).
The second aspect is basically intertwined with the fact that NNS can speak two languages and their linguistic skills can be regarded as resources for the students who use L2 for comprehension. The roles of English within diverse contexts and in the wider communities are different and teaching needs and purposes vary. Accordingly, NNS teachers’ abilities to understand the first language of their students have received more attention. EFL contexts offer a good example in which the NNS principles can provide some benefits for L2 learners. NNS teachers can use the learners’ mother tongue (Medgyes, 1992) to help L2 learners understand conceptual knowledge (e.g., grammar, sentence structure, and rhetorical knowledge, etc.) that requires metalinguistic and cognitive functioning (Liu, Ahn, Baek, & Han, 2004). Banning the mother tongue from L2 learning classrooms is more detrimental to L2 learners since L2 learners cannot reach a satisfactory level of language learning (Liu et al., 2004; Medgyes, 1992). Therefore, when learners lose their mother tongue, they are alienated, deprived of cultural identity, and their intercultural communicative competence is decreased by being acculturated (Phillipson, 1992; Medgyes, 1992).

Although NNS teachers have been described as having a deficit to teach the target language due to linguistic deficiency, they can efficiently anticipate learners’ difficulties and solve the situations (Medgyes, 1992) because they have had common language experiences as their students do. Such traits have been argued as the contributory factor of the NNS principles to help develop L2 learners’ conceptual knowledge. These qualities can allow NNS to serve as imitable and successful language learning models (Medgyes, 1992; Samimy & Brutt-Griffler, 1999) and function as powerful predictors to
provide L2 learners with theoretical insights and professional leadership which are attitudinally, pragmatically, and contextually useful (Kachru, 1986). The roles of the NNS principles related to sharing similar identities through common language experiences deserve to be regarded as a contributive factor to EPI.

Paradigm Shift from the NNS Principle to Bilingual (Multilingual) Users of English

In addition to some positive aspects of the NNS principles, many documents emphasize how to understand both L2 learners’ resource and target cultures and in what ways they can improve both qualities. This principle is suggested by the model of bilingual users of English (referred to as BUE, McKay, 2002) or multicompetent and multilingual users of English (referred to as MUE, Pavlenko, 2003). The concept of BUE or MUE (hereafter: referred to as BUE) model identifies ones who can express themselves to monolingual speakers from the others who speak more than one language (McKay, 2002). Therefore, this model exhibits the concerns about how to improve linguistic proficiencies and cultural sensitivities of NNS. As opposed to the concept of NS that denotes “special control over a language, insider knowledge about ‘their’ language” (Davis, 1991), the BUE model tries to overcome the arguments raised through the dichotomy between the NS and NNS principles (McKay, 2002).

This model respects NNS who are located in diverse contexts and maintain their own predominant identities because they can control two or more languages. Furthermore, whenever BUE feel the necessity to acquire a wide variety of English and linguistic proficiency, this model encourages them to have opportunities to improve language
proficiencies (McKay, 2002). On the basis of their needs, they can choose the contexts that offer them any institutional contexts such as Western-based TESOL program or EFL-based TESOL program (Carrier, 2003). If such a program offers adequate linguistic knowledge and context by which NNS voices are raised and respected (Carrier, 2003), it would be valuable to NNS.

This principle embraces NNS’s identity positively and posits that NNS can take chances to extend their knowledge about a target culture. Brutt-Griffler and Samimy (1999) claimed that “the same cultural background with the students, the experience as a language learner, and a good model of language learning” (p.417) are conducive to L2 learning. These scholars argued that NNS should utilize their maintenance of dual cultures as a way to maximize their own strengths in the paradigm of deficit linguistics in real situations. They NNS’s linguistic and cultural deficiencies should be expressed by the notion of how to represent the paradigm either implicitly or explicitly. In this way, the BUE principle argues against inherent limitations assigned to the NNS principle and is useful to L2 users as a principle “that is relevant to their own social and cultural experience, a model that no language teacher from another culture can ever provide” (McKay, 2002, p. 45). In other words, this model utilizes a “difference approach” to enhance deficient cultural knowledge, and regards their inheritances as “the positive elements that NNS bring to the profession” (Brutt-Griffler & Samimy, 1999, p. 417).

The BUE model can also contribute to the effectiveness of accomplishing the goal of EIL. This suggests that, “EIL teaching should not be for students to accept the standards of Inner Circle Countries, but rather to recognize how particular pragmatic
differences might affect their own cross-cultural encounters” (Jenkins, 1998, p. 84). According to the BUE model, when NNS obtain a target culture while learning a language, they do not need to assimilate into the target culture without considering a resource culture. This model does not pursue a simple assimilation or acculturation but the process of possessing intercultural aspects of diverse cultures (Jenkins, 1998; McKay, 2002). This model requires L2 learners: (1) to understand a target culture through the media of international language (English) and (2) to make their own ideas and cultures understood by other community members (McKay, 2002). In this sense, NNS who accept the BUE model positively can have relatively diverse experiences of a resource culture and a target culture compared to NS. BUE who possess bi-cultures can play an important role in teaching English from the EIL perspectives, and this can help NNS students recognize the diverse situations used within multilingual communities (McKay, 2002).

Instead of pursuing “native-like” pronunciation, accent, and grammaticality, by respecting distinctive aspects of EIL, the BUE principle leads to accomplishing intelligibility and comprehensibility (Jenkins, 1998; McKay, 2002). EIL does not emphasize SE but values the variation of English, “even though grammatical variation, especially on the acrolect level, has the least potential for causing problems of intelligibility” (McKay, 2002, p. 72). These principles offer significant perspectives applicable to EPI. Even though NNS may not sound like NS, they can modify pronunciation classes to concentrate on “those areas that appear to have the greatest influence on intelligibility, namely, particular segmental, nuclear stress, and the effectiveness use of articulatory setting” (McKay, 2002, p. 71). Since the criteria of SE
that are applied for white monolingual English speakers also distinguish the individuals who speak with standard accent from who do not, genuine and meaningful expertise and identities of learners should be created by the BUE model (Leung, Harris, & Rampton, 1997).

Until now, the positive aspects of the BUE principle offered wide varieties of responsibilities for NNS teachers to help improve linguistic as well as cultural deficiencies of learners. According to Carrier (2003), without obtaining native-like proficiency and sufficient linguistic knowledge, NNS teachers’ endeavors to be trained in well-programmed institutional affiliations is not beneficial in teaching them appropriate pronunciation, grammar, linguistic structures, and oral presentation skills. In order to overcome this limitation, Carrier recommended that NNS teachers should participate in discussions and classroom interactions offered by Western-based NNS teacher training programs. In these programs, NNS teachers can present their materials before peers and teachers in the training group. Also, her study found that participating in panel discussions and conversation sessions was beneficial for NNS teacher trainees to improve linguistic proficiency (Murdoch, 1994; Carrier, 2003). However, improving NNS teachers’ linguistic proficiency does not necessarily imply achieving native-likeness since achieving native-like pronunciation has been regarded as time-consuming and unrealistic (Field, 2005). To a certain extent, overemphasis on achieving native-like accent undermines the fundamental duties of appropriate knowledge and proficiency as teachers. These traits are as important as nativeness and pronunciation because NNS teachers’ professional knowledge and proficiency surpass their accents and contribute to the
learners’ development of linguistic knowledge and proficiency. If NNS teachers endeavor to recognize and acknowledge appropriacy underlying the BUE model, it would help their students possess critical views to value appropriacy of teachers (Lippi-Green, 1997).

The Summary of Socio-Political Factors

Socio-political factors of EPI have been aligned with the power of English, Standard English, and NS-NNS dichotomy. These issues have been combined with native speaker fallacy, monolingual fallacy, and linguicism. Although these fallacies have been intertwined and had a negative impact on the field of EPI, many studies have argued that wide varieties of English need to be respected (Jenkins, 1998; Kachru, 1986; Phillipson, 1992), and various users deserve to possess ownership of their Englishes (Matsuda, 2003; Peirce 1995, 1997). Many studies have proposed that paradigms need to be shifted from teaching “native-like pronunciation” to “intelligibility and comprehensibility” (Avery & Ehrlich, 1992; Field, 2005; Jenkins, 2000, 2002; Jenner 1989; Levis, 2005; Morley, 1991; Smith & Rafiqzad, 1979) because the bilingual users English maintain their own strengths and experience. Accordingly, the BUE model obtained value and many studies have paid attention to the NNS principle. For instance, this principle in EPI has its own strengths and values and deserves successful instruction principles for L2 learners as well as teaching professionals in particular contexts. The only caution is that insufficient knowledge about English may increase NNS’s insecurity and constant stress, and will continuously provide an inferiority complex (Medgyes, 1992). In terms of the BUE
model, NNS are suggested to maintain life-long duties of developing good command and adequate knowledge of English (Medgyes, 1992).

The knowledge may comprise the interrelational aspects between the socio-political factors and biological factors (e.g., age and cognitive variables). In order for the NNS principle and BUE model to be supported from the positive aspects and to be useful to EPI and accent studies, more documents and studies are required to examine the relationship between these two factors. The socio-political issues of English cannot be isolated from understanding of the theoretical background that is explained by the maturational conditions of learning an L2 (e.g. an age factor or cognitive aspects of human beings). Therefore, the next section tries to portray the interrelational aspects between maturational factors and EPI.

Biologically-Affiliated Factors

The Critical Period Hypothesis (CPH) and Lateralization

For many years, there have been continuing research trends on the nature and extent of the relationship between biological constraints on articulation and pronunciation of L2 instruction (Moyer, 1999). The pioneering work on this issue was addressed as CPH originally proposed by Penfield and Roberts (1959) in the neurolinguistic literature and then was vigorously studied by Lenneberg (1967). According to Lenneberg (1967), children possess a biologically determined timetable in L2 learning, and such a system may help them be superior to adults in L2 acquisition. That is a biologically optimal age,
which is called “the critical period” (CP) and greater brain flexibility apparently help younger learners be ideal for learning L2 (Bickerton, 1981; Brown, 1994; Johnson, 1992; Johnson & Newport, 1989; Krashen, 1973, 1982; Lenneberg, 1967; Lightbown & Spada, 2000; Oyama, 1976; Patkowski, 1980, 1994). Such process occurs through lateralization, which connotes that human brains are assigned or lateralized to the right hemisphere of the brain for the purpose of fulfilling certain functions, and other functions are moved to the left hemisphere (Lenneberg, 1967).

Lateralization is observed to begin at the age of 2 and is completed around puberty (Brown, 1994), and provides language learners with maturational constraints (Hyltenstam & Abrahamson, 2001). This process limits certain linguistic abilities, and these capacities do not develop after the CP (Bickerton, 1981). In particular, a recent study examined that the linkage between phonetic perception in infancy and decline in phonetic discrimination for non-native phonemes occurred by the end of the 1st year (Kuhl, Conby, Padden, Nelson, & Pruitt, 2005). As a result of the association with native language phonetic awareness, the decline in non-native phonetic discrimination develops at an early age and reduces the ability to discriminate L2 phonemes later on (Kuhl et al., 2005). In sum, the benefit of learning L2 before puberty is related to help language learners acquire native-like accent, phonetic awareness, and pronunciation (Scovel, 1969).

More arguably, various scholars have pointed to the end of CP differently. For instance, Lenneberg (1967) manifested the age of 9 as the point that language function becomes highly variable. Krashen (1982) postulated that the boundary for successful L2 learning occurs earlier around age 5-6, and Long (1990) also agreed with this point.
Seliger (1981) claimed the age of 10 as the earliest, generalizable, and reliable point at which biological advantages go into effect. Whereas most scholars pointed the age of 10 or below as indicative of the point that was predictably related to the outcome of L2, Patkowski (1982) cited the age of 15 as the point to separate L2 learners into the age group at which maturational constraints occur.

The CPH and Language Function

Compared to grammar and other syntactic aspects, numerous scholars have claimed that phonology was most sensitively affected by the age (Bongaerts, Planken, & Schils, 1995; Flege, Yeni-Komshian, & Liu 1999; Kuhl et al., 2005) in L2 acquisition. For instance, Flege et al., (1999) investigated the relationship between age of arrivals in the U.S.A and degree of foreign accents in 240 native Korean-speaking learners of English, and drew positive relationship between the two variables. It was observed that subtle aspects of grammar reached by the early starters of bilinguals were relatively easily acquired than late bilinguals with many years of exposure to L2 learning environment (Birdsong, 1992; Johnson & Newport, 1989; White & Genesee, 1996). Some scholars used neuroimaging techniques (Perani, Abutalebi, Paulesu, Brambati, Scifo, & Cappa, 2003) and demonstrated that the early starters of bilingual adults commanded comparable levels of proficiency in L1 and L2, and brain activation for word production differed in both the initial age of L2 acquisition and levels of language exposure.
More interestingly, the points of revealing biological constraints varied from one language function to another. In particular, phonological acquisitions was constrained as early as at the age between 5 and 6 (Long, 1990) while obtaining syntactic, morphological, or morphosyntactic abilities was less rigid and later than this point (Lenneberg, 1967; Long, 1990). For instance, 6-10-year-old children in the U.S. from various L1 background showed relatively accurate production of given phonological structures. However, 11-15-year-olds achieved better in morphological and syntactic tasks (Fathman, 1975). Hilles (1991) and Lakshmanan (1991, 1994) explored that children’s development of verbal inflection and syntactic aspects had not demonstrated direct relationship and probed the limited ability of child L2 acquisition. In some sense, the proponents of CPH have not focused on the learning rate between adult learners and younger learners. Instead, they believe that worthwhile discussions lie in the ultimate outcome of attaining native-like proficiency in L2 learning, which is influenced by the onset of language learning after a certain age (Hyltenstam & Abrahamsson, 2001).

In summary, the supporters of CPH agreed with the belief that younger aged children can learn L2 more easily and quickly, and the younger age may offer the more skillful and flexible biological mechanism in acquiring L2 (McLaughlin 1992). Whereas some of the studies have supported that children learn better in acquiring native-like pronunciation and developmental morphosyntax (Long, 1990; Scovel, 1969) and basic interpersonal communicative skills (BICS, Cummins, 1981), others also provided evidence that morphological, syntactic, or morphosyntactic functions of language were
less rigidly influenced by maturational constraints although the differences vary from one
another.

The CPH and Adult Learners (Late Starters)

In contrast to early starters, adult learners (hereafter: identified with late learners
or older learners) encountered neurological or motor skill constraints, and their
entrenched articulatory habits and restricted perceptual targets for phonological
categories hindered the attainment of native-like productive abilities (Scovel, 1981;
Walsh & Diller, 1981; Wode, 1989, 1992). Late learners also faced the different
approaches of acquiring a phonetic system compared to child learners (Flege, 1987b;
Flege & Munro, 1994; Flege, Munro, & MacKay, 1995). Adult learners’ predominant
phonetic categories from L1 prohibited them from processing phonetically accurate
targets for L2 sounds (Wode, 1992), and processed phonetic input differently. As a result,
even if NNS attained native-like syntactic and morphosyntactic linguistic abilities, their
pronunciation abilities obviously differed from NS (Moyer, 1999).

However, late learners performed better in producing higher order structures that
contained morphosyntactic features than younger learners (Fathman, 1975). Olson and
Samuels (1982) demonstrated that older learners accomplished better than younger
learners on given tasks of immediate imitative abilities such as imitation tasks of
phoneme drills. Although such tasks differed from those of naturalistic speech production,
older subjects were able to perform well in pronunciation drill tasks. Similarly, long-term
research examined that the effect of CP was not apparently providing short-term
superiority for older learners but leading younger learners to long-term accuracy (Snow & Hoefnagel-Hohle, 1982). More specifically, Snow and Hoefnagel-Hohle (1982) discovered that older learners actually outperformed children in the beginning phases of learning. However, surprisingly, the younger learners caught up to and relatively exceeded the older learners’ phonological accuracy within 10 months.

The Myths and Misconceptions about CPH

Although CPH is predominant in the L2 pronunciation research, unfortunately, this hypothesis involves wide-spread misconceptions about the capability of younger language learners and so has been challenged by many other scholars (Genesee, 1981; Harley, 1989; McLaughlin, 1992; Marinova-Todd, Marshall, & Snow, 2000; Newport, 1990). They argued that the beliefs on this hypothesis produced unreasonable myths. This idea implied that once younger children have acquired a L2, they were able to automatically speak it (McLaughlin 1992). The opponents of CPH have insisted that biological factors such as younger age and flexible brains were not the only indicators of easy L2 acquisition (Asher & Price, 1967; Bialystok & Hakuta, 1999; Marinova-Todd et al., 2000; Newport, 1990). Rather, they posited that social and psychological factors should be focused on for the sake of observing the language learning processes.

Bialystok and Hakuta (1999) claimed that the controversy over the status of a CP for L2 learning should not conclude that age is a causal or correlational factor for the success of L2 learning. For instance, younger Spanish speaking learners of English performed at a higher level than older learners in judging sentences containing errors.
However, the pattern of judging by both younger and older participants was exactly the same. As a result, they examined that the amounts of L2 interference distinguish older learners from younger ones, whereas the nature and the pattern of the interference occurred by L1 were the same. In other words, assuming that if a CP exists, “the relation between age of learning and proficiency will be nonlinear because of a sharp break at the critical period, if there is not a CP, the relation will be linear” (Bialystok & Hakuta, 1999, p. 173). However, there was no sharp decline in language proficiency before and around puberty and the decline remained constant with the similar degree. Conclusively, although adult learners possessed much more L1 compared to children, the older age was not a critical factor in interfering with the acquisition of L2.

In addition, numerous researchers explored that no any aspect of L2 learning is indifferent from the effects of cognitive factors (Bialystok & Hakuta, 1999; Hakuta, Bialystok, & Wiley, 2003). According to them, linguistic and cognitive factors are crucial to produce patterns of results that attribute to age difference. For instance, the acquisition of L1 literacy may allow children to develop more sophisticated and complex conceptions of phonological structure. Without regard to which language they read, children show rapid advancement of their metalinguistic concepts (Adams, 1990; Bialystok & Hakuta, 1999). As far as children’s level of literacy is one of the factors in L2 acquisition, the process of L2 learning may not be controlled by linguistic mechanisms as they insisted (Bialystok & Hakuta, 1999; Hakuta, Bialystok, & Wiley, 2003). Instead, the impact of cognitive factors should be examined.
The CPH and Socio-Environmental/ Cognitive factors

Including cognitive factors, Bialystok and Hakuta (1999) argued that the social and environmental factors should be regarded as crucial to supporting children’s fast acquisition of L2. Without accounting for the interaction between age related factors and social and environmental factors, age might not critically influence children’s easy acquisition of L2. For example, they emphasized that different instructional forms and quality differences of teachers and instructional methods, availability of written texts, and opportunity for instruction and qualitative as well as quantitative schooling had a great impact on the proficiency of L2 learners. To the extent that children have official school education in contrast to the adults who do not in situations of immigration, the demonstrations of simple age-related factors in ultimate linguistic proficiency could not determine the fundamental cause of those differences.

In the same way, although children can develop oral skills relatively easily compared to adults, such phenomena do not always imply that they can develop higher cognitive skills as adults do (Cummins, 1980). According to Cummins, children master oral communicative skills a little faster (3-5 years) than disembedded cognitive language skills required for mastering the regular English curriculum (5-7 years). Similarly, Asher and Price (1967) examined that under “controlled conditions”, younger learners’ linguistic performance was poorer than adults or adolescents. In the area of pronunciation, children seemed much more superior to the adult learners even though younger aged learners were accorded by the children-favor treatment to examine other area (McLaughlin, 1992). According to McLaughlin (1992), children were skilled at acquiring
native-like authentic accent and pronunciation. However, these phenomena did not ultimately verify the younger-is-better hypothesis.

CPH has been also criticized by Flege (1987a) for offering a simplistic view of inherently complex phenomenon. He claimed that this hypothesis has been marked by various “conditions that co-vary with chronological age” (p. 167), since a decline in plasticity and lateralization underlies difficulties in late language learning (Moyer, 1999). In addition, Moyer (1999) argued that a strict neurological framework for explaining maturational constraints needs to refer to socio-psychological factors, environmental concerns, and cognitive skill development. He concluded that CPH should comprehend more research considering various conditions that can provide substantially strong support in the research on L2 phonological acquisition and ultimate attainment whether the studies propose or oppose CPH.

**The Summary of Biological Factors**

Biological factors in L2 acquisition have been aligned with the issues of the CPH, lateralization, and language function (Lenneberg 1967; Penfield & Roberts, 1959). The myths and misconceptions about this hypothesis have resulted in the notion of “the-earlier-the-better” and the late starters or adult learners have been discredited to their linguistic performance compared to younger learners (Bickerton, 1981; Brown, 1994; Johnson, 1992; Johnson & Newport, 1989; Krashen, 1973, 1982; Lenneberg, 1967; Lightbown & Spada, 2000; Oyama, 1976; Patkowski, 1980, 1994). However, many studies argued that children and adults have their own strengths, which help acquire
different language functions and perform well particular tasks (Fathman, 1975; Olson & Samuels, 1982). Continuing research has emphasized the necessities of studying various factors and characteristics involved in the biological constraints of younger-aged learners (e.g., age and cognitive process) and others.

Conclusively, the limitation of maturational constraints needs to be considered in the wider contexts of educational, social, political, and cultural aspects of EPI. In particular, cognitive aspects of human beings (e.g., intelligence) and affective variables (e.g., language aptitude and motivation) need to be further studied. In the same way, various aspects of socio-linguistic and socio-psychological factors such as nurturing environment for the participations of L2 learners, equal educational opportunities, simplified-input for younger learners, and cooperative peers (Bialystok & Hakuta, 1999) should be employed to explain the factors that have an impact on L2 learners’ pronunciation acquisition. Therefore, the following section purports to profoundly discuss the studies on socio-psychological and socio-linguistic factors and contribute to understanding of L2 pronunciation pedagogy and EPI.

The Socio-Psychological versus Socio-Linguistic Factors

The Interrelational Aspects between Biological and Socio-Linguistic/Socio-Psychological Factors

Much literature has focused on the age factor as being influential in the attainment of L2 pronunciation. However, various studies that explain the relationship between
non-biological factors (e.g., socio-linguistic or socio-psychological) and biological aspects have been less examined (Clement, 1980; Gardner & Lambert, 1972; Gatbonton et al., 2005; Moyer, 1999, Ortega, 1999). Particularly, the effects of socio-psychological aspects: (1) motivation and attitudes as studied by Clement (1980) and Gardner and Lambert (1972), (2) self-perception instruction and suprasegmental training as examined by Moyer (1999) and (3) pretask planning as probed by Ortega (1999) have been studied but have not focused on the interrelational aspects of biological factors. Moreover, the role of instructional variables in promoting pronunciation and accent has been underestimated (Bradlow et al., 1997; Derwing, Munro, & Wiebe, 1998). The relationship of socio-linguistic identity and ethnic group affiliation, (Gatbonton et al., 2005; Golombek & Jordan, 2005) and L2 pronunciation pedagogy was less explored. Accordingly, the necessity of probing the impact of learner variables (Leather & James, 1996; Segalowits, 1997) on the acquisition of L2 pronunciation accuracy and fluency has received more attention although fewer studies exhibited the significance.

To some extent, the complexity of the interrelationship between the acquisition processes to become competent L2 users and various learner variables limited the documentation of socio-linguistic and socio-psychological variables (Gatbonton et al., 2005; Moyer, 1999). For instance, in order to obtain the ability to speak competently and appropriately in different social situations, purposes, and agents, L2 learners need appropriate linguistic, socio-linguistic, strategic, discursive, and grammatical knowledge that is defined as *communicative competence* (Hymes, 1971). From this perspective, L2
learners’ socio-linguistic and discourse competence basically involve L2 learners’ utterances.

Canale and Swain (1980) emphasized that socio-linguistic competence (SLC) is required for L2 learners to attain the basic understanding of the socio-cultural context that means “the roles of the participants, the information they share, and the function of the interaction” in which a language is used (Brown, 1994, p. 228). They also focused on grammatical competence (GC), which means “knowledge of lexical items and of rules of morphology, syntax, sentence-grammar semantics, and phonology” (Canale & Swain, 1980, p. 29). With this, language users are able to connect sentences, form meaningful utterances, and avoid the breakdown of conversation in order to successfully participate in discourse. This competence is defined as discourse competence (DC). If GC mainly functions for sentence-level knowledge and correctness, DC mainly considers intersentential relationships (Brown, 1994).

Sometimes, language users try to activate strategic competence (SC), which denotes “the verbal and nonverbal communication strategies that may be called into action to compensate for breakdowns in communication due to performance variables or due to insufficient competence” (Canale & Swain, 1980, p. 30). In order to compensate for inadequate knowledge of language, “paraphrase, circumlocution, repetition, hesitation, avoidance, and guessing, as well as shifts in register and style” (Savignon, 1983, pp. 40-41) could be used to enhance clarity of L2 utterances. Furthermore, in addition to learners’ competence, L2 users should face the challenging situations by their socio-psychological identity since they are labeled as NNS, and this identity is “embedded
within power relations” as well as “multiple and contradictory” situations (Norton, 2000, p. 127).

In this way, attaining communicative competence of L2 is influenced by numerous individual factors (e.g., attitude, aptitude, motivation, learning style, anxiety, and the quality of input and feedback) and socio-linguistic variables. Accordingly, probing the interrelationship between socio-linguistic and socio-psychological variables is quite complicated because various factors and individual variables are intertwined (Moyer, 1999). Similarly, examining the relationship between these two factors and socio-cultural factors also results in limitations and places a burden on the professionals in EPI.

The Socio-Cultural Factors

Language, Speech Acts, and Identity Construction

Interests in defining the concept of socio-cultural aspects in acts of speech or utterances have been studied by many socio-cultural theorists (Heath, 1983; Scribner & Cole, 1981; Vygotsky, 1978). According to the socio-cultural point of view, language is a social event, and communications can appropriately be understood and explained within the connections of a specific situation. Vygotsky (1978) insisted that all utterances occur within social situations and an isolated speaker or text might not exist in any context of communication. In the same way, Finders (1997) proposed that speech acts are parts of literacy practices or events that eminently occur within a social event. As a result,
personal identity and social identities are constructed and reconstructed through various acts of communication with family, friendship, and school networks. In this sense, socioculturalists concluded that speech acts are represented as literacy events that help human beings understand and respond to multiple contexts and in turn, “examines how social roles are shaped and mediated by diverse literate practices” (Finders, 1997, p. 14).

Cultural understanding is also influenced by the ways of knowing, perceiving, believing, doing, and acting (Gee, 1996). As far as cultural and ethnic identities are acceptable and understandable to others, such identities are understood and constructed through the perceptions of others (Tatum, 1997). In essence, understandings of speakers’ identities from the viewpoint of listeners are significantly linked within relationships of the main components of identity such as sex, race, class, space (McCarthey & Moje, 2002). Vygotsky (1978) claimed that the mind of human beings develops through interacting with societies because they internalize social practices and knowledge about individuals and communities in the acts of speech. He emphasized that human beings’ internalization processes and beliefs about themselves make societies and worlds as the products of interactions with individuals’ identities and communities. Accordingly, in the situation of L2 speech, the ability to use language function effectively through different social groups and situations is as important as that of possessing phonological and linguistic knowledge since “what to say to whom, when, and in what circumstances” vary from “one linguistic and social group to another” (Freeman & Freeman, 2001, p. 61).
Ochs (1993) argued that identity is a “cover term for a range of social personae, including social statuses, roles, positions, relationships, and institutional and other relevant community identities one may attempt to claim or assign in the course of social life” (p. 288). By doing so, she claimed that individual’s social identities are jointly constructed by others while interacting with other individuals and so social identity is formulated by the ratification of interlocutors. With more specification, if individuals want to be identified, they should be ratified by interlocutors, and the process of linguistic practices should be continued for the person to maintain consistently that identity. From the viewpoint of L2 learners, they may choose L2 accent as an indicator of identities and such a socio-linguistic factor is significant to construct L2 learners’ socio-linguistic as well as socio-cultural identity.

For instance, Gatbonton et al. (2005) demonstrated that L2 learners estimated the accent of fellow learners as important criteria to indicate the peers’ degree of ethnic group affiliation (EGA). Ethnic group connotes L2 learners’ primary reference group that they were born into, and EGA signifies a sense of belonging to one’s ethnolinguistic group such as families and friends. This group is socially constructed because individuals grow up surrounded by various people and communities (Aboud & Skerry, 1984; Hamers & Blanc, 1992). These group identities shape the peers’ behavior by imposing behavioral norms that are difficult to ignore and it formulates group-engendered forces (GEF) (Gatbonton et al., 2005). The research participants of Gatbonton et al. (2005) described their peer’s L2 accent as an indicator of the fellow’s degree of ethnic affiliation, and
suggested relationship between the two aspects. More interestingly, the willingness to ascribe higher ethnic group affiliation ratings to the peers was observed to be much higher for the female listeners than male participants.

As a result, instrumental or integrative motivation to obtain native-like accent sometimes was surpassed by contact and threat to learners’ identity and more powerfully influence L2 pronunciation accuracy and fluency (Taylor, 1977). For example, Hinenoya and Gatnonton (2001) found that Japanese students adhered to language learning myths and cultural beliefs that only Japanese minds are appropriate for learning Japanese, and so they performed at a lower proficiency and displayed limited English use. Overall, although they needed to choose between the reward of competent L2 users and the cost of not marking identity, the group-engendered factors were a powerful trait to understand the acquisition of accuracy in L2 accent and pronunciation (Gatbonton et al., 2005). However, they found that L2 learners showed different behavioral sequences for the selection of a leader who represents their group identities. The majority of NNS selected the non-accented speakers as leaders in mono or bi-ethnic situations and they preferred less heavily accented speakers to moderately accented speakers. Conclusively, the identity negotiation of NNS was comprehensively influenced by L2 accent combined with socio-cultural contexts although their ethnic identity as well as linguistic identity was permanently challenged.

As Cerullo (1997) stated, identities comprising ethnicity, sex, and race are constructed and displayed by multiple identities, and so the consequences of ethnic group affiliated behaviors might reflect upon the complex issue of multiple identity aligned with
accent issues. Pavlenko and Blackledge (2004) postulated that identities are not fixed but negotiable entities, and language can play a role of manipulation of the composers in order to express and reap the best social as well as individual rewards from moment to moment. From this perspective, NNS teachers have to construct and reconstruct their identities as teaching professionals.

**Identity Negotiation between NS and NNS Teaching Professionals**

Generally, in the socio-cultural context of identity negotiation between NS and NNS teachers, NNS demonstrated conflicting identities as legitimate speakers and participants of language events (Golombek & Jordan, 2005). Teaching professionals of NNS in L2 pronunciation pedagogy were completely influenced by the native speaker myths. Fortunately, however, NNS self-motivated to find the ways to obtain appropriate identities through other means (Golombek & Jordan, 2005). The positive perceptions that both “a foreign accent is okay” and “accent variation is reasonable” encouraged them to admit and tolerate their own identities (Dauer, 2005).

Morita (2004) focused on how legitimate identities as L2 teaching professionals were negatively constructed. According to her, the process of identity negotiation that occurs in a unidirectional way from NS to NNS, completely produces inherent limitations. Such an identity negotiation also reduces the self-esteem and confidence of L2 users of English and does not play a role of endowing empowerment to the other (Morita, 2004). In this sense, Phillipson (1992) recommended that NNS should raise questions regarding NS norms. NNS should challenge why norms of inner-circle countries should be derived
for global criteria of SE. NNS need to present their indigenous identities and resource
culture to NS, while making efforts to improve fluency and accuracy of English
pronunciation through participating in mainstream English-speaking classrooms. NNS do
not need to achieve a native-like accent or pronunciation in order to be respected for their
differing views.

To some extent, in order to avoid unidirectional way of identity construction or
socialization and be comforted with the similar level of language learners, some NNS
may select joining a homogeneous group of NNS (Carrier, 2003). However, the reality of
EPI does not necessarily allow NNS to live in the comfort zone. Instead, the opportunities
of being selected as a professional when they compete with NS are fewer compared to
NS. Although such a system may provide chances for NNS to satisfy their needs with
raising their voices, this limited environment causes the lack of opportunities of
observing different interactional patterns of NS (Carrier, 2003). For the sake of
possessing competitive professional identities, NNS should turn their eyes to NS-based
contexts and be offered plenty of experiences to observe language and behavior that NS
have. If NNS find good and successful models of NS, they can utilize these resources and
internalize them. Therefore, in order to construct an idealistic identity in an academic
discourse, both groups of NNS and NS should interact and equally share heterogeneous
communities of learning (Lave & Wenger, 1991; Morita, 2004).

Morita (2004) recommended that NNS teacher trainees should have bidirectional
or multidirectional way of identity construction. For instance, even if their target
language learning takes place in the context of Western-based TESOL program, both NS
and NNS should be aware of the importance of equal opportunities of participation. In brief, NS students or professionals in the mainstream classes should not be perceived as dominant norm or target (Lave & Wenger, 1991; Morita, 2004). Morita (2004) was concerned that the identity construction of NNS in mainstream academic situations might involve a great deal of struggle over negotiating between their personal viewpoints, which arise from different degrees of expertise and experiences. Particularly, in an academic discourse when NNS interact with NS, they tend to internalize NS linguistic and cultural practices. This process is the identity negotiation and construction in the community of practice (COP). Based on these internalization and reconstruction of the identity, the newly constructed identities should be valued through respecting groups’ histories, values, and goals. In this way, NNS may invest time to obtain the same level of spoken and written competence, and the participants’ identities and the inherent differing viewpoints should be valued.

**Identity Construction of NNS and Developing Professionalism**

Developing *professionalism* also helps promote identities of NNS (Lippi-Green, 1997). This concept refers to the capacity to maintain both “the theories of language learning and teaching adhered to, as sufficient for understanding and analyzing language learning” and “seeing methods, techniques, and procedures followed in ELT” (Phillipson, 1992, p. 48). This term represents how NNS professionals possess appropriacy in using English with attainments of professional knowledge and attitudes in the interaction with
NS. Maintaining professionalism may be a critical factor that allows NNS to be respected as appropriate professionals regardless of the accented English they possess.

For example, Orth demonstrated how professionals take the place of bias toward NNS in mainstream academic community (cf. Lippi-Green, 1997, pp. 126-127). In the University of Michigan LSA magazine (spring 1993), native English undergraduate students assessed foreign accents of ITA. Although the outcome did not look positive to NNS and ITA, the basic rationale and attitude of the intuition provide an exemplary model of empowering NNS. The basic assumption toward international graduate student instructors was “they are brilliant scholars and experienced teachers who provide a wonderful opportunity for our students to have sustained contact with someone from another country” (p. 120). Such a rationale demonstrated that although a certain mainstream English speaking institution emphasizes accuracy and fluency of NNS English aligned with accent variables, knowledge and expertise of NNS are valued. The fundamental criteria to judge an individual’s abilities to be accepted as a professional do not necessarily mean accurate pronunciation but professionalism and diversity that the person can offer.

**The Summary of Socio-Cultural Factors: The Interrelational Aspects between NNS Identity, Socio-Linguistic, and Socio-Psychological Factors**

Numerous studies suggested that L2 pronunciation teaching cannot be isolated from the broader framework of socio-linguistic, socio-psychological, and socio-cultural factors (Aboud & Skerry, 1984; Bradlow et al., 1997; Derwing, Munro, & Wiebe, 1998;
Obtaining communicative competence is associated with representing socio-psychological variables such as motivation, attitudes, and self-perception instruction. Based on socio-psychological factors, L2 learners participate in L2 speech acts, and construct or reconstruct their identities as L2 users. Their identities are also ratified and consolidated by the interlocutors, and such an interactional process of language events help NNS negotiate their identities and grow as legitimate participants of language events. In the contexts of interactive and heterogeneous communities of language events and being respected as professionals, NNS may successfully construct positive identities as communication participants and teachers.

As Pavlenko and Lantolf (2000) insisted, English pronunciation acquisition should be viewed as a process in which the users participate in a community of practices in view of learning a new language. In other words, the roles of social variables (e.g., learners’ own reference groups, mutual understandings between language users about their socio-cultural identities, socio-political and socio-linguistic identity construction, etc.) need to make the participation of various communities possible to obtain intelligible speech (Gatbonton et al., 2005). In this way, L2 learners can share and build up positive identities as participants of community of English acquisition. NNS groups should value their indigenous identities and not try to assimilate to the other group’s identity to be accepted as a participant of NS community. Instead, NNS need to promote the ability of providing alternative discourse such as multicompetence (Cook, 1992), and so they can obtain legitimacy as L2 users and owners (Golombek & Jordan, 2005). Therefore, active
participation in showing and telling their own interests and needs can also improve the proliferation of bidirectional or multidirectional cultural interactions in the EPI.

In the process of obtaining legitimate identities as L2 users or speakers, what are the roles of interlocutors or listeners who participate in the speech acts? If the listeners participate in a communication that consists of either auditory input or audio-visual input, how do they react to the speakers? Although many studies claimed the importance of NNS participation in the acts of communication (Carrier, 2003; Lave & Wenger, 1991; Morita, 2004) they have less explored the roles or responses of NS who listen to the speech of NNS. For example, few studies have explored the differences between how listeners’ react one they have visual cues (e.g., ethnic background and SCI) as opposed to one they do not. Fewer studies have explained whether the listeners use visual cues in order to evaluate NNS accent and identity.

Constructing positive identity as NNS professionals is significantly influenced by the ratification of the listeners because listeners are responsible for the ratification of the speakers’ identity (Ochs, 1993). However, few studies have explored the role of auditory cues or audio-visual cues from the view point of listeners in the process of evaluating the accent of NNS. In order to examine whether the listeners use auditory cues or audio-visual cues to evaluate the accent or identity of the speakers, the reaction of the listeners is aligned with differential input (e.g., auditory or audio-visual input in speech acts) deserves to be studied. Therefore, the following section briefly portrays the impact of visualized input in the process of perceiving information and constructing knowledge. This section can provide fundamental resource for addressing the question: when the
listeners receive either auditory or audio-visual input, do their responses to the accentedness of the speakers differ?

The Impact of Visualized Input

The selection of using visualization as a method to engage participants has been supported by many studies. For instance, Shortridge and Emmert (2002) demonstrated the impact of visual representation. According to this study, visualized information increased a person’s ability to obtain and learn information in text-based environments. They included certain types of visualization and combined visualized texts in web-based distance courses. As a result, the students were more engaged in the learning process, and learning outcomes were positively influenced (Shortridge & Emmert, 2002). Similarly, in 1971, Paivio postulated a Dual Coding Theory of memory and cognition. This theory focused on the function of both visual and verbal input and postulated that “if some piece of information is coded both visually and verbally, the probability of retrieval is doubled” (p. 113). This theory hypothesized that human beings encode information to long-term memory both visually and verbally. Interestingly, the verbal codes are hung on nonverbal pegs in memory and imagery or visualized cues are the effective variable in the recall process of verbal or written information.

Winn and Snyder (1996) focused on the complex mechanism of visual metaphors or envisioning processes in order for individuals to solve problems or learn new information. While observing the complicated link between visual imagery and the
creation of mental process and mental representation, they tried to argue that human
taking “uses various symbol systems as tools” (p. 117) to obtain new information and
knowledge. Evans, Conol, and Youngs (2001) asserted “images are vital in our
perception of the world: sight is primary among our senses, visual images have an impact
on information value that is unparallel” (p.190). They defined that the basic
characteristics of image are essentially deceptive and have different types of ‘images’ or
pictorial/graphical representations.

Rieber (1994) supported the impact of visualized cues on the affective as well as
cognitive domains. In essence, motivational and cosmetic graphics had an influence on
the affective domain, whereas presentation and practice graphics had an impact on the
cognitive domains. Specifically, effective practice graphics helped students in higher-
level cognitive process to integrate new information into prior knowledge. In addition,
much research demonstrated that recall and memory are involved when information is
presented visually, or provided with the use of images (Faraday & Sutcliffe, 1997; Paivio,
1971, 1975; Paivio, Rogers, & Smythe, 1968; Standing, 1973; Standing, Conezio, &
Haber, 1970).

Accordingly, upon considering that many studies supported the impact of
visualized input on the humans’ mental process, this study also agrees that visual input
may have an impact on the listeners’ perception of the speakers and may be represented
through evaluation. In essence, visualized input may reveal the perception and evaluation
differences between the audio group and video group that would receive different
treatments. While the audio group is receiving aural input, the video group is receiving
visualized input that is represented by images and motions. Therefore, the audio group is expected to react to the speakers based on the linguistic cues of the speakers, and the “result of unconscious, individual modifications previously learned” (Mays, 1982, p. 52) while the video group is expected to respond to the speakers based on the combination of both visualized and linguistic cues. The different outcomes between audio and video groups may reveal how and to what extent visualized input may have an impact on the inter-group differences.

Therefore, based on the understanding of the various factors that emerge in NS-NNS communication (e.g., socio-political, biological, socio-psychological, socio-linguistic, and socio-cultural), this study aims to examine listener responses using both auditory and audio-visual input. The chapter III briefly describes research design, participants, research sites and data collection process.
CHAPTER 3

METHODS

The current study is a quantitative study using a correlational design that aims to explain or predict the variability of the two dependent variables. When the effects of the rival independent variables are removed, the two dependent variables can be predicted by the information from the two independent variables. The participants were recruited NS as listener participants and three NNS and one NS as speaker participants at a large Midwestern University in the United States. A Listener Information Questionnaire (LIQ) and Listener Perception Questionnaire (LPQ) were used as outcome measures, and regression analysis was used as a data analysis tool.

Research Design

The present study is a correlational study with the purpose of predicting listeners’ perceptions of (1) accentedness and (2) comprehensibility. The listeners either listened to
three speech samples (referred to as audio groups) or watched three video samples (referred to as video group) recorded from three Non-Native speakers of English (NNS). The listeners also either listened to one audio sample or watched one video sample recorded from one Native Speaker (NS) of American English. They were native speakers of American English and were operationally defined as Native Listeners (NL) for this study. This design was used to determine if NL participants who were divided into audio and video groups exhibit different perceptions of accentedness and comprehensibility of the speech samples. The perceptions of accentedness and comprehensibility of NL were defined as dependent variables and predicted by two main independent variables: (1) the Socio-Cultural Information of the speakers (SCI) and (2) the Degree of Accentedness of the speakers (DA).

Rival variables for this study were listeners’ (1) academic major (major), (2) length of time in the program (length of time), (3) age, (4) sex, (5) experiences of being exposed to the foreign accented speech (exposure), and (6) interaction with a foreign accented speaker (interaction). These variables were measured by self-reporting on the listener information questionnaire (LIQ) and selected to control possible contaminating variables. These variables were the age range of the participants (21-55 years), different levels of education (undergraduate/graduate), and the fact that NL were restricted to the White Caucasian ethnic background. However, sex and exposure to foreign accented speech variables could not be controlled because the participants had volunteered, and the researcher could not be assured whether the same portion of female and male participants was recruited.
Miller (2001) characterized this study as the design attempting to know an earlier set of data (listener factors, independent variables) to predict a later set of data (listeners’ perception of accentedness and comprehensibility, dependent variable). In summary, the current design attempts to predict how two dependent variables (accentedness and comprehensibility) are predicted by two independent variables (SCI and DA) as well as the two rival variables (sex and exposure to the foreign accented speech). The model of the relationship between the two main/rival independent variables and two dependent variables is illustrated in Figure 3.1 and 3.2.

![Figure 3.1. The Predicting Factors for Listeners’ Perception of Accentedness](image-url)
The Research Site and Participants

The target population for the study included native listeners (or speakers) of English (NL) who agreed to participate in this study. The participants were studying at the undergraduate and graduate level at a large mid-western university in the U.S.A. The ethnic background of the listener participants was restricted to White Caucasian to make the listener characteristic of ethnicity a constant. The listener participants did not know the speakers personally, and this eliminated any potential error from familiarity with the speakers.
Research Site and Sampling

The research site was selected because of convenience and around 4% (1880) of international students from 89 different countries were enrolled. The student participation consisted of approximately 35,000 full-time undergraduate students and approximately 12,000 graduate and professional students (Kachi, 2004). This number of international students helped the researcher presume that NL of this study might interact with people who speak English with foreign accentedness. Due to the large size of university student population, the researcher was limited in performing a probability sampling process. Therefore, the participants were individually recruited on a voluntary basis; they met the researcher at a specific time and place, and the administration process took around 15 to 20 minutes. Because of the large size of the university and for convenience purposes, the data collecting locations were limited to the College of Education and Human Ecology (CEHE) and the College of Food, Agriculture, and Environmental Science (FAES), both located in, Columbus, Ohio. The subjects were recruited to voluntarily participate in this study and were a convenience sample (McCall, 2001).

The appropriate sample size was calculated using two criteria. The first one was calculated by the criteria that Hair et al. (1998) suggested. According to them, in order to secure the generalizability of results, 15-20 observations per independent variable are recommended. Even if two main and six rival independent variables were used to conduct
this study, this study would focus on two main (SCI and DA) and two rival variables (exposure and sex). As a result, the minimum required sample size was 60 subjects.

The second criterion for selecting appropriate sample size was decided by examining statistical power. The power is defined as Type II error (1- β) and indicates “informally, power is the chance that, if there is a real effect, our experiment will find it. More formally, power is the probability we will reject the null hypothesis if it is false” (Cumming & Finch, 2001, p. 558). Statistical power is related to Type I error that is addressed as α. This error indicates the probability of rejecting the null-hypothesis when it is true.

According to Borenstein, Rothstein, and Cohen (1997), the sample size of 50 with four independent variables can detect a large effect size $R^2 = 26\%$ in the linear regression analysis. With a power of .90 at a significance level ($\alpha$) = .05, the sample size 110 will detect $R^2 = 13\%$ with a power of .90 with other conditions remaining constant. On the basis of these two criteria, the sample size of 60 was selected for this study. This sample size was selected to detect a large effect size $R^2 = .26$ with a power of .90 ($\alpha = .05$). Therefore, at the 95% of confidence interval, the recommended sample size for this study was estimated as 60.

The undergraduate students and graduate students who were taking any course offered by CEHE or one of two courses (Agricultural Education 885/888) offered by FAES at OSU, winter, 2007 were defined as native listener groups (NL) for this study. The four professors who allowed the researcher to conduct this study permitted the investigator to solicit research participation in their classrooms. On the basis of calculated
sample size, the total of 60 NL students who had taken some courses from these professors were asked to participate. Without regard to grade levels, 60 White Caucasian NL participants, who were born and educated in English-speaking countries, were selected. With consideration to the policies of this university for admitting international students, NL for this study were assumed to have had opportunities to interact with NNS students and be exposed to the different accents of NNS. Their participation was appreciated and they were given a gift card as a reward.

Four Speaker Participants

The speaker participants were composed of three NNS and one NS. Two criteria were used to select the speaker participants. The first criterion for selecting non-native speaker participants was related to their ages when they began to learn English in an English speaking country or immersion setting. As literature concerned with L2 phonological research portrayed, this study hypothesized that the age of obtaining a second language would have a significant influence on attaining a native-level of performance. Therefore, the two speakers who represent MA and LA were selected by the criteria that they came to an English-speaking country after the age of 15, and they were referred to as “late starters of English.” Their commonality was that they had been exposed to immersion settings after the age of 15.

In addition, underlying assumption of this study was involved with an idea that early starters of L2, who experienced relatively early exposure to English speaking
environments, might perform better in producing English pronunciation. Therefore, the non-native speaker of English who represented FNA was selected by the criterion that she came to an English speaking country before the age of 15 and was referred to as an “early starter.” The early starter should have an experience of being exposed to English-speaking countries prior to the age of 15 and reflect an experience of Early Childhood English Education (ECEE) in the context of using English as a Second Language (ESL) setting. Therefore, for this study, the early starter was defined as the speaker participant who began learning English prior to the age of 15 in the ESL context.

On the other hand, “late starters” were constrained to people who had no experiences of learning English prior to the age 15 in the ESL context. In addition to the age factor, the experiences of late starters were restricted to outer circle countries, which do not speak English for the purpose of communication. For instance, their experiences limited the instruction of English prior to the age of 15 through some formal instructional methods (e.g., phonics, chants, songs, imitation of phonological systems, and sentence repetition drills) from their own countries (e.g., Korea and Taiwan). Although they learned English before the age of 15, the context that was created for learning English uses English as a Foreign Language (EFL). This context did not reflect a typical ESL context of ECEE for early starters.

The second criterion for selecting the speaker participants was related to their degree of accentedness because this study hypothesized that the speakers’ degree of accentedness might affect differences in performing tasks. The subjects were selected by the criteria defined by the researcher and the panel of experts reviewed the criteria. The
differences regarding degree of accentedness among the speakers were expected to vary from one another and become a significant factor to select the participants. Their performances correlated with differential accuracy in language production, and offered the listener participants the effects of attention, formality (Sato, 1985; Tarone, 1987), attitudes, and perceptions. Accordingly, the researcher self-selected the four speakers and tape-recorded their voices, who demonstrated moderate, low, foreign-non, and native-non accented English. The panel of experts who teach at English as a Second Language Program (e.g., Spoken English Program and Composition Program) and Foreign and Second Language Education at OSU assessed the degree of accentedness of the speaker participants. This process was called inter-reliability check and the mutual agreement between the researcher and the panel of experts was converted into scores. The inter-reliability coefficients were as follows: MA (.90), LA (.60), FNA (.90), and NNA (.95). The obtained score of each speech sample was administered for the listener participants.

With respect to the speakers, the various accents overtly or covertly influenced the dependent relationship with socio-psychological/socio-cultural awareness of listeners and played a significant role as a variable in the outcome. Generally, the speaker subjects were deliberately selected based on whether or not they were capable of surpassing (e.g., both non-accented and low-accented speaker) and not capable of surpassing (e.g., moderately-accented speaker) maturational constraints predicted by the critical period hypothesis (CPH). The inclusion of both experiences of ECEE and degree of accentedness of the speaker participants attempted to probe the correlational aspects between characteristics of the speakers and judgments of listeners involved in
socio-psychologically as well as socio-culturally affiliated variables. However, these chosen four speakers might contain the degree of accents preferred by the researcher although inter-rater reliability of the panel of experts ensured the appropriacy of the degree of accentedness of speech samples.

The first speaker participant who was addressed as Y (speaker #1), a 30-year-old female speaker, was selected as to represent a Moderately-Accented speaker (MA). She is a native Taiwanese learner of English, who began to learn English through a formal school setting after the age of 15. Prior to the age of 15, she did not learn English through private instructional methods such as going to a private English cram school. However, these methods are now very popular in Taiwan. She had no experience living in an English-speaking country before 2001, the year that she came to the U.S.A in order to attain a master’s degree. After obtaining a MA degree from an education department at a mid-western university, she is now working as a play therapist in children’s’ hospital.

The second participant was a 28 year-old male speaker and is referred to as J (speaker #2). He was selected to represent a Native-Non-Accented speaker (NNA) and compare to the degree of accentedness of other non-native speakers. He was born in Louisiana and received education in Louisiana until he graduated from university. He began to learn the reading English alphabet at the age of 4. He began to learn writing alphabet and vocabulary at the age of 5. He completed his master’s degree at a mid-western university and is pursuing a doctoral degree in social science at the same university. Although he speaks with a native accent, he does not perceive that he has a southern accent.
The third speaker was 30-year-old Korean female speaker and was addressed as H (speaker #3). She was selected to present a Foreign-Non-Accented speaker (FNA). She was born in Korea and had come to the U.S. at the age of 2. She had an experience of ECEE prior to the age of 15 in the U.S.A. She learned English through learning alphabet, listening to chants and songs, imitating English phonological systems, and watching TV at home. She went to preschool at the age of 5, and began to study English in formal instructional settings. She returned to Korea at the age of 9 and did not continue studying English until she went to a secondary school (at the age of 13). She has studied English for approximately 22 years and completed her bachelor’s and master’s degree at a university in Korea. She came to the U.S.A. in 2003 to pursue a doctoral degree in the education program at a mid-western university while teaching some courses for undergraduate and graduate students at the same university.

The fourth speaker participant, who was referred to as D (speaker #4), was selected to represent a Low-Accented speaker (LA). He is 26-year-old male, and immigrated to the U.S.A at the age of 16. His experiences of ECEE in Korea comprised imitation of phonological systems, sentence repetition drills, and watching Disney movies. Korea is a country that teaches English as a foreign language (EFL), and it does not speak English for the purpose of communication. However, he was self-motivated to speak and imitate the sounds, sentences, and colloquial expressions. Prior to the age of 15, he had no experience of traveling or living in an English speaking country. His immigration at the age of 16 made him qualified to become a late starter, and enabled him to represent a low-accented speaker for this study. He majored in computer science and electrical
engineering at a mid-western university and now works at a prestigious company in the U.S.A.

The ethical concerns and incentives for the four speaker participants were considered based on the guideline of the Office of Responsible Research Practices (ORRP) published by the Ohio State University (The specific procedure is be explained in the section of ethical concerns and incentives below). The Behavioral and Social Sciences Institutional Review Board (IRB) reviewed the procedure of collecting data with the speaker participants during the month of January, 2007. The IRB approval was received from the institute, with the following protocol number: 2007 E 0043.

Independent Variables

This study focused on two main independent variables (SCI and DA) and two rival independent variables. These variables were selected to predict dependent variables (accentedness and comprehensibility) based on the complex interaction between independent and dependent variables.

Main Independent Variables

The selected main independent variables were socio-cultural information of the speakers (SCI) and degree of accentedness of the speakers (DA). The definition and measuring process are defined as follows.
Socio-Cultural Information (SCI)

The SCI variables for the speakers were obtained by interview sessions. The information of the speakers include: (1) ethnic background, (2) nationality, (3) academic background, (4) years of second language learning experience (L2), and (5) experiences of being exposed to an English speaking country (referred to as immersion setting). The SCI of the speakers that would not be disclosed or disclosed to the listeners were carried by the two treatments (I & II) for both audio and video group. The treatment I was implemented to the audio-group that did not be provided with the SCI of the speakers, and this treatment was addressed as Non-SCI. The treatment I (Non-SCI) was defined as a constant because all members in the audio group did not receive the SCI of the speakers.

The treatment II was providing the video group listeners with SCI of the speakers, and this was addressed as SCI. Using a video clip and a written description of the speakers, the video group participants were provided with the SCI. Because the video group received the same treatment, this variable was treated as a constant. In brief, the audio group received the treatment of Non-SCI with an audio input and the video group received the treatment of SCI with video input and a written description of the speakers.

Degree of Accentedness of Speakers (DA)

The degree of accentedness of speakers (DA) was identified with the degree of foreign or native accentedness and consists of four levels. The four levels of DA variable were assigned as: (1) Moderate Accent (MA), (2) Low Accent (LA), (3) Foreign Non
Accent (FNA), and (4) Native Non Accent. The four speaker participants who demonstrated moderate accent (level 1), low accent (level 2), foreign non accent, and native non accent (level 4), were selected by the researcher. This variable was treated as an ordinal data and obtained by the mutual agreement between the researcher and the panels of experts.

For instance, the researcher self-selected and tape-recorded the four speakers’ voices and asked the panel of experts to assess the degree of accentedness. The panel of experts ensured the inter-rater reliability to select the speaker participants. The minimum of 60% of the panel of experts should agree that each speaker, who was assigned as MA, LA, FNA, or NNA, received an appropriate title to represent their assigned degree of accentedness. Based on this criterion, the listener participants (NL) of this study self-selected the levels of the independent variable. The order of levels that the listeners were asked to self-select were followed by the number of the speakers that were assigned by the researcher (e.g., speaker #1-MA, speaker #2-NNA, speaker #3-FNA, speaker #4-LA). The levels of the speakers were measured by the perceptions of the listeners that were marked on Listener Perception Questionnaire (LPQ).

**Outcome Measures: LPQ and LIQ**

The two dependent variables (listeners’ perception of accentedness and comprehensibility) were measured by LPQ that was developed by the researcher. An English-written LPQ for the listener participants was validated by the consultation with a
panel of experts, who provided feedback for this study. The instruments of both the LPQ and the LIQ were written in English, and the content validity of them were established by a panel of experts. Two of these experts were professors currently teaching in CEHE and were experts in Second Language Acquisition (SLA). One professor teaching in FAES was an expert in developing and designing instruments and methods. Moreover, two students who completed Foreign and Second language education (a Korean Ph. D. candidate and a Taiwanese Ph. D. candidate in CEHE at the same university) were also experts in the SLA studies. They provided feedback on the two versions (LPQ and LIQ) of the instruments. Feedback on the instruments took care of content validity. A field test that was conducted at the same university during the month of January 2007, with one moderately accented Korean speaker and 15 native listener participants, addressed face validity. Suitability (readability and clarity) of the instruments was ensured by the field test.

**Listener Perception Questionnaire (LPQ)**

A way to measure the outcomes and two dependent variables of this study was to implement an instrument that was entitled LPQ. The LPQ consisted of two subcategories (#1-#6, #7-#12) designed for the listener participants to respond to each of the four DA levels in separate speaking samples. The first subcategory (#1-#6) was created to predict the “accents” variable (hereafter: referred to as Y1). The audio group participants self-selected the level of the DA (hereafter: referred to as X2) with the conditions of
listening-only (referred to as Non-SCI). The video group participants also self-selected the level of the DA with the conditions of listening/watching (referred to as SCI or X1). The first category was designed to detect the predicting factors for the listeners’ perceptions of accentedness (nativeness) based on the treatment of I and II (Non-SCI/SCI).

The second subcategory (#7-#12) of LPQ attempted to seek predictors of “comprehensibility” variable (hereafter: referred to as Y2). The perceptions of comprehensibility were measured by obtaining the perceptions of the audio and video groups with respect to the ease to understand and comprehend the speech. The perceptions of the degree of understanding and comprehensibility were self-reported by the initial perceptions of the audio and video groups. The second category was designed to detect the predicting factors for the listeners’ perceptions of comprehensibility based on the treatment of I and II (Non-SCI/SCI).

The two dependent variables (the perceptions of accentedness and comprehensibility of the listeners) were interval data with a 10 point scale points between the bipolar adjectives. The number of intervals was selected to maximize the variability of individual scores (Miller, 2001; Kachi). For instance, Derwing and Munro (1997) used a nine-point Likert-type scale and reported that the participants reliably responded to nine levels. For this study, the even number of the 10-point scale would compel listeners to select either side, positive or negative and not select neutral. While the NL would self-report their perceptions of accentedness through the LPQ, this scale would effectively measure the affective domain regarding perceptions. The two levels of the independent
variable (Non-SCI and SCI) were implemented for the listener participants to predict these two dependent variables.

The reliability check for the LPQ and LIQ that was used for measuring the two dependent variables consisted of internal consistency. Internal consistency of the LPQ and LIQ was calculated by two separate Cronbach’s alpha (.87 and .91, respectively) based on the results of the pilot study data. Cronbach’s alpha was used for this study since it requires only a single administration of an instrument and scales were summated (Miller, 2003) and can be computed for any multiple-item instrument (Carmines & Zeller, 1979). The data collection for the pilot study commenced on January 27, 2007 and ended on February 7, 2007. The number of participants for the pilot study was 15 because the minimum number of 15-20 would ensure reliability of a pilot study (Miller, 2003). The participants of the pilot study represented the same characteristics with the prospective research participants. They were considered as preliminary participants for this study, and, hence, the ethical concerns and incentives were provided for them as the actual research participants were provided. They were recruited by the researcher based on their availability. Hair, Anderson, Tatham, and Black (1998) stated that the lower limit of acceptability of Cronbach’s alpha is .70 but .60 is also an acceptable level with a small number of items as Miller (2003) agreed. Therefore, based on the results of internal consistency of the LPQ and LIQ (.87 and .91), the acceptable level of two separate Cronbach’s alpha were selected.

The inter-rater reliability of the speakers’ accentedness (independent variable) was the result of the series of consultation with a panel of experts. This reliability
calculated the extent to which two or more raters or persons agree on their observations or ratings of phenomenon (Miller, 2003). For this study, the panel of experts marked on the statement of inter-rater reliability check forms (Please, refer to the Appendix E & F). The three statements of the speech samples that were indicated by the panel of experts were selected to define two exclusive categories. The first category indicated the degree of accentedness whether the speakers demonstrated (1) moderately-accented English, (2) low-accented English, and (3) non-accented-English, respectively. The second category addressed whether the speaker demonstrated foreign accented English or native-accented English. Because the agreement rate among the panel of experts was higher than .60, the speakers represented the accentedness as they were assigned as MA, LA, FNA, and NNA. In short, although the concept was cited from related literature, the degree of speakers’ accent (main independent variable) for this study was arbitrary as defined by the experts in this area.

To measure listeners’ perception of accentedness (Y1) and comprehensibility (Y2), LPQ was designed as semantic differential scales with each six pairs of bipolar adjectives and nouns for measuring each dependent variable. A total twelve items (6 for measuring accents and another 6 for measuring comprehensibility) were selected based on Miller (2001)’s recommendation. He suggested that 8 or fewer items are appropriate for this scale because “respondents seem to lose their frame of reference to the concept when there are more than this” (p. 95). Therefore, the LPQ had a total of twelve pairs of opposite adjectives that were selected from existing instruments (7), and five items that were created by the researcher.
More specifically, the three existing items for measuring accents were: bad pronunciation---good pronunciation (Giles, Williams, & MacKie, 1995), irritating accents---pleasing accents (Giles et al., 1995, modified), and with strong accents---with week (or no) accents (Chiba et al., 1995; Derwing and Munro, 1995). Another three items created by the researcher were: unpleasant accents---pleasant accents, uncomfortable accents---comfortable accents, and accents of non-native speaker of English---accents of native speaker of English. Kachi (2004) also used the three existing items to measure Japanese accents and demonstrated reliability (Cronbach’s alphas between .67 and .80) and validity of the instrument.

In addition, the two existing items for measuring comprehensibility were: difficult to understand---easy to understand (Derwing and Munro, 1997; Ohama et al., 2000) and unclear content---clear content (Ohama, Gotay, Pagano, Boles, & Craven, 2000). Newly-created four items added by the researcher were, misunderstandable---understandable, unintelligible---intelligible, ambiguous---unambiguous, and imperceptible---perceptible. Kachi (2004) also selected the two existing items to measure intelligibility of Japanese English and demonstrated reliability (Cronbach’s alphas between .67 and .80) and validity of the instrument.

Listener Information Questionnaire (LIQ)

LIQ was developed to measure the six rival independent variables that were referred to as listener affiliated socio-cultural factors. The selected rival independent
variables were: major, length of time, age, sex, exposure, and interaction. Overall, before completing the implementation of the LPQ, NL participants were required to complete LIQ that measures the six rival independent variables.

**Academic Major at the Undergraduate and Graduate Program (major)**

The majors of the listener participants that were treated as nominal data were self-reported on LIQ. Each category of major was assigned as an exclusive nominal category. For example, Agricultural Education was assigned as #1, and Allied Medicine was assigned as #2, etc. However, some respondents answered specialized majors while others answered major programs or sections (e.g., Foreign and Second Language Education is a specialized major within a section of Language, Literacy, and Culture). Accordingly, the specialized major such as Foreign and Second Language Education was treated as an exclusive nominal category to Language, Literacy, and Culture. The term “major” was categorized and followed by the initial responses of the participants. For the regression analysis, the major categories were two dummy coded such as “language (1) and others (0)”.

**Length of Time in the Program (length of time)**

The term “years” indicates the whole period of time that the participants have been enrolled in and pursuing their degrees. The time period that were self-reported by the participants are treated as interval.
**Age of the Listeners (age)**

The age ranges that fall in between 21-54 was treated as interval data and was self-reported on LIQ. The age ranges and assigned numbers are as follows: 21-25 (#1), 26-30 (#2), 31-35 (#3), 36-40 (#4), 41-45 (#5), 46-50 (#6), and 51-55 (#7).

**Sex of the Listeners (sex)**

Sex indicates the male-female dichotomy and is treated as dichotomous nominal data (male-0 and female-1). This variable was self-reported by the listeners on LIQ. Sex variable is an *attribute* that cannot be manipulated by the researcher (Miller, 2001).

**Experiences of Being Exposed to the Foreign accented Speech (exposure)**

The participants were asked to complete the section “have you ever been abroad?” Based on the experience of having been to a foreign country (No-#0 and Yes-#1), the obtained data was treated as dichotomous nominal variable. The participants also self-reported the whole period of days staying in foreign countries during the past year on the LIQ. The obtained data was treated as interval.

**Interaction with a Foreign Accented Speaker (interaction)**

The participants were asked to answer the question, “during the past year, have you talked to anyone who spoke with a foreign accent?” Their answer (NO-#0 and Yes-#1) were treated as dichotomous nominal. Based on the results, they were required to
complete the section, “during the past year, on average, how often did you talk to someone who spoke with a foreign accent?” This question purported to report an average amount of time period that the listener participants listened to foreign accented speech other than native-speaking English during the past year. The obtained data was treated as interval. In summary, the scales of measurement and the correlations that were used to describe the association between two main independent variables/ six rival independent variables and two dependent variables are illustrated in table 3.1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Scale</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>Y1</th>
<th>Y2</th>
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</thead>
<tbody>
<tr>
<td>X1: Speakers’ Socio-Cultural Information (SCI)</td>
<td>Nominal</td>
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<td>X2: Listeners’ major</td>
<td>Nominal</td>
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<td>X3: Listeners’ length of time</td>
<td>Interval</td>
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<td>X4: Listeners’ age</td>
<td>Interval</td>
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<td>X5: Listeners’ sex</td>
<td>Nominal</td>
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<td>X6: Listeners’ exposure</td>
<td>Interval</td>
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<td>X7: Listeners’ interaction</td>
<td>Interval</td>
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<tr>
<td>Y1: Listeners’ perception of accentedness</td>
<td>Interval</td>
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<td>Y2: Listeners’ perception of comprehensibility</td>
<td>Interval</td>
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P-Pearson Product-Moment Correlation Coefficient
rpb:Point-biserial Correlation Coefficient

Table 3.1: The Scales of Measurement and Descriptive Statistics for the Data Analysis
Reading Material and Audio/Video taping for Speaker Participants

The data gathering technique for the speaker participants involves qualitative approaches such as read-aloud protocol, audiotaping, and videotaping. Read-aloud protocol was used as a method of revealing the degree of accentedness of the speakers. Two different types of textual reading passages were used as a read-aloud-protocol, and the process of reading of the materials was video-taped and audio-taped. In particular, the four speaker participants were asked to complete both audio-tape-recording and videotape-recording. The audio-tape-recording was used as a treatment of Non-SCI and videotape-recording was administered as SCI for NL participants.

Criteria for Selecting Reading Materials

The reading materials were excerpted from the webpage of the “Alumni Grants for Graduate Research and Scholarship” published by Graduate School of the Ohio State University (http://www.gradsch.ohio-state.edu/Content.aspx?Content=55&itemid=2). The criteria for selecting this material were followed by the four reasons. First, such a type of the text was expected to provide meaningful resources for the listeners because the participants are all graduate students. Second, for reducing the cognitive load of the narrative task, the familiarity and easy understanding of the content is highly considered for the selection of reading materials. The read aloud-items were intentionally selected by the criteria of performing an easy task of NL. Third, these items were considered not to limit the naturalistic production of lexical, syntactic, and pragmatic fluency as well as
other suprasegmental features (Moyer, 1999). Finally, the nature of this text is monologic and manipulable rather than interactive. For these reasons, the set of read-aloud material consisted of 11-15 sentences that narrative lasted approximately 90 seconds. The consultation with a panel of experts ensured the content validity of the reading material for this study.

**Ethical Concerns and Incentives**

The personal information regarding speaker participants remained confidential, and the speaker participants were informed of ethical concerns of the researcher before they make a decision of the participation. The ethical concerns included the respects for the persons, beneficence and justice as the Belmont Report stated (1974). The participants were informed of the procedure, objectives, and the potential benefits of the study. The potential risks of the study were not expected to occur. The rights of participants to withdraw from the study with no disadvantage were informed before they started the interview and audio-video recording. After the task for the speaker participants was completed, their participation was appreciated and $25 cash was given for compensation. Every speaker participant was pleased to participate in the study, and the researcher did not have any problem of withdrawal. The same ethical concerns were applied for the listeners but they received $5-valued gift certificate that represents researcher’s gratitude. The Office of Responsible Research Practices (ORRP) at the Ohio State University reviewed the proposal of this study and approval was received from the
Behavioral and Social Sciences Institutional Review Board (IRB), with the protocol number: 2007 E 0043.

**Data Gathering Procedure**

The data gathering procedure consisted of the speaker and listener participants. The data gathering technique for the speaker participants were audio/video taping and a read-aloud protocol. Based on the audio/video-taped data, the listener participants were asked to complete the statements on the LPQ and LIQ.

**Tasks for Speaker Participants**

The main process of gathering data for the speaker participants was audiotaping and videotaping of the reading process. Through e-mail correspondence and phone calls, the three participants were volunteering for this study and made an appointment to be tape-recorded during the month of January, 2007. The researcher notified the speaker participants in advance about the process, purposes, anticipated benefits and overall information of the study. They were informed that no possible harms or risks would occur, for example, psychological, emotional, and physical pains. They were informed that social, economic, and legal damage would not be caused by the participation in this study. The speaker participants were explained that two types of data (audio/video taping) would let their identity revealed directly only in the research environment. They
were notified that the data would keep confidential and not be used for any other purposes except for this study. When the speaker participants signed the consent form, they consented or objected using real names. The decision of using anonymous name was respected and highly valued. They were informed of their rights to withdraw or not to agree to be audio/video taped during any period of audio/video taping sessions.

Before conducting audio/videotaping, consent forms were provided to the speaker participants seeking confirmation in audio-recording and video-recording of the speech samples. The consent form included permission for another recording in case of lost data. Their personal information was briefly obtained through an interview session. The interview was recorded for the transcription purposes. The speakers’ audiotaping was recorded using an MP3 digital recorder (MPC841 FCCE) made in Coby Electronics USA, and the videotaping was recorded on a Kodak Easy Share dual lens digital camera (V 570). This obtained data was transferred to a FUJITSU LifeBook laptop computer (N6100). For the purpose of ensuring security and confidentiality of the data, these equipments were stored by the researcher privately from the starting date to the last date of the data collection. The data was discarded after this study ends (approximately 6 months later). The researcher did not share this data with any other personnel without having permission of the research participants in order to protect the confidentiality of identifiable data.
Conditions of Testing and Tasks for Listener Participants

The data gathering procedure commenced on January 25, 2007 and ended on February 27, 2007. This procedure for the listener participants was performed using the LPQ and LIQ. Four professors who assisted this study as mediators were informed of the process of administering the instrument using the audio and video-recorded clips. The facility and availability of the classrooms was checked one week before the data collection date, and the researcher visited the classrooms to create a rapport with the research participants. The conditions of the classrooms were quite and comfortable to focus on listening and watching audio/video clips.

During the classroom announcement, the researcher notified the participants that participation was contingent upon personal availability and not by compulsory or obligatory purposes. The researcher provided a sign-up sheet to check their available dates and times. The participants who come to the class 20 minutes earlier were addressed as before-class participants and those who could participate in the study after class were addressed as after-class participants. The sign-up sheet offered specific dates and time-lines for the convenience of the participants. The student volunteers who enrolled in CEHE and FAES received one e-mails reminding participation one or two days before the participation session.

During actual session, the before/after-class participants were provided with consent forms, and they self reported hearing-problems or any physical impairment that may affect the data. A total of 120 instruments (60 LPQ and 60 LIQ respectively) were
distributed to before/after-class participants in a series of each session. These participants were randomly assigned as audio and video groups and 1-15 listeners participated in a session at a time and the number of participants varied from one session another. The audio and video groups were both exclusive categories and a participant assigned to the audio group cannot join the video group, and vice versa.

The tasks for both the audio and video groups differed from each other. The first group that was assigned as audio group NL was asked to perform two tasks by the researcher. The first task was to complete the LIQ before completing the LPQ. The LIQ contains 9 categories that ask demographic and personal information of the listener participants. Approximately, 2-3 minutes were given to complete this form. The second task was to complete the LPQ while they listened to four audio-taped speech samples. The listener participants were required to listen to four of each speech samples. The samples contain 15 sentences that approximately take 90 seconds to read. These were recorded and saved as audio files in the researcher’s laptop computer. The audio group listeners did not receive any information about the speakers. In order to amplify the sound, the speakers loaned from “OIT Classroom Service at OSU” were used. The model number varied from session to session.

Subsequently, they were asked to react to the first, second, third, and fourth speech sample respectively, while offering their initial judgments on accentedness and comprehensibility of the four speakers. They rated the authenticity of each sample on the LPQ. The LPQ contains 6 pairs of bipolar adjectives of each “accent” and “comprehensibility” sections for each speaker (for four speakers, total 8 sections and 48
pairs of adjectives) and the listeners completed about four pages to perform the second task. The estimated duration to complete the total 48 statements on the LPQ took 12-15 minutes.

The second group that is assigned as the video group was first asked to complete the LIQ. The first task for the video group was identical to that of audio group. However, the second task for the video group differed from that of the audio group. Before performing the second task, the video group was given some socio-cultural information of each speaker (e.g., academic background, the years of immersion in the U.S.A, and first language background) using a written document. The researcher asked the participants to read the brief information of each speaker before showing each video clip. This process was defined as a “disclosing process” and took 20-30 seconds for each administration.

As for the second task, the listeners were asked to listen to and watch each of the four video-taped speech samples. Four of the video clip files saved on the researcher’s laptop computer was used for the treatment of the video group. For convenience, the projected screen and speaker loaned from “OIT Classroom Service” were used, and the model number varied from session to session. The researcher revealed the face of each speaker with video input and disclosed the SCI. After being provided with the SCI of the speakers, NL were asked to respond to the following four speech samples, respectively. The overall average assigned to each speaker was compared to the results of the audio group, and the differences between the two results for each group revealed the impact of SCI and other discriminating variables. Based on the two types of input, the analysis
focused on whether these variables were transferred to as the listener affiliated socio-cultural factors.

**Data Analysis Procedure**

The collected LPQ and LIQ responded thoroughly with consent forms were used in the data analysis procedure. The objective of this study is to predict the relationship between listeners’ accentedness/comprehensibility and listener affiliated socio-cultural factors. Therefore, the data analysis was displayed in the following order: First, descriptive statistics to define standard deviation, frequency, and mean were reported. Second, in order to explain linear correlation between variables, correlation matrix between variables was reported. The magnitudes of associations that were excerpted from Davis (1971) were used in Table 3.2 in order to report correlation coefficients.

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>.70 to .99</td>
<td>Very strong association</td>
</tr>
<tr>
<td>.50 to .69</td>
<td>Substantial association</td>
</tr>
<tr>
<td>.30 to .49</td>
<td>Moderate association</td>
</tr>
<tr>
<td>.10 to .29</td>
<td>Low association</td>
</tr>
<tr>
<td>.01 to .09</td>
<td>Negligible association</td>
</tr>
</tbody>
</table>

*Table 3.2: The Magnitude of Association*
Third, with a view to examining the linear correlation between the metric independent and dependent variables, regression analysis was conducted (Hair et al., 1998) while multicollinearity and residual were examined. Regression analysis is robust and tolerable to ordinal variables but cannot tolerate nominal variables (Miller, Acron, Fullerton, & Maltby, 2002). Therefore, participants’ majors that had 18 categories were dummy-coded into two dummy variables (0 & 1) and used for data analysis. Additionally, a further analysis of stepwise entry method was conducted to specify the factors that make the largest contribution to $R^2$. Stepwise regression selects the one independent variable at each step from a group of independent variables to find the contributing factor to $R^2$ of the model, until no additional significant variable is left at a statistically significant specified level (Gliem, 2003).

In order to conduct regression analysis, two assumptions were examined for this study. The first assumption was related to multicollinearity, and correlation matrix between variables was compiled to examine multicollinearity. According to Gliem (2003), a tolerance (1- $R^2$) value or high values near 1.0 and Variance Inflation Factor (VIF) value lower than 10 indicate that multicollinearity is not a concern. The collinearity statistics table of tolerance and VIF (see Table 4.13) portrayed that all tolerance values are close to 1.0 and VIF value are lower than 10. As a result, multicollinearity was not a concern for the regression analysis of this study. The second assumption for conducting regression analysis was independence of residuals. This means that “error associated with any observation is not correlated with error associated with any other observations” (Gliem, 2003, p. 4). This study examined the value of Durbin-Watson to detect residuals,
and the valued indicated as follows: $d=2.33$ (for accentedness) and $d=2.17$ (for comprehensibility). These values ensured the independence of residual, which made it possible for multiple regression analyses to be conducted. The SPSS program 15.0 for Windows was used to analyze the outcome of this correlational study.
CHAPTER 4

RESULTS AND FINDINGS

A correlational study was used to determine if listener’s perceptions of (1) accentedness and (2) comprehensibility can be predicted from listener affiliated socio-cultural factors (hereafter: identified with listener factors). Accentedness and comprehensibility of the participants were defined as dependent variables and predicted by two main independent variables: (1) the Socio-Cultural Information of the speakers (SCI) and (2) the Degree of Accentedness of the speakers (DA). The listener participants were native speakers of American English (referred to as Native Listeners, NL) who were undergraduate and graduate students enrolled in a large mid-western university in the United States. Due to limitations of recruitment, the participants of this study were a convenience sample, who volunteered to participate in this study. The listeners were divided into audio and video groups. The audio group listened to four audio clips consisting of four ordinal categories of speakers’ accent (MA, LW, FNA, & NNA). The video group watched four video clips that were recorded by the same speakers with the four accent categories and received written information of each speaker’s SCI. The audio
and video clips were recorded by three Non-Native speakers of English (NNS) and one Native Speaker (NS) of American English.

The rival variables for this study were: (1) academic major (major), (2) length of time in the program (length of time), (3) age, (4) sex, (5) experiences of being exposed to the foreign accented speech (exposure), and (6) interaction with a foreign accented speaker (interaction). These variables were measured by self-reporting on the listener information questionnaire (LIQ). The research questions of predicting the two dependent variables on the basis of the two main and six rival independent variables were followed by the two null hypotheses. The hypotheses testing for regression analysis intended to test “the proportion of the variance of the dependent variable explained (or accounted for) by the linear combination of the independent variables is zero” (Gliem, 2003). The hypothesis for research question #1 was defined as $H_1$ and the hypothesis for research question #2 was defined as $H_2$.

**Q1: Can listeners’ perception of accentedness be predicted from the following listener affiliated socio-cultural factors?**

(1) The Socio-Cultural Information of the speakers (SCI or group)

(2) The listeners’ academic major (major)

(3) The listeners’ length of time in the program (length of time)

(4) The listeners’ age (age)

(5) The listeners’ sex (sex)

(6) The listeners’ experience of being exposed to foreign accented speech (exposure)
(7) The listeners’ interaction with a foreign accented speaker (interaction)

**Hypothesis testing for Q1**

H$_0$: $R^2 = 0$

H$_1$: $R^2 \neq 0$

$\alpha = 0.05$

**Q2: Can listeners’ perception of comprehensibility be predicted from the following listener affiliated socio-cultural factors?**

(1) The Socio-Cultural Information of the speakers (SCI or group)

(2) The listeners’ academic major (major)

(3) The listeners’ length of time in the program (length of time)

(4) The listeners’ age (age)

(5) The listeners’ sex (sex)

(6) The listeners’ experience of being exposed to foreign accented speech (exposure)

(7) The listeners’ interaction with a foreign accented speaker (interaction)

**Hypothesis testing for Q2**

H$_0$: $R^2 = 0$

H$_2$: $R^2 \neq 0$

$\alpha = 0.05$
The objective of this study is to predict the relationship between listeners’ accentedness/comprehensibility and listener affiliated socio-cultural factors. The data analysis was conducted by the following order: (1) descriptive statistics to report standard deviation, frequency, and mean (2) correlational analysis, and (3) regression analysis including stepwise regression. Stepwise entry method was designed to specify the factors that make the largest contribution to R².

**Description of Participants**

The participants consisted of four speaker participants and 60 listener participants. The Socio-Cultural Information of the speakers (SCI) and Degree of Accentedness (DA) of speaker participants were represented as main independent variables. The target population for the study included native listeners (or speakers) of English (NL) who agreed to participate in this study, and the factors affiliated with the listeners represented rival independent variables. The listener participants were undergraduate and graduate students enrolled at a large mid-western university in the United States. The ethnic background of the listener participants was restricted to White Caucasian to make the listener characteristics of ethnicity constant. The listener participants were selected from the people who did not know the speakers personally in order to eliminate potential familiarity with the speakers from interfering with individuals’ perceptions.
Descriptive Analysis of Main Independent Variables

Main independent variables consisted of the (1) Socio-Cultural information (SCI) and (2) Degree of Accentedness (DA) of the four speaker participants. The SCI was obtained by interview with speaker participants, and the video group received the SCI while the audio group did not. The researcher self-selected the four speakers and the DA variable was defined by a panel of experts. The DA variable assigned to each speaker was presented by the following order: Moderate Accent (MA), Native Non Accent (NNA), Foreign Non Accent (FNA), and Low Accent (LA).

Socio-Cultural Information (SCI, or Group Variable)

The SCI of the speakers included: (1) ethnic background, (2) nationality, (3) academic background, (4) years of second language learning experience (L2), and (5) experiences of being exposed to an English speaking country. The audio group did not receive the SCI of the speakers, and the video group received the SCI of the speakers. The SCI of each speaker that was presented to the video group was as follows.

-----Speaker #1 was born in Taiwan and her native language is Mandarin. She studied English for 17 years through formal school instruction and also went to a private English cram school in Taiwan. She had not lived abroad in an English speaking country before 2001. She came to the U.S.A. to pursue a Master’s degree in education at OSU and currently lives here.

-----Speaker #2 was born in Louisiana and studied there until he graduated from university. He completed his master’s degree at OSU and is pursuing a doctoral degree in
social science at OSU. Although he speaks English with a native speaker accent, he does not perceive that he has a southern accent.

-----Speaker #3 was born in Korea and her native language is Korean. She came to the U.S.A at the age of 2 and returned to Korea at the age of 9. Although she studied English in the U.S, she did not continue studying English in Korea until secondary school. She has studied English for approximately 22 years and completed her bachelor’s and master’s degree from a university in Korea. She is currently pursuing a doctoral degree in education at OSU since 2003.

-----Speaker #4 was born in Korea and his native language is Korean. In 1997, he immigrated to the U.S.A at the age of 16. He began learning English by watching Disney movies in Korea, imitating phonological systems, and through sentence repetition drills. Overall, he has studied English for approximately 16 years. He completed junior high school in Korea and majored in computer science and electrical engineering at a mid-western university.

**Degree of Accentedness of Speakers (DA)**

The characteristics of speaker participants illustrated in Table 4.1 describe the main independent variable: Degree of Accentedness (DA). The DA variable that was assigned to each speaker was presented through the order of Moderate Accent (MA), Native Non Accent (NNA), Foreign Non Accent (FNA), and Low Accent (LA). The presentation order was arbitrarily decided by the researcher, and the same order was used
for every session. Based on the presentation order, the speaker was referred to as Sp1, Sp2, Sp3, and Sp4.

<table>
<thead>
<tr>
<th>Presentation Order</th>
<th>Characteristics of Four Speakers</th>
<th>Abbreviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speaker #1</td>
<td>Female</td>
<td>Moderate Accent (MA)</td>
</tr>
<tr>
<td>Speaker #2</td>
<td>Male</td>
<td>Native Non Accent (NNA)</td>
</tr>
<tr>
<td>Speaker #3</td>
<td>Female</td>
<td>Foreign Non Accent (FNA)</td>
</tr>
<tr>
<td>Speaker #4</td>
<td>Male</td>
<td>Low Accent (LA)</td>
</tr>
</tbody>
</table>

**Table 4.1: Characteristics of Four Speaker Participants**

**Descriptive Analysis of Rival Independent Variables**

The rival independent variables for this study were listeners’: (1) academic major, (2) length of time in the program (length of time), (3) age, (4) sex, (5) experiences of being exposed to the foreign accented speech (exposure), and (6) interaction with a foreign accented speaker (interaction).

**Academic Major at Undergraduate and Graduate Program (major)**

The researcher checked the completion of the instruments when the participants submitted both LIQ and LPQ, and no data were missing. As Table 4.2 shows, the sixty participants, who constituted both the audio and video groups, majored in 18 different...
fields. Each category of major was assigned as an exclusive nominal category regardless of whether the specialized major is subsumed in an upper level of section or program. The majors were listed in alphabetical order and then, among the 18 categories, the major categories were two dummy coded such as “language (1) and others (0)” because regression analysis cannot tolerate nominal categories. For this reason, the major lists that included “language” was assigned as 1 and the other lists that do not include “language” was assigned as 0 for the convenience of categorization and data analysis.
<table>
<thead>
<tr>
<th>Major</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Education (0)</td>
<td>5</td>
<td>8.3</td>
<td>8.3</td>
<td>8.3</td>
</tr>
<tr>
<td>Allied Medicine (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>10.0</td>
</tr>
<tr>
<td>Early Childhood Education (0)</td>
<td>4</td>
<td>6.7</td>
<td>6.7</td>
<td>16.7</td>
</tr>
<tr>
<td>Foreign &amp; Second Language Education (1)</td>
<td>11</td>
<td>18.3</td>
<td>18.3</td>
<td>35.0</td>
</tr>
<tr>
<td>Human &amp; Community Resource Development (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>36.7</td>
</tr>
<tr>
<td>Human Development &amp; Family Science (0)</td>
<td>13</td>
<td>21.7</td>
<td>21.7</td>
<td>58.3</td>
</tr>
<tr>
<td>Human Ecology (0)</td>
<td>2</td>
<td>3.3</td>
<td>3.3</td>
<td>61.7</td>
</tr>
<tr>
<td>Human Nutrition (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>63.3</td>
</tr>
<tr>
<td>Integrated Teaching &amp; Learning (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>65.0</td>
</tr>
<tr>
<td>Language Literacy Culture (1)</td>
<td>5</td>
<td>8.3</td>
<td>8.3</td>
<td>73.3</td>
</tr>
<tr>
<td>MED (0)</td>
<td>7</td>
<td>11.7</td>
<td>11.7</td>
<td>85.0</td>
</tr>
<tr>
<td>Middle Childhood Education (0)</td>
<td>2</td>
<td>3.3</td>
<td>3.3</td>
<td>88.3</td>
</tr>
<tr>
<td>Social Work (0)</td>
<td>2</td>
<td>3.3</td>
<td>3.3</td>
<td>91.7</td>
</tr>
<tr>
<td>Social Studies &amp; Global Education (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>93.3</td>
</tr>
<tr>
<td>School Psychology (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>95.0</td>
</tr>
<tr>
<td>Special Education (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>96.7</td>
</tr>
<tr>
<td>Sport Administration (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>98.3</td>
</tr>
<tr>
<td>Sport Management (0)</td>
<td>1</td>
<td>1.7</td>
<td>1.7</td>
<td>100.0</td>
</tr>
<tr>
<td>Total: 0-44, 1-16</td>
<td>60</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2: Major of the Listener Participants
Length of Time in the Program (length of time)

The variable “length of time in the program” range fell between 1 month (minimum) and 54 months (maximum). The average length of time in the program was 21.7 months and standard deviation was 16.3. The audio group’s average of the length of time in the program was 24.4 months, and the video group’s average was 19.1 months.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>24.4</td>
<td>30</td>
<td>16.7</td>
</tr>
<tr>
<td>Video</td>
<td>19.1</td>
<td>30</td>
<td>15.8</td>
</tr>
<tr>
<td>Total</td>
<td>21.7</td>
<td>60</td>
<td>16.3</td>
</tr>
</tbody>
</table>

Table 4.3: Length of Time in the Program between Groups

Age of the Listeners (age)

The age range of the participants fell between 21-54, and the mean age of the participants was 26.3 years and standard deviation was 6.7. The mean age of the audio group was 26.4 years, and the mean age of the video group was 26.1 years.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>26.4</td>
<td>30</td>
<td>7.4</td>
</tr>
<tr>
<td>Video</td>
<td>26.1</td>
<td>30</td>
<td>6.0</td>
</tr>
<tr>
<td>Total</td>
<td>26.3</td>
<td>60</td>
<td>6.7</td>
</tr>
</tbody>
</table>

Table 4.4: Age between Groups
Sex of the Listeners (sex)

Among 60 participants, 11 (18.3%) students were male and 49 (81.7%) students were female. In the audio group, five (16.7%) participants were male while 25 (83.3%) were female. In the video group, six (20%) participants were male while 24 (80%) were female.

Experiences of Being Exposed to the Foreign Accented Speech (exposure)

In order to obtain the “exposure” variable, the participants were asked whether they had ever been abroad. Among 60 participants, 24 (40%) answered “NO” while 36 (60%) percent answered “YES”. The exposure range fell between 0-970 days, and the average of exposure was 79.4 days. The audio group fell in the exposure range between 0-750 days, and the average of exposure was 56.7 days. The video group fell in the exposure range between 0-970 days, and the average of the video group was 102 days.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>56.70</td>
<td>30</td>
<td>155.49</td>
</tr>
<tr>
<td>Video</td>
<td>102.10</td>
<td>30</td>
<td>196.06</td>
</tr>
<tr>
<td>Total</td>
<td>79.40</td>
<td>60</td>
<td>176.92</td>
</tr>
</tbody>
</table>

Table 4.5: Exposure between Groups
Interaction with a Foreign Accented Speaker (interaction)

With respect to the variable interaction, one (1.7%) responded that s/he had no experience of talking to someone who spoke with a foreign accent, and 59 (98.3%) responded that they had talked to someone who spoke with a foreign accent. The interaction range fell between 0-1800 minutes per week. The mean average of interaction was 122.2 minutes per week. The audio group interaction range fell between 0-420 minutes per week, and the mean interaction was 68.9 minutes per week. The video group interaction range fell between 2-1800 minutes per week, and the average interaction of the video group was 175 minutes per week.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>68.90</td>
<td>30</td>
<td>89.00</td>
</tr>
<tr>
<td>Video</td>
<td>175.40</td>
<td>30</td>
<td>381.05</td>
</tr>
<tr>
<td>Total</td>
<td>122.15</td>
<td>60</td>
<td>279.55</td>
</tr>
</tbody>
</table>

Table 4.6: Interaction between Groups

Descriptive Analysis of Dependent Variables

Dependent variables consisted of listeners’ perception of (1) accentedness and (2) comprehensibility. To summate the measurement of accentedness, a 10 point measurement scale was used. The lower mean scores obtained by listeners indicate negative perception about the accent of each speaker (e.g., the speaker’s accent sounds:
bad, irritating, strong, unpleasant, uncomfortable, and non-native). On the other hand, the higher mean scores indicate positive perception about the accentedness of each speaker (e.g., the speaker’s accent sounds: good, pleasing, weak, pleasant, comfortable, and native).

Listeners’ perception of comprehensibility was measured by 10 point semantic differential scale consisting of six bipolar adjectives. Similar to the scale of accentedness measurement, the lower scores indicate negative perception about the comprehensibility of each speech sample (e.g., the speech sample sounds: difficult, unclear, misunderstandable, unintelligible, ambiguous, and imperceptible). However, the higher scores indicate positive perception about each speech sample (e.g., the speech sample sounds: easy, clear, understandable, intelligible, unambiguous, and perceptible).

**Listeners’ Perception of Accentedness**

Listeners’ perception of accentedness was analyzed by the following presentation order as shown in Table 4.7. The listeners’ perception of Sp1 accentedness, Sp2 accentedness, Sp3 accentedness, and Sp4 accentedness were compared to the average perception of all the speakers (referred to as accentedness). The average accentedness score assigned by the audio group was 7.22 and the score assigned by the video group was 7.50. Generally, the video group rated a higher score for the perception of accentedness of all speakers. The results were consistent with each speaker.

The mean comparison of Sp1 accentedness between audio and video groups showed that the Sp1 accentedness assigned by the audio group was 5.87. This score fell
in the range between 5.00-5.99 determined to refer to MA. The mean obtained by the video group was 6.39. This score fell in the range between 6.00-6.99 determined to refer to LA. The audio group rated Sp1 accentedness as MA but the video group rated Sp1 accentedness as LA. The average assigned by the two groups was 6.13, and this score indicated that MA speaker was perceived as LA. The score of 6.13 that fell in the range to define LA reduced the variability between MA and LA speakers. The between-group comparison showed that the video group assigned a higher mean score to the accentedness of MA speaker and reacted more positively than the audio group for the perception of Sp1 accentedness (MA).

The mean comparison of Sp2 accentedness between groups portrayed that the Sp2 accentedness assigned by the audio group was 8.65. This score fell in the range between 8.00-8.99 determined to refer to Native Non-Accented (NNA) speaker. The mean obtained by the video group was 8.79. This score fell in the range between 8.00-8.99 determined to refer to NNA. The audio group perceived Sp2 accentedness as NNA and the video group showed the same results. Although the video group assigned a higher score than the audio group, both groups evaluated Sp2 accentedness as NNA.

The mean comparison Sp3 accentedness between groups showed that the Sp3 accentedness assigned by the audio group was 7.79. This score fell in the range between 7.00-7.99 determined to refer to Foreign Non-Accented (FNA) speaker. The mean obtained by the video group was 8.12. This score fell in the range between 8.00-8.99 determined to refer to NNA. The listeners’ perception of Sp3 accentedness varied from groups. The audio group perceived Sp3 accentedness as FNA but the video group
perceived Sp3 accentedness as NNA. The video group assigned a higher mean score to Sp3 accentedness and reacted more positively than the audio group for the perception of Sp3 accentedness (FNA).

The mean comparison of Sp4 accentedness between groups showed that the Sp4 accentedness assigned by the audio group was 6.57. This score fell in the range between 6.00-6.99 determined to refer to Low-Accented (LA) speaker. The mean obtained by the video group was 6.69. This score fell in the range between 6.00-6.99 determined to refer to LA. The audio group perceived Sp4 accentedness as LA and the video group showed the same results. Although the video group assigned a higher score than the audio group, both groups produced almost the same scores to evaluate the Sp4 accentedness. The audio and the video group perceived Sp4 as LA, and they showed the same perception of Sp4 accentedness.

<table>
<thead>
<tr>
<th>Group</th>
<th>sp1accent</th>
<th>sp2accent</th>
<th>sp3accent</th>
<th>sp4accent</th>
<th>Accentedness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>Mean</td>
<td>5.87</td>
<td>8.65</td>
<td>7.79</td>
<td>6.57</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.65</td>
<td>1.30</td>
<td>1.31</td>
<td>1.53</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Video</td>
<td>Mean</td>
<td>6.39</td>
<td>8.79</td>
<td>8.12</td>
<td>6.69</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.22</td>
<td>1.05</td>
<td>1.31</td>
<td>1.46</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>6.13</td>
<td>8.72</td>
<td>7.95</td>
<td>6.63</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.46</td>
<td>1.18</td>
<td>1.30</td>
<td>1.49</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
</tbody>
</table>


Table 4.7: Descriptive Data: Listeners’ Perception of Accentedness
Listeners’ Perception of Nativeness

Among the 6 pairs of bipolar adjectives, the researcher created one pair of adjectives purported to measure whether the listeners evaluated the speech samples as “non-native” or “native”. Although accentedness is an omnibus term that comprises nativeness of the speakers, the pairs of “non-native” or “native” were designed to indicate the perception of “native accent” or “native speaker” from the viewpoint of listeners. The obtained correlation coefficient (.61) between “nativeness” and “accentedness” showed a substantial relationship between the two concepts. Therefore, the item “nativeness” was also analyzed to compare to what extent the concept of “nativeness” is similar to or different from the concept of accentedness. Although the single item nativeness is not defined as a dependent variable, the analysis of this item was conducted to report conceptual similarities or differences between “nativeness” and “accentedness”. The average nativeness score assigned by the audio group was 5.83 and the score assigned by the video group was 6.64. Generally, the video group rated a higher score for the perception of nativeness of all speakers. The results were consistent with each four speakers.

The mean comparison of Sp1 nativeness portrayed that the Sp1 nativeness assigned by the audio group was 4.33. This obtained score was below the range of defining MA (5.00-5.99). The audio group who perceived Sp1 accentedness as MA (5.87) assigned a lower score (4.33) for the sake of evaluating Sp1 nativeness. The mean obtained by the video group was 4.53, and this score was below the range of defining MA.
The video group who perceived Sp1 accentedness as LA (6.39) assigned a lower score (4.53) in order to evaluate the Sp1 nativeness.

The mean comparison of Sp2 nativeness showed that the Sp2 nativeness assigned by the audio group was 8.60. This obtained score fell in the range of defining NNA (8.00-8.99). The audio group who perceived Sp2 accentedness as NNA (8.65) assigned almost the same score (8.60) for evaluating the Sp2 nativeness. The mean obtained by the video group was 9.43, and this score was higher than the range of defining NNA (8.00-8.99). In order to evaluate Sp2 nativeness, the video group who perceived Sp2 accentedness as NNA (8.8) assigned a higher score (9.43) in order to evaluate Sp2 nativeness.

The mean comparison of Sp3 nativeness portrayed that the Sp3 nativeness assigned by the audio group was 5.57. This obtained score fell within the range of defining MA (5.00-5.99). The audio group who perceived Sp3 accentedness as FNA (7.79) assigned a lower score (5.57) for the sake of evaluating Sp3 nativeness. The score obtained by the video group was 7.23, and this score fell within the range of defining FNA (7.00-7.99). The video group who perceived Sp3 accentedness as NNA (8.12) assigned a lower score (7.23) in order to evaluate the Sp3 nativeness.

For the evaluation of Sp4 nativeness, the mean comparison of Sp4 nativeness showed that the video group assigned a higher score compared to the audio group and reacted more positively. The Sp4 nativeness assigned by the audio group was 4.80 and this obtained score was lower than the range of defining MA (5.00-5.99). The audio group who perceived Sp4 accentedness as LA (6.57) assigned a lower score (4.80) for the sake of evaluating the Sp4 nativeness. The mean obtained by the video group was 5.37,
and this score fell in the range of defining MA (5.00-5.99). The video group who perceived Sp4 accentedness as LA (6.68) assigned a lower score (5.37) to evaluate Sp4 nativeness.

<table>
<thead>
<tr>
<th>Group</th>
<th>sp1native</th>
<th>sp2native</th>
<th>sp3native</th>
<th>sp4native</th>
<th>Nativeness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>Mean</td>
<td>4.33</td>
<td>8.60</td>
<td>5.57</td>
<td>4.80</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>2.88</td>
<td>2.74</td>
<td>2.81</td>
<td>2.81</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30.00</td>
<td>30.00</td>
<td>30.00</td>
<td>30.00</td>
</tr>
<tr>
<td>Video</td>
<td>Mean</td>
<td>4.53</td>
<td>9.43</td>
<td>7.23</td>
<td>5.37</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>2.42</td>
<td>1.52</td>
<td>2.22</td>
<td>2.30</td>
</tr>
<tr>
<td></td>
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<td>30.00</td>
<td>30.00</td>
<td>30.00</td>
</tr>
<tr>
<td>Total</td>
<td>Mean</td>
<td>4.43</td>
<td>9.02</td>
<td>6.40</td>
<td>5.08</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>2.64</td>
<td>2.24</td>
<td>2.65</td>
<td>2.56</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>60.00</td>
<td>60.00</td>
<td>60.00</td>
<td>60.00</td>
</tr>
</tbody>
</table>

Table 4.8: Descriptive Data: Listeners’ Perception of Nativeness

**Listeners’ Perception of Comprehensibility**

The findings showed that listeners’ perception of comprehensibility had two levels: Intermediate High Comprehensible (IHC) and High Comprehensible (HC). The comprehensibility of Speaker #1 (referred to as Sp1 comprehensibility) fell in the category of IHC, the comprehensibility of Speaker #2, 3, & 4 (referred to as Sp2 comprehensibility, Sp3 comprehensibility, & Sp4 comprehensibility, respectively) fell in the category of HC. The average comprehensibility score assigned by the audio group was 8.78 and the score assigned by the video group was 8.43. These scores fell in the category of HC, and the four speakers’ speech samples were categorized as highly
comprehensible. In the perception of Sp2, Sp3, Sp4 comprehensibility, the video group rated lower scores. On the contrary, the results were not consistent with Sp1 comprehensibility.

The mean comparison of Sp1 comprehensibility shown in Table 4.9 portrayed that the Sp1 comprehensibility assigned by the audio group was 7.27. This score fell in the range between 7.00-7.99 determined to refer to IHC. The mean obtained by the video group (7.59) also fell in the range to refer to IHC. For the evaluation of Sp1 comprehensibility, the video group rated a higher score than the audio group. The video group evaluated more positively than the audio group for the perception of Sp1 comprehensibility.

The mean comparison of Sp2 comprehensibility indicated that the Sp2 comprehensibility assigned by the audio group was 9.68. This score fell in the range higher than 8.00 determined to refer to HC. The mean obtained by the video group (9.30) also fell in the range to refer to HC. The video group offered a lower score than the audio group for the evaluation of Sp2 comprehensibility. The video group reacted more negatively than the audio group for the perception of Sp2 comprehensibility.

The mean comparison of Sp3 comprehensibility showed that the Sp3 comprehensibility assigned by the audio group was 9.58. This score fell in the range higher than 8.00 determined to refer to HC. The mean obtained by the video group (8.83) also fell in the range to refer to HC. The video group offered a lower score than the audio group for the evaluation of Sp3 comprehensibility. The video group reacted more negatively than the audio group for the perception of Sp3 comprehensibility.
The mean comparison of Sp4 comprehensibility portrayed that the Sp4 comprehensibility assigned by the audio group was 8.59. This score fell in the range higher than 8.00 determined to refer to HC. The mean obtained by the video group (8.01) also fell in the range to refer to HC. For the evaluation of Sp4 comprehensibility, the video group offered a lower score than the audio group. The video group reacted more negatively than the audio group for the perception of Sp4 comprehensibility.

<table>
<thead>
<tr>
<th>Group</th>
<th>sp1comp</th>
<th>sp2comp</th>
<th>sp3comp</th>
<th>sp4comp</th>
<th>Comprehensibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Audio</td>
<td>Mean</td>
<td>7.27</td>
<td>9.68</td>
<td>9.58</td>
<td>8.59</td>
</tr>
<tr>
<td></td>
<td>Std. Deviation</td>
<td>1.87</td>
<td>.76</td>
<td>.61</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>30.00</td>
<td>30.00</td>
<td>30.00</td>
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</table>

Table 4.9: Descriptive Data: Listeners’ Perception of Comprehensibility

In sum, the descriptive statistics portray that the video group evaluated accentedness and nativeness more positively than the audio group. On the contrary, the video group evaluated more negatively for the evaluation of comprehensibility except for the MA speaker. The delivery type difference between audio and video resulted in outcome differences in the perception of accentedness and comprehensibility. The possible reasons will be further explained later.
Correlational Analysis

A bivariate correlational analysis was conducted to portray the magnitude and direction of the relationships among independent and dependent variables. The Pearson product moment correlation coefficients (r) that measured the relationship between two metric variables (e.g., length, age, exposure, interaction) were computed after the assumptions checks of linearity and homoscedasticity was conducted (Gliem, 2003; Kachi, 2004; Warmbrod, 2000). Non-linearity was examined by scatterplots constructed for metric data, and the scatterplots did not show the threat of non-linearity and homoscedasticity (see Appendix K). The magnitude of the relationships among variables, shown in Table 3.2, was decided by Davis’s convention (1971).

Listeners’ Perception of Accentedness

For the description of accentedness, a positive low association between SCI and accentedness was observed (.14) and the coefficient of determination was $r^2=.02$. The coefficient of determination ($r^2$) represents the proportion of the variability in Y (accentedness) accounted for by knowledge of X (SCI) and indicates the goodness of prediction (Miller, 2001). The coefficient of $r^2=.02$ indicates that 2% of the variability in listeners’ perception of accentedness is explained by the knowledge of the SCI variable while 98% of the variability is not. This also indicates that the group, who received the SCI of the speakers, evaluated the speakers’ accentedness more positively. These results
have 2% of variability to predict the dependent variable, accentedness. A negative low association between length of time in the program and accentedness was detected (-.26) and the coefficient of determination was $r^2 = .07$. The coefficient of $r^2 = .07$ indicates that 7% of the variability in listeners’ perception of accentedness is explained by the knowledge of length of time variable while 93% of the variability is not. This implies that the people who were enrolled in the program for a long period of time evaluated the speakers’ accentedness more negatively. A positive low association between major and accentedness occurred (.23) and the coefficient of determination was $r^2 = .05$. The coefficient of $r^2 = .05$ indicates that 5% of the variability in listeners’ perception of accentedness is explained by the knowledge of major variable while 95% of the variability is not. This indicates that the people who majored in language-related program evaluated the speakers’ accentedness more positively.

<table>
<thead>
<tr>
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<th>Pearson r</th>
</tr>
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<tr>
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<tr>
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<tr>
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<table>
<thead>
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<thead>
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<table>
<thead>
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<tbody>
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<table>
<thead>
<tr>
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<th>Pearson r</th>
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</thead>
<tbody>
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<td>1.00</td>
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</tr>
</tbody>
</table>

X1: group, X2: major, X3: length, X4: age, X5: sex, X6: exposure, X7: interaction  

$r_{pb}$: Point-biserial Correlation Coefficient

**Table 4.10:** Correlation Matrix for Listeners’ Perception of Accentedness
**Listeners’ Perception of Nativeness**

For the description of nativeness, a positive low association (.26) occurred in the relationship between SCI (group) variable and nativeness. The coefficient of determination between these two variables was $r^2=.07$. The coefficient of $r^2=.07$ indicates that 7% of the variability in listeners’ perception of nativeness is explained by the knowledge of the SCI variable while 93% of the variability is not. This indicates that the group who received SCI of the speakers evaluated the speakers’ nativeness more positively. A negative low association between listeners’ exposure and nativeness (-.20) was observed and the coefficient of determination was $r^2=.04$. The coefficient of $r^2=.04$ indicates that 4% of the variability in listeners’ perception of nativeness is explained by the knowledge of exposure variable while 96% of the variability is not. Similarly, a negative association between listeners’ interaction and nativeness (-.20) was detected and the coefficient of determination was $r^2=.04$. The coefficient of $r^2=.04$ indicates that 4% of the variability in listeners’ perception of nativeness is explained by the knowledge of interaction variable while 96% of the variability is not. These scores indicate that the participants who were more exposed to the foreign accented speech (exposure) and had more interaction with a foreign accented speaker (interaction) evaluated the speakers’ nativeness more negatively.
Table 4.11: Correlation Matrix for Listeners’ Perception of Nativeness

<table>
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</tr>
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X1: group, X2: major, X3: length, X4: age, X5: sex, X6: exposure, X7: interaction
rpb: Point-biserial Correlation Coefficient

Listeners’ Perception of Comprehensibility

For the description of comprehensibility, a negative low association (-.19) occurred in the relationship between the SCI (group) variable and comprehensibility. The coefficient of determination between these two variables was \( r^2 = .04 \). The coefficient of \( r^2 = .04 \) indicates that 4% of the variability in listeners’ perception of comprehensibility is explained by the knowledge of the SCI variable while 96% of the variability is not. This indicates that the group who received SCI of the speakers (the audio group) evaluated the speakers’ comprehensibility more negatively. A positive low association between listeners’ age and comprehensibility (.25) was detected and the coefficient of determination was \( r^2 = .06 \). The coefficient of \( r^2 = .06 \) indicates that 6% of the variability in listeners’ perception of comprehensibility is explained by the knowledge of age variable.
while 94% of the variability is not. This implies that the older participants evaluated the speakers’ comprehensibility more positively. A negative association between listeners’ interaction and comprehensibility (-.25) was detected and the coefficient of determination was $r^2=.06$. The coefficient of $r^2=.06$ indicates that 6% of the variability in listeners’ perception of comprehensibility is explained by the knowledge of interaction variable while 94% of the variability is not. This indicates that the participants who had more interaction with a foreign accented speaker (interaction) evaluated the speakers’ comprehensibility more negatively.

<table>
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X1: group, X2: major, X3: length, X4: age, X5: sex, X6: exposure, X7: interaction
$r_{pb}$: Point-biserial Correlation Coefficient

Table 4.12: Correlation Matrix for Listeners’ Perception of Comprehensibility

In summary, the SCI variable showed a positive low association with listeners’ perception of accentedness and nativeness. In contrast, SCI showed a negative low association with listeners’ perception of comprehensibility. Listeners’ major had a positive low association with accentedness, while length of time in the program showed a
negative low association with accentedness. Listeners’ exposure and interaction showed a negative low association with nativeness. Listeners’ age showed a positive association with comprehensibility while interaction had a negative association with comprehensibility.

Unfortunately, no listener factor (independent variable) showed very strong associations with accentedness and comprehensibility (dependent variables). The highest correlation coefficients were .26 and -.26 and the highest coefficients of determination were .07. These findings indicate that not a single listener factor played a powerful role in associating the listener factors with the listeners’ perception of accentedness and comprehensibility. In order to attempt to detect what listener factors make the largest contribution to the two dependent variables, the regression analysis was conducted.

**Regression Analysis**

The purpose of conducting multiple regression analysis was to predict listeners’ perception of (1) accentedness and (2) comprehensibility with the information available on the two main independent variables (SCI and DA) and six rival independent variables (major, length of time, age, sex, exposure, and interaction). This technique aimed to describe how each independent variable (including group variable) contributes to the explanation or prediction of the variance in each dependent variable (Gliem, 2003; Kachi, 2004). In order to confirm assumptions for regression analysis, the two assumption checks were conducted. First, the results of collinearity statistics are shown in Table 4.13.
Tolerance ($1 - R^2$) values or high values near 1.0 and Variance Inflation Factor (VIF) values lower than 10 indicate that multicollinearity is not a concern (Gliem, 2003). The tables indicate that multicollinearity is not a concern. Second, the study examined the independence of residual to meet the assumption for regression analysis. The values of Durbin-Watson, used for examining residuals, indicated that these values ensured the independence of residuals ($d=2.33$, for accentedness and $d=2.17$ for comprehensibility).

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**Table 4.13:** Collinearity Statistics for Accentedness and Comprehensibility

Based on the findings of regression analyses, the regression on accentedness indicated that one independent variable (length of time in the program) had the largest contribution to the explanation of the variance in listeners’ perception of accentedness. This model predicted listeners’ perception of accentedness. The regression analysis on nativeness showed that group (SCI), interaction, and exposure variables had a larger contribution to the explanation of the variance in listeners’ perception of nativeness. This model predicted listeners’ perception of nativeness. The regression on comprehensibility
portrayed that listeners’ interaction contributed to the explanation of the variance in listeners’ perception of comprehensibility. This model also predicted listeners’ perception of comprehensibility.

**Perception of Accentedness and Listener Factors**

The results of regression analysis with the simultaneous model of listeners’ perception of accentedness are shown in Table 4.14. The simultaneous model indicates that each variable was entered into the regression equation in a single step. Adjusted $R^2$ explains that this model accounts for 8% of the variance in listeners’ perception of accentedness. The null hypothesis was rejected ($H_0: R^2 \neq 0$) with $F=1.70$ and $p<.05$, and, hence, this model predicted listeners’ perception of accentedness. However, the coefficient of determination $R^2$ was small. This indicates to what extent the proportion of the variance is accounted for by an independent variable. The small $R^2$ and insignificant $p$ values of independent variables (group, major, length, age, sex, and exposure) implied that these independent variables were not effective predictors of listeners’ perception of accentedness for this model.
On the basis of regression analysis, further analysis was conducted by stepwise regression. For the purpose of finding the contributing factor to $R^2$ of the model, this analysis tool was applied to select the one independent variable at each step from a group of independent variables. This was done until no additional significant variable is left at a statistically significant specified level. As a result, the largest contribution of listener factors to the perception of accentedness was the length of time in the program. Stepwise regression analysis indicated that the length of time in the program was the contributing factor to predict accentedness. The Standardized coefficient (Beta) -.26 explains that the absolute value of this coefficient represents the relative importance of predicting listeners’ perception of accentedness in the model. Holding all other independent
variables in the model constant, the value of -.26 indicates that the score on the listeners’ perception of accentedness will decrease by .26 points for every one unit increase in the value of the length of time in the program. The decrease will occur because this variable was negatively associated with listeners’ perception of accentedness. Adjusted $R^2$ explains that this model accounts for 5% of the variance in listeners’ perception of accentedness. However, the other 95% of the variance is not explained by this model.

<table>
<thead>
<tr>
<th></th>
<th>Sig(p)</th>
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<th>F</th>
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</thead>
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</table>

Standard Error: 3.84
Adjusted $R^2 = .05$
$R^2 = .07$
For model: $F=4.15$
p< .05

Table 4.15: Stepwise Regression Results on Accentedness (Simultaneous, N=60)

**Perception of Nativeness and Listener Factors**

The results of regression analysis with the simultaneous model of listeners’ perception of nativeness are shown in Table 4.15. Adjusted $R^2$ explains that this model accounts for 12% of the variance in listeners’ perception of nativeness while the other 88% of the variance is not explained by this model. The null hypothesis was rejected ($H_0$: $R^2 \neq 0$) with $F=2.20$ and $p<.05$, and, hence, this model predicted listeners’ perception of
nativeness. The coefficient of determination $R^2$ of a set of variables (major, length, age, sex) was small and showed insignificant $p$ values. Therefore, these independent variables were not effective predictors of listeners’ perception of nativeness. On the other hand, the coefficient of determination $R^2$ of a set of variables (SCI, exposure, interaction) was large and showed significant $p$ values. These variables were regarded as greater contributing predictors of listeners’ perception of nativeness.

The results and findings based on stepwise analysis were the same. Holding all other independent variables in the model constant, the Beta value of the SCI variable (.30) indicates that the score on the dependent variable will increase by .30 points for every one unit increase in the value of the group variable. The increase will occur because this variable was positively associated with listeners’ perception of nativeness. In the mean time, the score on the listeners’ perception of nativeness will decrease by .31 points for every one unit increase in the value of the exposure variable. Holding all other independent variables in the model constant, the score on the listeners’ perception of nativeness will decrease by .33 points for every one unit increase in the value of the interaction variable.
By conducting regression analysis, research question #2 (Q2) to predict the relationship between listeners’ perception of comprehensibility and listener affiliated socio-cultural factors was examined. The results of regression analysis with the simultaneous model of listeners’ perception of comprehensibility shown in Table 4.16 indicated that this model accounts for 8% of the variance in listeners’ perception of comprehensibility while the other 92% of the variance is not explained by this model. The null hypothesis was rejected ($H_0: R^2 \neq 0$) with $F=1.68$ and $p<.05$, and, hence, this model predicted listeners’ perception of comprehensibility. The coefficient of
determination $R^2$ and $p$ value indicated that interaction made the largest contribution to predict listeners’ perception of comprehensibility while other variables (group, major, length, age, sex, and exposure) were not regarded as greater contributing predictors of comprehensibility. The results and findings based on stepwise analysis were the same. Holding all other independent variables in the model constant, the score on the listeners’ perception of comprehensibility will decrease by .28 points for every one unit increase in the value of the interaction variable. The decrease will occur because this variable was negatively associated with listeners’ perception of comprehensibility.

<table>
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<td>2.08</td>
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<td>-.28</td>
<td>3.98</td>
<td>.06</td>
<td>.05</td>
</tr>
</tbody>
</table>

Standard Error: 3.62
Adjusted $R^2 = .08$
$R^2 = .19$
For model: $F=1.68$ (For all variables entered together)
$p< .05$

Table 4.17: Multiple Regression Results on Comprehensibility (Simultaneous, N=60)
In summary, with respect to the hypotheses testing of the two regression models, the two null hypotheses were rejected, and these models predicted the listeners’ perception of accentedness and comprehensibility. However, the adjusted $R^2$ values, which accounted for the variance of the models for accentedness and comprehensibility was, low (8 % each). In addition, 92 % of the variance for accentedness and comprehensibility were not explained by these models. For the accentedness and comprehensibility regression model, SCI was not a contributing factor to predict the two dependent variables. However, for the regression on listeners’ perception of nativeness, SCI was regarded as a contributing factor to predict this model. The regression results indicated that length of time was the contributing factor to predict accentedness while interaction was the contributing factor to predict comprehensibility.

**Summary of the Findings**

The descriptive statistics demonstrated that the video group evaluated accentedness and nativeness more positively than the audio group. In contrast, the video group evaluated the speakers’ comprehensibility more negatively than the audio group except for the MA speaker. The audio and video group differences were explained by correlational analyses. In particular, the SCI variable had a positive low association with listeners’ perception of accentedness and nativeness. On the other hand, SCI maintained a negative low association with listeners’ perception of comprehensibility. Listeners’ major had a positive low association with accentedness, but length of time in the program showed negative low association with accentedness. Although nativeness was a
sub-category of accentedness, the results of correlational analyses were somewhat
different from each other. Listeners’ exposure and interaction showed a negative low
association with nativeness. In regards to comprehensibility, age showed positive
association with comprehensibility while interaction had a negative association with
comprehensibility.

Regression analyses and hypotheses testing of these two regression models were
conducted to predict listeners’ perception of accentedness and comprehensibility while
finding the contributing factors to predict these models. According to regression analyses,
the two null hypotheses were rejected, and these models predicted the listeners’
perception of accentedness and comprehensibility. However, the adjusted R² values were
too low to predict the two dependent variables (8 % each) and to account for the variance
of these models. Additionally, for the accentedness and comprehensibility model, SCI
was not a contributing factor to predict the two dependent variables while SCI was
regarded as a contributing factor to predict nativeness. The regression results indicated
that that length of time was the contributing factor to predict accentedness while
interaction was the contributing factor to predict comprehensibility.
CHAPTER 5

CONCLUSION, DISCUSSION, RECOMMENDATIONS, IMPLICATIONS, AND LIMITATIONS OF THE STUDY

The findings showed that accentedness can be perceived differently when it is associated with socio-cultural differences and visual cues. As Matsuda (1991) defined, “any speech that is different from that constructed norm is called an accent” (p.1361). Particularly, the people in power are perceived as speaking normal and unaccented English, and this is a prestige variety that Standard English users are in favor of. This shows that power issues exist between various English accents. Matsuda (1991) supported this claim by pointing out that “everyone has an accent but when an employer refuses to hire a person with an accent, they [sic] are referring to a hidden norm of non-accent” (p.1361). She argued that the English accent has become embedded in political and socio-cultural issues, and these issues have an influence on the construction of the individuals’ perception of accentedness and accent discrimination. As a law professor, she witnessed a number of people who had failed to obtain certain jobs in the United States because they were foreign born speakers who spoke with a unique accent. She
concluded that “accent discrimination is commonplace, natural, and socially acceptable” (p.1348). Although the power issues are related to the different accents, not many studies have portrayed to what extent the perception differences underlie NS evaluation of accents.

Accordingly, these issues motivated the researcher to examine how the non-nativeness or possessing a non-native accent is perceived by NS of American English in an American academic environment. The current study was inspired by Matsuda’s experiences and was concerned with hidden stereotypes that were associated with NNS and the potential implications of these on American academic communities. A framework of correlational study was constructed to determine whether listener’s perceptions of (1) accentedness and (2) comprehensibility can be predicted from listener affiliated socio-cultural factors (referred to as listener factors). Accentedness and comprehensibility of the participants were defined as dependent variables and were predicted by two main independent variables: (1) the Socio-Cultural Information of the speakers (SCI) and (2) the Degree of Accentedness of the speakers (DA). The listener participants were native speakers of American English (referred to as Native Listeners, NL) who were undergraduate and graduate students enrolled in a large mid-western university in the United States. Due to certain limitations of the recruitment process, the participants of this study were a convenience sample who volunteered to participate in this study. The listeners were divided into audio and video groups. The audio group listened to four audio clips recorded by three Non-Native speakers of English (NNS) and one Native Speaker (NS) of American English. These consisted of four ordinal categories of
speakers’ accent (MA, LW, FNA, & NNA). The video group watched four video clips that were recorded by the same speakers with the four accent categories and also received written information of each speaker’s SCI.

The rival variables in this study were: (1) academic major (major), (2) length of time in the program (length of time), (3) age, (4) sex, (5) experiences of being exposed to the foreign accented speech (exposure), and (6) interaction with a foreign accented speaker (interaction). These variables were measured by self-reporting on the listener information questionnaire (LIQ). The two research questions and two null hypotheses were designed to predict the two dependent variables on the basis of the two main and six rival independent variables. The hypotheses testing for regression analysis intended to examine to what extent the linear combination of the independent variables can predict or explain the proportion of the variance of the dependent variables (Gliem, 2003).

On the basis of the findings of the current study, two conclusions are drawn. First, the findings of descriptive analyses indicate that visual representation and SCI of NNS have a positive impact on the listeners’ perception of accentedness and nativeness. The descriptive statistics indicated that the video group that received SCI rated the accentedness and nativeness of the speakers more positively compared to the audio group. The average comparison between the video and the audio group presented between-group differences consistently. In reference to the perception of comprehensibility, the video group that received SCI rated the comprehensibility of FNA, NNA, and LW more negatively compared to the audio group. In contrast, for the evaluation of the MA speaker’s comprehensibility, the video group rated the speaker more positively. This
conclusion is supported by the findings of the correlational analyses and indicated that SCI had a positive low association with the perception of accentedness and nativeness. On the contrary, SCI had a negative low association with the perception of comprehensibility.

Given these data, the current study found that the disclosure of differences and non-nativeness are not the fundamental factors impeding listeners’ perception of accentedness and comprehensibility, and these findings drew the following conclusion. That is, from the viewpoint of NL, the awareness of differences through visual cues and information played a positive role in the perception of the speakers’ different accents. Including visual cues, the written information of the speakers also influenced the native listeners’ decision to identify the speakers’ background and socio-cultural differences. Although visual cues and written information were verified and lead to the recognition of the socio-cultural differences between NNS and NS, they were not unfavorable cues in listeners’ perception of various accents.

Second, the findings of regression analyses indicated that length of time in the program made the largest contribution to the perception of accentedness while interaction made the largest contribution to predict comprehensibility. Regression analyses and hypotheses testing of the two regression models showed that the listeners’ perception of accentedness and comprehensibility were predicted by listener affiliated socio-cultural factors (length of time and interaction). The two null hypotheses were supported by these models that predicted the listeners’ perception of accentedness and comprehensibility. In addition, for the accentedness and comprehensibility models, although SCI did not make
a large contribution to predict the two dependent variables, SCI did make a larger contribution to predict nativeness. The regression results showed that various listener factors contributed to predict listeners’ perception of accentedness and comprehensibility. Among many other listener affiliated socio-cultural factors, length of time in the program was a predicting factor in perceiving NNS accentedness. Similar to Thuy’s (1979) findings, the listener factor that predicted the perception of comprehensibility was the frequency of interaction with people who spoke with foreign accented English. He claimed that a Foreign-Born English Speakers’ (FBES) accent can create a favorable or unfavorable impression and have an impact on the perception and attitude of Anglo-Americans. From the viewpoint of unfavorable impression, he argued that accent is considered as a stamp of approval or a stamp of non-nativeness, and the foreign accent that is represented through the language of a less successful minority group was perceived as a type of stigma. However, the findings of the current study indicated that although the visual cues revealed the speakers’ identity, SCI and video clip played a role as the textual messages and datasets, and facilitated background knowledge as Evans, Conol, and Youngs (2001) found. The listeners redefined the data more positively, and the perceptions were predicted by the two listener factors.

Upon considering that two regression models were predicted by listener factors, these findings raise an important question of why these results were produced. For the purpose of discussing these questions comprehensively, the following section briefly portrays some possible reasons and estimation. Based on the findings of the present study, the following sections will provide the discussion section to reconsider the meanings of
this study. Furthermore, the contribution of this study to TESOL and English Pronunciation Instruction (EPI) will be specified in the recommendation and implication sections followed by the suggestion of further studies and limitations of the current study.

**Discussion**

The results and findings showed that different listener factors were used to predict speakers’ accentedness and comprehensibility. For the prediction of accentedness, *length of time* made the largest contribution, while *interaction* primarily played a role in predicting comprehensibility. For the perception of nativeness, *SCI, exposure, and interaction* made larger contributions towards predicting two dependent variables. The delivery type differences (video and audio) also produced between-group differences. On the basis of these findings and results, the following six key questions will address what these results imply and how these findings are interpreted with some possible reasons and related studies. While supporting the findings and results of this study, these key questions will address how the findings appear, and why these results are produced.

**Do the numbers assigned to each speaker exactly represent the degree of accentedness?**

This study was challenged by the question, “how can the scores assigned to each speaker based on the agreement of panel of experts exactly represent the degree of accentedness?” (e.g., MA, LA, FNA, and NNA). In other words, can the range of scores
between 5.00-5.99, 6.00-6.99, 7.00-799, and 8.00-higher represent the degree of accentedness in real life? Do these scores maximize the variability of accentedness and have an impact on the listeners’ perception differences? This study has certain limitations considering these questions involved in the notion of degree of accentedness. However, the label or the degree of accentedness assigned to each speaker were not designed to be permanent but were meant only for the purpose of this study. In other words, the criteria to define the degree of accentedness as represented by the numbers are changeable based on the purpose of the study.

Additionally, this study intended to examine to what extent the rating and evaluation of accentedness differed from individual listeners using listener factors. For the MA speaker, even though the panel of experts rated this speaker as MA, the obtained score was 6.13, which enabled her to fall in the range of LA. Although the panel of experts working at the Spoken English Program calibrated the speakers with appropriate criteria and divided them into four categories, their perceptions of MA were different from those of NL. The perception difference between the experts and research participants explained that listeners who had varied experience evaluated the same accent in different ways using different criteria. In other words, certain accents cannot be perceived or labeled in the same way because of various listener characteristics. For instance, some listeners were more tolerant towards the MA, and, hence they assigned higher scores to evaluate this speaker’s accent as native. On the other hand, some listeners were not tolerant towards this accent and assigned lower scores to evaluate this accent as foreign. The factors involved in listeners’ tolerance and sensitivity about certain
accents seemed to have an impact on the wide variety of listeners’ responses although this study did not probe this issue. Additionally, these results are explained by the limitation in finding the speakers who have the same variability of accentedness. Although they were categorized into the assigned number such as 5.00-5.99, 6.00-6.99, 7.00-7.99, and higher than 8.00, in some cases, categorizing speakers’ accents within limited ordinal categories is limited in that the score differences are too small to represent perception differences. However, if appropriate criteria are established to define the speakers’ accentedness, this will help listeners evaluate the accentedness with similar perception although various factors need to be detected in order to probe listeners’ evaluation process. Therefore, further study regarding which variables may have an impact on dividing speakers’ accentedness into certain designated categories is suggested.

**Why did visual cues and SCI of the speakers have an impact on the listeners’ perception of accentedness and nativeness?**

The descriptive statistics indicated the between-group differences by showing the distinctive results between the group who received SCI (video) and those who did not. Additionally, the correlational analysis indicated that SCI had a low association with the perception of accentedness and nativeness. Although the largest contribution of listener factors to the perception of accentedness was *length of time* in the program, SCI was a contributing factor in predicting listeners’ perception of nativeness. The possible reasons to analyze these findings are supported by many studies associated with the impact of visualization to engage participants (Evans, Conol, & Youngs, 2001; Mays, 1982; Paivio,
1971; Rieber, 1994; Shortridge & Emmert, 2002; Winn & Snyder, 1996). Parallel to the study of Shortridge and Emmert (2002), the participants of the current study demonstrated that they were influenced by the impact of visual representation and information. In addition, the participants also encoded information to their own memory visually, and the visualized cues were the effective variable in the recall process of written information, similar to the findings of Paivio (1971). The process of encoding information and visualizing cues also had an impact on the recalling. As a result, listeners used existing and inherent information as well as newly-obtained information provided by a visualized input. Therefore, the audio group reacted to the speakers based on the linguistic cues or existing socio-cultural variables (e.g., existing perception, beliefs, memories) while the video group responded to the speakers based on the combination of both linguistic cues and newly-obtained information.

Why did the video group assign a higher score for the perception of accentedness and nativeness as opposed to the audio group?

The between-group comparison of accentedness of each speaker (#1, 2, 3, & 4 respectively) reported the following results. As for the Sp1 accentedness, the audio/video group each assigned 5.87/6.39. As for the Sp2 accentedness, the audio/video group produced 8.65/8.79. For the Sp3 accentedness, the audio/video group allocated 7.79/8.12. For the Sp4 accentedness, the audio/video group produced 6.57/6.68. The assigned scores represented MA, NNA, FNA, and LA, respectively. These findings portray that the video group evaluated the accentedness of all speakers more positively. The possible reasons
could be explained by the following studies. For instance, Evans, Conol, and Youngs (2001) posited that the use of “image datasets facilitates the integration of image resources with pedagogical practice” (p.192). Just as their study indicated, the current study also portrayed that the listeners used the SCI variable as image datasets. The use of the SCI variable (video image and written information) facilitated the integration of SCI resources with the perceptual process of accentedness. Conclusively, the SCI variable influenced the listeners’ perception of accentedness of each speaker and, hence, the video group evaluated the perception of accentedness and nativeness of the four speakers more positively.

To some extent, the written SCI of the speakers mediated background knowledge of the listener participants in the present study thereby redefining their predominant perceptions, views, and interpretations. Accordingly, their evaluations were influenced by redefined perceptions. In reference to the audio group, the listeners’ perception of accentedness, nativeness, and comprehensibility that defined NNS identity came from listener factors that were unmediated by SCI. On the contrary, the video group’s perception of accentedness, nativeness, and comprehensibility emerged out of the listeners’ mediated interaction with the context of learning or obtaining information (Peirce, 1995, 1997). Some of these contexts helped the listeners to operate psychological functions (Vygotsky, 1978) that were conducive to the positive perception of the accents.

With respect to the between-group comparison of nativeness of each speaker (#1, 2, 3, & 4, respectively), the results were similar to those of accentedness of each speaker. As for the Sp1 nativeness, the audio/video group each allocated 4.33/4.53. As for the Sp2
nativeness, the audio/video group each produced 8.60/9.43. For the Sp3 nativeness, the audio/video group each assigned 5.57/7.23. For the Sp4 nativeness, the audio/video group produced 4.80/5.37. These findings demonstrate that the video group evaluated the nativeness of the speakers more positively than the audio group. The possible reasons are stated as follows: As the results of the perception of accentedness showed, the listeners also used the SCI variable for the perceptual process of evaluating the nativeness of each speaker. The SCI variable played a positive role in the listeners’ perception of nativeness. As Evans, Conol, and Youngs (2001) posited, the use of image dataset (the SCI variable) facilitated the integration of SCI resources with perception of nativeness of each speaker. Similar to the perception of accentedness, the degree to what extent the SCI was positively used for the perceptual practice of nativeness varied from the DA of four speakers.

The process of internalization implies how the listeners internalize new information of SCI into listener affiliated socio-cultural factors. When the listeners did not know the information of a FNA speaker, they used predominant socio-cultural factors, which were the results of unconsciously and individually modified and inherently possessed information (Mays, 1982). Because the listeners did not obtain new information about this speaker, the listener factors were controlled by predominant ideas and perception, and, hence, facilitative integration of information did not occur. However, when the information of this speaker was disclosed, the listeners positively integrated this information into the evaluation of nativeness of FNA, and they internalized this information into their perceptual process. As a result of the integration of information, the
listeners internalized the SCI of FNA speaker, and their tolerance about accentedness increased as opposed to the time when internalization did not occur. While the information of the speaker was disclosed through image dataset (the SCI variable), this variable positively facilitated the integration of SCI resources with the perceptual process of Sp3 nativeness. Therefore, in the case of Sp3 nativeness, the video group used the SCI in perceiving FNA positively, and these results implied that the nativeness of FNA was predicted by SCI.

One possible reason why the video group produced higher scores for the perception of accentedness and nativeness of three NNS may be explained by the following reasons: The video group who received the SCI of the speakers and were aware of the ethnic background of the NNS could evaluate the speakers’ accent based on their “socially acceptable norm”. Miller (2001) stated that the results of analyzed data cannot represent reality because the research participants manipulate the answer in order to produce a socially acceptable answer. Therefore, the possibility exists in the sense that the video group evaluated the NNS more positively to create a socially appropriate answer. Whether the between-group difference occurred as a result of the video groups’ awareness of speakers’ ethnicity is worthwhile to explore. However, in order to reduce the possibility of obtaining a socially acceptable answer, the researcher clearly announced the following two aspects: (1) listeners were not required to keep their name on the instruments, and, hence, they did not have to worry about revealing their personal identities, and (2) the evaluation would be followed by initial perception or judgment about accent itself without regard to other SCI of the speakers. Likewise, the researcher
administered the data collection process by announcing these issues, and decreased the possibility of socially acceptable answers.

Why did the listeners assign lower (or higher) scores for the perception of nativeness as opposed to the accentedness of three NNS (or one NS)?

For this study, the term “accentedness” was used as an omnibus term that comprises “nativeness” of the speaker. The researcher intended to measure accentedness using the concept of “non-native” or “native” accent because these terms were believed to indicate clearly the perception of “accentedness” from the view point of listeners. The results of three NNS showed that both the audio and the video group consistently assigned lower scores to evaluate the nativeness of each speaker. In other words, they judged the concept of “nativeness” more strictly as opposed to “accentedness”. On the other hand, for the perception of Sp2 nativeness, the results varied. For example, the audio group assigned the following scores for the evaluation of the accentedness versus nativeness for speakers #1, 2, 3, 4 (5.87/4.33, 8.65/8.60, 7.79/5.57, & 6.57/4.80). The video group showed the same results for the evaluation of accentedness versus nativeness for three non-native speakers #1, 3, 4 (6.39/4.53, 8.12/7.23, & 6.68/5.37). However, for the evaluation of nativeness of a NS (#2, NNA), the video group produced a higher score: 8.79/9.43. These results indicate that the audio group consistently produced lower scores for the perception of nativeness of four speakers.

On the contrary, the video group assigned a higher score for the Sp2 nativeness. Among many possible reasons, the role of the SCI can produce the following claims. In
order for the listeners to perceive the Sp2 nativeness, visual cues and SCI played an important role in their perceptual practices. In brief, visual cues and SCI had an impact on the video group’s perception of Sp2 nativeness. When the SCI of Speaker #2 (NNA) was disclosed, the video group assigned a higher score for the evaluation of Sp2 nativeness. This interpretation was supported by the comparison of the audio group’s perception of Sp2 nativeness. The audio group assigned 8.60 for the evaluation of Sp2 nativeness as opposed to Sp2 accentedness (8.65). This group did not produce a higher score for the evaluation of Sp2 nativeness. When the listener participants did not receive visual cues and SCI, the audio group produced a lower score. Although the listeners spoke the same American English, without SCI and visual clues, they produced a lower score in perceiving the nativeness of a NS of American English. Conclusively, SCI and visual cues played a certain role in the evaluation of nativeness of NS who was defined as a NNA of American English.

In the case of three NNS, the listeners assigned lower scores to evaluate the nativeness of these speakers, and the following reasons may answer the phenomena. In other words, when the listeners listened to various accents, they produced different perceptions, and SCI and visual cues played a certain role in the evaluation of nativeness of these NNS. The findings for the Speaker #3 support this claim. As opposed to MA and LA speakers, FNA speaker demonstrated relatively low or close to non-accented speech. This speaker’s accent allowed listeners to apply diverse socio-cultural cues in perceiving and evaluating Sp3 nativeness. The comparison between the audio and the video group could support this explanation. While the audio group rated 5.57 for Sp3 nativeness, the
video group rated a higher score of 7.23. The results are interesting because the video group possibly used SCI and visual cues to judge the fact that Speaker #3 was from a non-native country. In brief, the video group evaluated Sp3 nativeness as native-like (7.23) compared to the audio group (5.57). This result indicates that the video group used SCI and visual cues for the evaluation of Sp3nativeness from a positive point of view. Even if the video group possessed predominant socio-cultural factors (e.g., sex, age, major, exposure, and interaction), SCI was effectively used as a positively internalized socio-cultural factors. Without the role of SCI, the between-group differences might not vary from the results of MA (4.33/4.53) or LA (4.80/5.37) speakers.

Considering that the video group’s perception of Sp3 nativeness is relatively higher, the findings for the MA and LA were not as positive. The nativeness scores obtained by the audio group was below 5.00 (4.33/4.80) and the Sp3 nativeness obtained by the audio group was below 6.00 (5.57). On a 10 point scale pairs of bipolar adjectives, below 5.00 indicated that the speakers were below average. For the perception or evaluation of the nativeness of NNS, the NL evaluated NNS based on NS principle or predominant ideology of Western perspectives as Kumaravadivelu (2002) argued. To some extent, although the NNS may obtain higher scores in the perception of accentedness, their scores do not necessarily imply nativeness. In brief, the concept of non-accentedness is not parallel to nativeness because NS may speak with different accents but they are still labeled as NS. This study found that non-accent does not define nativeness, and the prevailing myths that NNS are not regarded as inherently equal to NS (Phillipson, 1992) were reconfirmed.
Why did visual cues and SCI of the speakers have an impact on the listeners’ perception of comprehensibility?

Many studies argued that visualized information increased learners’ abilities to obtain information (Evans, Conol, & Youngs, 2001; Mays, 1982; Paivio, 1971; Rieber, 1994; Shortridge & Emmert, 2002; Winn & Snyder, 1996). However, the findings of the current study contradict those studies which supported positive impact of visualization on the cognitive domains (Rieber, 1994). As opposed to the results of perception of accentedness, the video group assigned lower scores for the perception of comprehensibility of Speakers #2, 3, and 4 (9.68/9.30, 9.58/8.83, and 8.59/8.00). These scores fell in the range indicating a high-comprehensible level. On the other hand, Speaker #1 fell in the range between intermediate-high comprehensibility, and the video group assigned a slightly higher score for the perception of Sp1 comprehensibility (7.27/7.59). Actually, the obtained score indicated that all speech samples fell above the range of intermediate-high comprehensible level. Although all obtained scores indicated good comprehensibility, interesting results occurred in the sense that the video group assigned lower scores compared to the audio group in the perception of Sp2, Sp3, and Sp4 comprehensibility.

The correlational analysis showed that negative association between SCI and comprehensibility occurred. Briefly, the listeners used SCI but they used these cues negatively for the perception of comprehensibility of all speakers. The disclosure of the SCI variable to the video group made them react more negatively to each speaker’s comprehensibility compared to the audio group who did not receive the SCI variable.
These findings support Winn and Snyder (1996)’s study concerned with the complex mechanism of visual metaphors or envisioning processes in order for individuals to solve problems or learn new information. They claimed that complicated links between visual imagery and the creation of mental process and mental representation exist, and human thinking or comprehension process entails various symbol systems that are used as tools in operation with the comprehension process. To what extent the complicated process and metaphors that were represented through motions and images had an impact on listeners’ comprehensibility and comprehension would be a valuable follow-up study for a future discussion.

Additionally, whether the visual cues had an impact on comprehension can be explained by the influence of a moderate accent containing slight difficulty in understanding. In particular, the visual cues might only be helpful to comprehend the MA, which represents difficulty in understanding or an intermediately comprehensible accent. Perhaps, while listening to the MA speaker’s sample, the listeners experienced difficulty in understanding, felt the necessity to concentrate, and such an attitude might lead the video group to assign higher scores. Therefore, the visual clues for the MA speaker influenced listeners’ comprehension positively and the video group assigned a higher score. However, the majority of the listeners evaluated that the LA, FNA, and NNA speakers’ speech samples were HC, and did not have difficulty in understanding. Perhaps these speakers’ visual cues and video clips distracted their attention and, hence, lead the listeners to rate lower scores for the perception of comprehensibility. From various points of view, many other unexplained factors are expected to be involved in these results.
Whether visual cues function as a source of distraction is an interesting factor to explore. Studies regarding to what extent the complicated process and level of attention would influence listeners’ comprehensibility is suggested as a further study.

**While interaction made the largest contribution to predict comprehensibility, why did length of time make the largest contribution to predict accentedness?**

The regression analysis used to predict listeners’ perception of accentedness showed that *length of time* made the largest contribution to this dependent variable. Holding all other independent variables in the model constant, the value of -.26 implied that the score on the dependent variable will decrease by .26 points for every one unit increase in the value of *length of time* variable. The participants who were enrolled in the program for a long period of time evaluated the speakers’ accentedness more negatively. In other words, the listeners who were enrolled in the program for a short period of time evaluated the NNS who spoke with varied accents more positively and evaluated them as native accentedness. These findings are explained by the following two points of view.

On the one hand, the short period of enrollment could provide the participants with more tolerance towards non-native accentedness. On the other hand, the short period of enrollment had an impact on not being able to distinguish or discern the varied accents. In brief, the sensitivity or discernability to distinguish varied accents could be influenced by the short length of time in the program as undergraduate and graduate students. Whether the negative association between listeners’ perception of accentedness and *length of time*
in the program is influenced by little tolerance or discernability can be an area of future research.

Similar to the findings of accentedness, the regression analysis used to predict listeners’ perception of nativeness showed that the value of *exposure* (-.31) and *interaction* (-.33) made the largest contribution to this dependent variable. Holding all other independent variables in the model constant, the score on the listeners’ perception of nativeness will decrease by .31 points for every one unit increase in the value of the *exposure* variable. Holding all other independent variables in the model constant, the score on the listeners’ perception of nativeness will decrease by .33 points for every one unit increase in the value of the *interaction* variable. The interpretations of these findings are similar to the interpretations used to explain the perception of accentedness such as tolerance or discernability issues.

On the one hand, the short period of being exposed to foreign accented speech could provide the participants with more tolerance towards non-native accentedness. In the same way, the less interaction with the people who spoke with accents could have an impact on increasing the tolerance towards non-native accents. On the other hand, the short period of being exposed to foreign accented speech could make it harder for the participants to discern the varied accents. This led the less exposed participants to evaluate the nativeness of NNS as native. Similarly, if the participants had less interaction with non-native accents, it could have an impact on decreasing their ability to discern the non-native accent. This caused the participants who had less interaction with non-native accents to evaluate the nativeness of NNS as native. This study did not intend
to probe whether the negative association between listeners’ perception of nativeness and exposure/interaction is influenced by tolerance or discernability. However, by using some recommendations and suggestions stated in this study, these issues can be addressed in a future study.

**Recommendations**

The findings of the current study are useful to NS-NNS interlocutors who use English for communication purposes (hereafter: NNS are identified with FBES to avoid NS-NNS dichotomy). As the findings showed, the socio-cultural cues of the NNS did make a difference in positively influencing the perceptions of NS towards NNS. The socio-cultural differences can facilitate the discourse between NS and FBES and prevent preconceived notions of non-nativeness and differences. Generally, English NS and FBES have been shown to use different communication or discourse strategies, and the communication strategy differences of FBES were depicted as negative factors in communication. For example, Scollon and Scollon (2000) indicated that NS usually open the discussion with the introduction of a main point and then develop arguments to support it. On the contrary, FBES from Asian countries (Asian speakers) tend to feel uncomfortable stating their suggestions first before providing reasoning. The result of different communication strategies between NS and FBES leads to “the unfair and prejudicial stereotypes of the inscrutable Asian or of the frank and rude westerner” (p. 2). Even though the communication strategy differences between NS and FBES have been depicted as unconstructive factors, the current study found that the socio-cultural
differences of FBES did positively influence the perception of communication although
the accents varied. Instead, the accent variation was treated as an identifying factor in
recognizing socio-cultural differences, and these differences were used positively in
perceiving the utterances of the FBES.

These findings extend the definition of a speech community, which is defined as
“a group of people who interact by means of speech” (Bloomfield, 1933, p.42). Murray
(1998) used this definition to include all members who speak the same language as one
speech community. Unfortunately, he failed to define bilingualism to the boundaries of
any speech community. As opposed to these two scholars, Hymes (1964a) focused on
the interrelated aspect between sociality and language based on anthropological
perspectives and combined linguistics with anthropology instead of restricting the scope
of a speech community into a “linguistic form, a given code, or speech itself” (p.3). He
argued that a situation and a group of people who participate in meaningful language
practices are primary to defining this term rather than a simple language. Similarly,
Philipsen (1992) claimed that a community should be “bound together in some relation
of shared sentiment and mutual responsibility’ (p. 14). In this sense, the current study is
relevant to the field of sociolinguistics that studies how NS-FBES members share (1)
linguistic variation, (2) communication rules, or (3) shared meanings for interpreting
communication (Braithwaite, 1997). Lo (1999) argued that no community is
linguistically homogeneous. In any speech community, interlocutors share certain
degrees of membership and degrees of shared orientation towards norms. Accordingly,
the current study can contribute to the socio-linguistics field considering how NS-FBES

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create membership or community identities to succeed in a speech community. In essence, the present study showed how participants with accented English can use socio-cultural differences positively because NS do not perceive the differences as negative factors impeding communication. Therefore, in order to find factors that make NS-FBES communication successful and to improve FBES membership of a speech community, the present study recommends in an investigation of communication patterns between NS-FBES (e.g., the role of interlocutor, language practice, and context).

American policy makers who try to embrace differences of FBES in American educational settings can also benefit from the present study. As the findings presented, this study implied how human beings are fundamentally able to regulate and organize their “own mental and physical activity through the appropriation of the regulatory means employed by others” (Lantolf, 2000, p. 14). Lantolf’s (2000) claims support the current study in that psychological functioning such as the perception of NNS accent and comprehensibility can come under the voluntary control of the individuals who appropriately operate tools and systems. From these perspectives, American educational policy makers can use this study to help NL regulate and reconstruct the concept of non-nativeness and non-native accent positively. Even if the listeners possess predominant or inherent socio-cultural variables (e.g., sex, age, major, exposure, and interaction), educators need to emphasize the usefulness of these differences between interlocutors more effectively. In doing so, the educators can help NS and FBES internalize socio-cultural differences positively.
Furthermore, this study can be useful to American curriculum developers and teachers who embrace the socio-cultural differences of FBES. Actually, salient differences are expected between speakers of English who come from various cultural backgrounds (Scollon & Scollon, 2000). However, while considering and respecting the students’ differences, teachers can educate NS students to have an open-mind towards speech differences in all speakers. This can be achieved by emphasizing the differences and incorporating them into an official teaching curriculum. American students need to learn that communication does not only occur between NS but also takes place between NS-FBES. The purpose of advocating the differences of FBES should be to introduce the NS “to the basic principles of discourse as they apply to communication between members of different groups or, as we will put it, interdiscourse communication” (Scollon & Scollon, 2000, p.2). In this way, American professionals and teachers should promote communication between NS and FBES counterparts in the context of international communication.

Particularly, considering the growing number of Foreign-Born International Teaching Assistants (FBITA) in American Universities, the current study will be helpful to American academic professionals and curriculum developers. They could attempt to use the cultural differences between FBITA and American students from a positive point of view. Including improving English proficiency of FBITA, academic professionals in America need to first and foremost develop a curriculum that helps to bring the differences of FBITA more openly into American classrooms. Since the socio-cultural differences and accent differences of FBES no longer impede communication, American
educators need to create programs that promote the identity of the FBITA positively and train them to learn and use target cultures efficiently. Although FBITA are dichotomized as NNS and may be regarded as “linguistically deficit” (Phillipson, 1992) English speakers, they should be considered as legitimate participants (Lave & Wenger, 1991) who have the same ownership of speaking English (Peirce, 1995, 1997).

The current study can be applied to TESOL professionals and EPI instructors who seek an appropriate model for teaching English for communication purposes. This study currently portrayed that non-accentedness did not directly imply nativeness. Gatbonton et al. (2005) defined the term nativeness as “the degree to which learners’ speech is free of segmental and suprasegmental features characteristic of their native language” (p. 492). The NS principle is the approach for the language learners to achieve “special control over a language; insider knowledge about ‘their’ language” (Davis, 1991). The fact that NNS were perceived positively in the perception of accentedness does not necessarily imply that they are NS or that they can be labeled as NS. Therefore, TESOL professionals and EPI professionals need to emphasize that non-accent does not define nativeness. NS who may speak with various accents are still NS but NNS who may speak with non-accents are NNS. Since the concept of non-accentedness cannot be parallel to nativeness, teaching “native-like” pronunciation should not be the objective of EPI. While being aware of this, TESOL and EPI professionals need to understand that EPI can be taught differently in different contexts, and this is based on the need of the language learners.
The different contexts of teaching English in periphery communities such as outer circle countries and expanding circle countries (Kachru, 1992) call for different teaching principles in EPI. NNS professionals need to pay attention to the local differences and context differences because such environmental factors are essential in satisfying local needs of NNS students. NNS professionals understand the need of the language learners in outer circle countries, English language and its discourse undergo considerable differences compared to changes, and these can function as strength of NNS teaching professionals. As Canagarajah (1999) pointed out, NNS teaching professionals should focus on their strengths and not undermine their abilities. Instead, NNS teachers are more qualified to use pedagogies and materials that are socio-culturally relevant to their students. Additionally, they feel more comfortable with teaching English through a more critical and transformative pedagogy in order to negotiate the socio-political realities of their communities.

Implications

As the recommendations suggested, the current study also implied that in addition to accent differences, various SCI of FBES played a crucial role in identifying socio-cultural differences between NS-FBES. In order to perceive the identity of the speakers, the listeners used visual cues and SCI, which provide implications for how the human mind is mediated by the nature of the relationship between the psychological processes and socio-cultural differences (Lantolf, 2000). In other words, the current study demonstrated that the listeners’ perception of NNS accent and socio-cultural differences
between NS-FBES can be influenced or changed through culturally constructed artifacts. By creating and organizing, the artifacts can be reasonably constructed and used for the purpose of mediating psychological processes of perception. This can be applied to the listeners’ psychological processes in perceiving the varieties of NNS English. The mediated artifacts can educate NS to embrace the varieties of English as well as linguistic and socio-cultural differences of NNS. As a result, this study implies that the appropriate integration of socio-culturally constructed systems of mediation into human activities can contribute to challenging a stereotype or a negative psychological operation such as NS-NNS dichotomy.

The findings of the study showed that the non-accented speaker (Sp3) was not perceived as a native accented speaker. In this study, NS who spoke English with an accent were still regarded as NS (e.g., Sp2, NNA, for this study) while NNS who spoke English with a non-accent (e.g., Sp3, FNA, for this study) were not perceived as NS. Therefore, people who speak English with an accent (e.g., southern accent), and possess socio-cultural factors (e.g., being born and educated in English speaking countries and sharing the cultures of these countries), are referred to as NS. Even though the NS principle focuses on the degree of speech that is free of segmental and suprasegmental characteristic of native language (Gatbonton et al., 2005), NNS need additional socio-cultural factors which make it possible for them to be called as NS.

In short, NNS who do not possess unique accents and who are rated as non-accented speakers become labeled as NNS because they do not possess the socio-cultural factors that enable them to maintain nativeness. Even if they speak English with a non
accent, they have difficulty in achieving nativeness, and, hence, perpetually will be identified as NNS. In doing so, the findings of the current study challenge the NS principle of EPI pedagogy and imply that NNS do not need to emulate NS while arguing that NNS do not need to be taught to obtain a native-like pronunciation or a native-like accent. As Jenkins argued (2000, 2002), “nativeness” is the non-achievable feature for the NNS to obtain, and as far as the concept of nativeness and non-accentedness is not equal, obtaining native-like pronunciation does not ensure nativeness of NNS. The NS principle that focuses on teaching native-like pronunciation and accent misleads the purpose of language learning.

The issues concerning the NS principle suggest the paradigm shift from the NS principle to the NNS principle. According to Davis (1991), NS acquire language at an early age, represent a language learning model, and are regarded as a goal of another language learner. Additionally, Phillipson (1992) emphasized that NS represent the best embodiment of the norm and the target for language learners, and such beliefs constructed the NS principle, which focuses on teaching learners’ speech free of segmental and suprasegmental characteristic of the native language users (Gatbonton et al., 2005). However, the NNS principle is defined by the notion that NNS teachers are more qualified to become language teaching professionals and language learning role models, which Thomas (1999) insisted as follows:

“NNS not only empathize with their students but they make another very vital contribution to the field, although rarely acknowledged. They bring something unique to the ESOL profession. They are role models; they are success stories; they are real images of what students can aspire to be…It is time to clean house and to truly value diversity” (p. 12).
Likewise, diversity, empathy, and constructive images of NNS professionals can positively contribute to the paradigm shift from the NS principle to the NNS principle. Similar to Kramsch’s (1997) claim, the current study additionally implies that the idealization of NS as a language learning model should be questioned because the idealized NS does not exist. Kramsh argued that NS do not speak the idealized, standardized version of their language: their speech is influenced by geography, occupation, age, and social status of the speakers. In this way, she doubted whether students of foreign languages, who have multilingual perspectives on the target language, culture, and literature, should be taught by the NS principle or should emulate the non-existent NS. Accordingly, the model of bilingual users of English (referred to as BUE, McKay, 2002) or multicompetent and multilingual users of English (referred to as MUE, Pavlenko, 2003) can provide the answer for the EPI principle. In essence, this model emphasizes the need to recognize and value L2 learners’ resources and cultures and utilize these positively in the L2 classrooms. Additionally, the concerns about how to improve linguistic proficiency and cultural sensitivity of NNS are supported by this model.

The principles of teaching English should be reconsidered because the place of NS and NNS are influenced by socio-political issues aligned with the position and power of English (Davis, 1991). Braine (1999) argued that ever since English was taught internationally, the need to change the principle became an important issue. Lippi-Green (1997) indicated that while NS are represented as dominant and the powered language groups, foreign accented speakers or NNS are perceived as non-dominant and
marginalized groups. This can misrepresent national, racial, religious, socio-economic, and sexual identities of FBES and possibly call up certain stereotypes in alignment with accents. However, the current study implies that teaching English should represent the local needs more constructively and consciously in order to reduce discrimination between dominant versus non-dominant groups. The principles of teaching English should consider the needs of teaching and learning English as an international language because NNS construct dominant groups, and they do not need to be called peripheral users of English. In particular, in the context of teaching English as a Foreign Language (EFL), majority of teaching professionals are NNS. The NNS principle elicits the requirement of complementing the local needs and aspirations because most teaching professionals share socio-cultural factors identified as bilingual (or multilingual). These contexts are called English language teaching in peripheral communities, and teaching professionals should consider the contextual need. In doing so, the teaching professionals in EPI and TESOL should place the position of language teachers appropriately, and empower their identities as appropriate language learning models.

In order for NNS teaching professionals to represent the contextual needs and achieve their goal as appropriate language learning models, the current study supports Samimy and Brutt-Griffler’s (1999) position that “ELT professionals should first continue to sharpen their expertise” (p. 143). These include linguistic and pedagogical knowledge, and teaching skills. They also suggested that NNS professionals need to create or seek opportunities to discuss issues from diverse and multilingual contexts in order to raise their own awareness and consciousness. By doing so, NNS teaching
professionals can play an important role as catalysts to better understand the paradigm change of the NS-NNS issues in the contexts of teaching English internationally. As the current study implied, native listeners perceived NNS identities as a positive factor. Combining their socio-cultural cues with appropriate linguistic knowledge can help the teaching professionals in EFL to construct a positive identity as language learning models. Linguistically and culturally appropriate training can help them conceive and implement the pedagogy and curriculum in order to perform well in their field. The English teaching professionals should be trained to focus on their positive aspects as NNS professionals by valuing the fact that they share language learning experiences with their students and recognize their resources and cultures. Although the findings of this study present some implications concerning how to use listener factors and reasons as to why NS-NNS dichotomy and the NS principle should be challenged, it still has some limitations. Therefore, further research is recommended in the following sections.

Further Research

Although the findings can be applied to various fields and areas in EPI and TESOL, they did not address the impact of speaker variability, indirectness of communication, tolerance of the listeners, and the impact of visual cues without including SCI. These underscore the need for further studies with the following four points. First, selecting the speakers who represented the same amount of accent variability was difficult. Even though the current study tried to review the literature regarding which
factors help divide speakers’ accentedness, few studies portrayed decisive criteria to categorize the speakers’ accentedness into certain designated categories. In order to overcome this limitation, the researcher recruited a panel of experts working at the Spoken English Program at OSU since they have their own calibration criteria to assess international students’ accentedness. For this study, the criteria employed in their program were used to define speakers’ accentedness, and the calibration performed by the experts ensured validity. However, if the present study recruited ordinary students with the same characteristics of the research participants as a panel of experts, the results might have been different. This concern can be answered by additional research while designing a systematic method to calibrate accentedness of FBES, and this can contribute to creating informational resource for TESOL and EPI.

Second, the regression model to predict listener’s perception of comprehensibility indicated that the video group rated lower scores in the evaluation of comprehensibility. These findings are likely to be related to the impact of distracting factors represented through motions and images and complicated process and metaphors. Whether the visual cues functioned as distracting factors and had an impact on listeners’ comprehensibility and comprehension would be a valuable follow-up study. Basically, the current study was conducted in restricted settings in that the speakers did not directly interact with the listeners. The speakers were pre-recorded and the listeners passively listened to the pre-recording. As a result, no direct interaction between interlocutors existed and, hence, meaning negotiations or interactional conversation did not occur. In other words, if the study purported to understand the comprehension process in interactional settings,
insights from socio-cultural interactional and discourse-analytic perspectives should have been incorporated as Nakahama, Tyler, and Lier (2001) portrayed. They argued that *signal* is used in response to problematic utterances of the speakers, and this is a nonverbal indicator which functions as repair negotiations and meaning negotiations. If future studies include motions and images in face-to-face interactions, why and how visual cues would affect the comprehension process of NL negatively could be answered.

Additionally, the regression analysis indicated that *length of time* in the program made a negative contribution to listeners’ perception of accentedness. The *interaction* with accented speakers contributed negatively to comprehensibility. The audio and the video group perceived and evaluated the three speakers as highly comprehensible, however; the video group rated lower scores to the speakers compared to the audio group. Mays (1982) found that certain experiences and background of the listeners cause sensitivity and accuracy difference of non-verbal perception. The participants who had more contact with foreign accented students and who had experienced considerable language training seemed to have more sensitivity and increased understanding of speakers’ non-verbal communication. As Mays’s findings indicated, the limitations of the current study regarding how and why the socio-cultural differences of the listeners made a negative contribution, are recommended as a future study.

Third, whether the negative contribution of *length of time* and *interaction* is influenced by little tolerance or discernability of the listeners can be an area of valuable future research. John and Shepherd (2004) defined the term tolerance as “freedom from bigotry or undue... one person not only allows another to say or think what he or she will
but does so in a painstakingly nonjudgmental way” (p.170). They argued, “tolerance is invoked to varying degrees under the banner of human rights, religious diversity, economic parity, the eradication of sexual discrimination, freedom of scientific inquiry, and a host of other interests” (p. 174). The importance of tolerance increases because material conditions and a globalized world lead human beings to enter into a new condition of neighborliness (Chaine, 2002). In a sense, he argued that increasing tolerance helps construct healthy communities whether it is local or global. Unfortunately, the contemporary study did not measure participants’ tolerance or deploy how the listeners’ tolerance had an influence on activating the listener factors that made the largest contribution to predict their perception of accentedness and comprehensibility. Therefore, findings as to whether the relationship between tolerance and NNS accentedness exists can be a valuable future study.

Finally, the descriptive data indicated that the video group who received SCI evaluated the accentedness of all speakers more positively. Moreover, a correlational analysis supported that the delivery type difference (video versus audio) had a low association with the perception of accentedness and nativeness. The group who received SCI predicted listeners’ perception of nativeness. On the other hand, the video group evaluated the comprehensibility more negatively and a correlational analysis supported these findings. Unfortunately, the present study did not identify the independent impact of the video or SCI, and this raises a controversial issue of which factor was more influential in triggering the listeners’ perception differences. This study assumes that if the video group was compared to the audio group without receiving SCI, the findings and
results may be different. Because the current study did not separate the impact of video-only or SCI-only as opposed to the audio group, the studies regarding the relationship between video and listener responses versus SCI and listener responses are recommended as a future research.

In the same way, this study did not probe to what extent a single component of SCI (ethnic background, nationality, academic background, years of second language learning experience (L2), and experiences of being exposed to an English speaking country) had an impact on listeners’ responses. Assuming that SCI had a positive impact on the listeners’ perception, valuable findings can be obtained by using each component of SCI as an independent component to detect listeners’ perception difference. Conclusively, to what extent the single component of SCI influenced listeners’ responses can be a meaningful future study.

**Limitations of the Study**

Even though this study was designed to provide and portray listeners’ perceptions and affiliated factors to perceive accented speech, the study has six pre-supposed limitations. The first limitation is related to the generalization of this outcome because the 60 native listeners were restricted to one mid-western university in the United States, and, hence, may not be an ideal representation of native listeners. In order to generalize the results of regression analysis, the more participants are required.
Secondly, listeners’ perceptions may cause subjectivity issues. Listeners’ responses to the four recorded speech samples may be influenced by personal bias against particular voices or accents (Derwing & Munro, 2005). However, many studies that used the rating-judgment methods (e.g., Derwing & Munro, 1997, 2005; Derwing, Munro, & Wiebe, 1997, 1998; Munro, & Derwing, 1995, 1999, 2001) have demonstrated a high degree of reliability among groups of listeners.

The third limitation is associated with the differences of listeners’ socio-cultural experiences with foreign accented speakers. More specifically, if native listeners did not interact with accented speakers, they could possibly encounter difficulties in understanding foreign accented speech. This may include quality and quantity differences of exposure to accented speech in their lifetime and result in tolerance gap between the people who are unfamiliar with accented speech and those who are familiar.

Fourth, the scores assigned to each speaker raise questions about the variability of the speakers’ accentedness, and the small difference of speaker variability resulted in small correlation coefficients. These scores may not appropriately represent the degree differences or variability because the calibration criteria selected by the panel of experts did not have a marked difference between each score. In fact, the calibration criteria had a small difference between the scores to assess NNS accentedness. Also, the perception of these differences may vary from rater to rater. If systematic methods are designed to calibrate accentedness of FBES, this can contribute to creating informational resources for EPI and, hence, reduce certain errors in assessing the degree of accentedness of NNS.
Another limitation is related to the nature of the quantitative study, which restricted obtaining information regarding the qualitative perspectives from the listeners’ point of view. This design had a limitation in probing how and what components of SCI had an impact on the listeners’ perception positively. Since SCI comprises of the following components: ethnic background, nationality, academic background, years of second language learning experience (L2), and experiences of being exposed to an English speaking country, valuable findings can be obtained by designing an interview questionnaire for the listeners to speculate on how each component of SCI influenced their perceptual process. In order to overcome the limitations of the present study, a mixed methodology such as the combination of quantitative and qualitative design can answer the questions, which this study did not.

Finally, the current study is limited in not having differentiated the terms “perception of comprehensibility” and “comprehensibility”. According to the dictionary definition (Merriam Webster, 2007), comprehensibility is “the capability to contain or hold within a total scope, significance, or amount”. However, this study operationally defined this term as “how the listener intuitively or physically senses the degree and overall rating of ease to understand a given speaker or the perception of the level of difficulty encountered to understand the given speech” based on the constitutive definition. Although the process of comprehension requires grasping the nature, significance, or meaning of certain aspects as this dictionary indicated, this study did not clearly find whether the listeners exactly grasped the nature, meaning, and significance of the contents. Likewise, this study has certain limitations of applying the subtle
differences of this term and could possibly raise some controversial issues. With a view
to examining the differences between comprehensibility and the perception of
comprehensibility, a systematically designed instrument can answer the questions.

Likewise, this study is limited in the sample size of research participants, listener
variables, speaker variability, methods, and definition of terms. However, the findings
also produced various implications for American educational policy makers, curriculum
developers, EPI/TESOL professionals, and NS-FBES interlocutors. From a pedagogical
point of view, the limitations can also contribute to providing the direction of future
studies in order to challenge NS-NNS dichotomy and the NS principle. In the same way,
the present study demonstrated that socio-cultural differences are not factors that impede
communication and mutual understanding of interlocutors. Conclusively, this study
proposes that embracing the differences among speakers is essential in increasing the
understanding between interlocutors. While reducing preconceived notions and
stereotypes constricted by dichotomy of NS-NNS, this will facilitate communication
between NS-FBES.


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APPENDIX A

Consent Form for Speaker Participants
CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL RESEARCH

Speaker Participants

Principal Investigator: Keiko. K. Samimy. Ph. D. (Samimy.2@osu.edu)
Co-Investigator: Sung Hui Cheong, M.A. (Cheong.14@osu.edu)

Protocol #: 2007 E 0043
Title of the Project: “The role of listener affiliated socio-cultural factors in perceiving native accented versus foreign accented speech”

Description:

[1] Purpose: The study in which you will be participating purports to predict the factors that may have an impact on the perception of native accented speech and foreign accented speech.

[2] Procedures: If you consent to participate in this study, you will be asked to attend a video/audio taping session. The session will include the following:
--(1) Reading textual material (approximately 90-100 seconds)
--(2) Video/audiotaping of the recording session
--(3) An interview session to gather socio-cultural information of the participants
--(4) Audiotaping the interview session for transcription purposes

[3] Duration: The session will last for approximately 30-60 minutes (This includes the explanation of procedures).


[5] Withdrawal: You can withdraw the consent to participate at any time during the audio/video recording and interview session without any disadvantage, penalty or prejudice.

***If you have any further questions or concerns, please contact the following persons.
CONSENT FOR PARTICIPATION IN THE STUDY

I consent to participating in research entitled: “The role of listener affiliated socio-cultural factors in perceiving native accented versus foreign accented speech”

Keiko K. Samimy, Principal Investigator, or his/her authorized representative Sung Hui Cheong has explained the purpose of the study, the procedures to be followed, and the expected duration of my participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Furthermore, I understand that I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date:_________________________  Signed: _________________________________
(Principal Investigator or his/her authorized representative)

Date:_________________________  Signed: _________________________________
(Participant)
APPENDIX B

Reading Material for Speaker Participants
Alumni Grants For Graduate Research And Scholarship

Graduate School

Summary
The Alumni Grants for Graduate Research and Scholarship (AGGRS) Program provides up to $2,000 to support the research and scholarship of doctoral or MFA candidates for their dissertations or theses. Awards are based on merit, according to the following criteria: (1) quality of the project; (2) qualifications of the applicant; (3) the evaluation of the candidate and the project by the advisor; and (4) budget and need.

Eligibility
All doctoral or MFA candidates without financial support for the aspect of the project for which they are requesting funding are eligible to apply. Funding must be for work that is essential to the dissertation or thesis. Awardees receiving stipends from associateship, fellowship, or traineeship appointments may apply for AGGRS funding.

Institutional Review Boards
All projects involving human subjects and/or laboratory animals must be approved by the appropriate Institutional Review Board before graduate student’s research begins. For more information, visit the Office of Responsible Research Practices web site at http://orrp.osu.edu.

Contact: Ms. Dena Myers at 292-9490
APPENDIX C

Interview Protocol for Speaker Participants
Directions: Please read the following questions and feel free to answer the questions during the audio-recording.

<1> Early Childhood English Education Variables (ECEE) prior to the age of 15.

1.1. In the English-speaking settings

[1.1.1.] Did you study English pronunciation prior to the age of 15 in an English-speaking country?

[1.1.2.] At what age did you start learning English in an English-speaking country? Please, mention any other countries.

[1.1.3.] In which English-speaking country did you first study English?

1.2. Through formal instruction (school settings) in non-English-speaking countries (e.g., Korea and Taiwan)

[1.2.1.] Did you study English prior to the age of 15 in the context of a non-English-speaking country? (hereafter: referred to as EFL, which indicates English as a Foreign Language context)

[1.2.2.] Did you learn English through formal instruction (school settings) in an in EFL context?

[1.2.3.] At what age did you first study English in a formal school setting?

[1.2.4.] In school settings, were you taught by non-native English instructors?
[1.2.5.] Did the instructors help you improve your pronunciation? (e.g., native or non-native instructors)

[1.2.6.] Did the instructors help you reduce your accent? (e.g., native or non-native instructors)

[1.2.7.] What methods do you think were most effective to improve English pronunciation in school settings?

[1.2.8.] What methods do you think were most effective to reduce your accent in school settings?

1.3. Informal instruction (non-school settings) in non-English-speaking countries (e.g., Korea and Taiwan)

[1.3.1.] Did you study English prior to the age of 15 through informal instruction in an EFL context?

[1.3.2.] At what age were you first exposed to English?

[1.3.3.] In non-school settings, were you taught by non-native English instructors?

[1.3.4.] In non-school settings, were you taught by native English instructors?

[1.3.5.] Who helped you improve your pronunciation?

[1.3.6.] Who helped you reduce your accent?

[1.3.7.] What methods do you think were most effective to improve English pronunciation in non-school settings?
[1.3.8.] What methods do you think were most effective to reduce accent in non-school settings

<II> Environmental Variable after the age of 15 in English-speaking settings.

2.1. Formal School settings in English-speaking countries (e.g., U.S.A and other English-speaking countries)
[2.1.1.] How long have you studied English in an English-speaking country?

[2.1.2.] How long have you studied English? (Total years of studying including both EFL and English-speaking settings)

[2.1.3.] At what age did you first study English in an English-speaking country?

[2.1.4.] Did you try to improve your pronunciation?

[2.1.5.] Who helped you improve your pronunciation?

[2.1.6.] Did you try to reduce your accent?

[2.1.7.] Who helped you reduce your accent?

2.2. Informal non-school settings in English-speaking countries (e.g., U.S.A and other English-speaking countries)
[2.2.1.] Did you try to improve your pronunciation through informal instruction? (e.g., tutor, ESL program, etc)

[2.2.2.] Who helped you improve your pronunciation?
[2.2.3.] What methods do you think were most effective to improve English pronunciation in non-school settings?

[2.2.4.] Did you try to reduce your accent through informal instruction? (e.g., tutor, ESL program, etc)

[2.2.5.] Who helped you reduce your accent?

[2.2.6.] What methods do you think were most effective to reduce English pronunciation in non-school settings?

<III> Demographic Information

[3.1] Native language

[3.2] Other language spoken at home

[3.3] Current occupation

[3.4] Years of total exposure to English

**This is the end of interview-protocol. Thank you for cooperation!***
APPENDIX D

A Letter of Proposal for a Panel of Experts
A Letter of Proposal for a Panel of Experts

Dear Dr. Susan Sarwark,

I am Sung Hui Cheong, a doctoral candidate in Foreign and Second Language Education and conducting a dissertation study titled: “THE ROLE OF LISTENER AFFILIATED SOCIO-CULTURAL FACTORS IN PERCEIVING NATIVE ACCENTED VERSUS FOREIGN ACCENTED SPEECH.”

This study purports to predict the two dependent variables: perception of accentedness and comprehensibility by listeners who are the native speakers of American English (NS or referred to as Native Listeners, NL) on the basis of degree of accentedness of three non-native speakers of English (NNS). The hypothesis underlying this study is that the listeners’ characteristics or factors may play a significant role in measuring accentedness and comprehensibility of utterances.

Unfortunately, however, due to lack of expertise and experience, I have been struggling with defining “degree of accentedness of three NNS”. Therefore, hereby I am writing a letter to request official and professional advice from ESL staffs, who can judge or rate the degree of accentedness of the speakers. I strongly believe that professional input of staffs who have been working at Spoken English Program will increase the internal reliability and validate the results of this study.

You time commitment will take approximately 10 minutes, and your task will be limited to listen to the three speech samples (speaker #1-#3, 90-100 seconds each) and answer the following question: “Based on your perception of accent (for this study,
foreign accentedness or non-native accent is referred to as “accent”), which category do you think the speaker falls in?”

I am more than happy to hear valuable input from you. If you have further questions, please, e-mail me at Cheong.14@osu.edu or call me at the following number: 408-529-4656.

Sincerely,

SungHui Cheong
Doctoral Candidate
Foreign and Second Language Education
Teaching and Learning
College of Education and Human Ecology
Columbus, OH.
43235
APPENDIX E

Inter-rater Reliability Check Form I
Inter-rater Reliability Check Form I

A Panel of Experts

Principal Investigator: Keiko K. Samimy, Ph. D. (Samimy.2@osu.edu)
Co-Investigator: Sung Hui Cheong, M.A. (Cheong.14@osu.edu)
Protocol #: 2007 E 0043
Title of the Project: “The role of listener affiliated socio-cultural factors in perceiving native accented versus foreign accented speech”

Question #1. Please listen to the speech sample of speaker #1 and answer the following question. (Listening, 90-100 seconds)
Based on your perception of accent (for this study, foreign accentedness or non-native accent is referred to as “accent”), which category do you think speaker #1 falls in?
[1] Moderately Accented Speaker (   )
[2] Low Accented Speaker (   )
[3] Non Accented Speaker (   )

Question #2. Please listen to the speech sample of speaker #2 and answer the following question. (Listening, 90-100 seconds)
Based on your perception of accent (for this study, foreign accentedness or non-native accent is referred to as “accent”) which category do you think speaker #2 falls in?
[1] Moderately Accented Speaker (   )
[2] Low Accented Speaker (   )
[3] Non Accented Speaker (   )

Question #3. Please listen to the speech sample of speaker #3 and answer the following question. (Listening, 90-100 seconds)
Based on your perception of accent (for this study, foreign accentedness or non-native accent is referred to as “accent”), which category do you think speaker #3 falls in?
[1] Moderately Accented Speaker (   )
[2] Low Accented Speaker (   )
[3] Non Accented Speaker (   )

Date: ___________________________  Signed: ________________________________
(The name of expert)

Date: ___________________________  Signed: ________________________________
(Principal Investigator or his/her authorized representative)
APPENDIX F

Inter-rater Reliability Check Form II
**Inter-rater Reliability Check Form II**
**A Panel of Experts**

**Principal Investigator:** Keiko. K. Samimy. Ph. D. (Samimy.2@osu.edu)
**Co-Investigator:** Sung Hui Cheong, M.A. (Cheong.14@osu.edu)
**Protocol #:** 2007 E 0043
**Title of the Project:** “The role of listener affiliated socio-cultural factors in perceiving native accented versus foreign accented speech”

**Question #1.** Please listen to the speech sample of speaker #1 and answer the following question. (Listening, 90-100 seconds)
Based on your perception of accent (for this study, foreign accentedness or non-native accent is referred to as “accent”), which category do you think speaker #1 falls in?
[1] Foreign Accented Speaker (   )
[2] Native Accented Speaker (   )

**Question #2.** Please listen to the speech sample of speaker #2 and answer the following question. (Listening, 90-100 seconds)
Based on your perception of accent (for this study, foreign accentedness or non-native accent is referred to as “accent”) which category do you think speaker #2 falls in?
[1] Foreign Accented Speaker (   )
[2] Native Accented Speaker (   )

**Question #3.** Please listen to the speech sample of speaker #3 and answer the following question. (Listening, 90-100 seconds)
Based on your perception of accent (for this study, foreign accentedness or non-native accent is referred to as “accent”), which category do you think speaker #3 falls in?
[1] Foreign Accented Speaker (   )
[2] Native Accented Speaker (   )

Date: ___________________________  The name of expert
Signed: ________________________________

Date: ___________________________  (Principal Investigator or his/her authorized representative)
Signed: ________________________________
APPENDIX G

Consent form for Listener Participants
CONSENT FOR PARTICIPATION IN SOCIAL AND BEHAVIORAL RESEARCH

Listener Participants

Principal Investigator: Keiko. K. Samimy. Ph. D. (Samimy.2@osu.edu)
Co-Investigator: Sung Hui Cheong, M.A. (Cheong.14@osu.edu)
Protocol #: 2007 E 0043
Title of the Project: “The role of listener affiliated socio-cultural factors in perceiving native accented versus foreign accented speech”

Description:

[1] Purpose: The study in which you will be participating purports to predict the factors that may have an impact on the perception of native accented speech and foreign accented speech.

[2] Procedures: If you consent to participate in this study, you will be assigned to either an audio or a video group. The session will include the following:
--(1) Audio group will listen to four audio clips (approximately 90-100 seconds, each)
--(2) Video group will watch four video clips (approximately 90-100 seconds, each)
***The audio and video groups are both exclusive categories and a participant assigned to the audio group cannot join the video group, and vice versa.
--(3) After listening or watching the four clips, you will be asked to complete a Listener information Questionnaire and a Listener Perception Questionnaire.

[3] Duration: The session will last for approximately 20-25 minutes (This includes the explanation of procedures).

[4] Compensation: A gift card ($5) will be provided when the session is completed.

[5] Withdrawal: You can withdraw the consent to participate at any time during the audio/video group session, without any disadvantage, penalty or prejudice.

[6] Confidentiality: The participants’ information and written response will be protected by keeping the data confidential and will be discarded after this study ends.

***If you have any further questions or concerns, please contact the following persons.
CONSENT FOR PARTICIPATION IN THE STUDY

I consent to participating in research entitled: “The role of listener affiliated socio-cultural factors in perceiving native accented versus foreign accented speech”

Keiko K. Samimy, Principal Investigator, or his/her authorized representative Sung Hui Cheong has explained the purpose of the study, the procedures to be followed, and the expected duration of my participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Furthermore, I understand that I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ___________________________ Signed: ________________________________________
(Participant)

Date: ___________________________ Signed: ________________________________________
(Principal Investigator or his/her authorized representative)
APPENDIX H

Sign-up Sheet for Listener Participants
Title: Listeners affiliated socio-cultural factors in perceiving native versus foreign accented speech.

Sign-up Sheet for Listener Participants

Please, sign-up only one date and time that you are available to volunteer. The tasks will take approximately 20 minutes. This includes the explanation of this study. All participants will begin the experiment at the same time under the same conditions during before (or after) class session on one of the following three days (February 20th, 27th, March 6th). For those who signed up for before-class group, please do not forget to come to the class at least 20 minutes earlier. A Panera gift card ($5) will be provided for the participation. Thank you so much for your cooperation.

*** The participants for this study will be: OSU Students, White Caucasian, and Native Speakers of American English.

The room for this study will be: Arps 003 (The next door of 002)

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222
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<td>The room for this group will be: Arps 003</td>
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<td>The room for this group will be: Arps 003</td>
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APPENDIX I

Listener Information Questionnaire (LIQ) for the Audio Group
Listener Perception Questionnaire (LPQ) for the Audio Group
Listener Information Questionnaire (LIQ) for the Audio Group (Colored Copy)

*Direction: Please compete the blanks*

1. What degree are you pursuing? (e.g., BA/MA/Ph.D) _____________

2. How many years have you been in this program? (e.g., One year and two months) ___________YEARS and ___________MONTHS

3. Your major(s) at OSU (e.g., Major in Agricultural Communication) MAJOR IN _________________

4. Your age ___________YEARS

5. Your sex (Please, check one.) MALE ( ) FEMALE ( )

6. Have you ever been abroad? (Please, check one. For this study, “abroad” is defined as non-English speaking countries) NO ( ) YES ( )

7. If you have ever been abroad, how long have you stayed there? (e.g., 3 days) ___________DAYS

8. *During the past year,* have you talked to anyone who spoke with a foreign-accent? (Please, check one) NO ( ) YES ( )

9. *During the past year, on average,* how often did you talk to someone who spoke with a foreign-accent? (e.g., thirty minutes per week) ______________MINUTES/WEEK

***This is the end of LIQ. Thank you so much for your cooperation!***
INSTRUCTION

The purpose of this session is to measure your perceptions of three audio-taped speech samples that you are going to hear. Each sample will last approximately 90-100 seconds. There will be a pause between the samples. Please rate each sample on the 10 points scales below. There are six pairs of bipolar adjectives with ten spaces between the two opposite adjectives. Please, make sure you understand all adjectives.

EXAMPLES

If you feel that your perception is very closely related to one end of the scale, you should place your check mark as follows:

Unfair _X_: ___: ___: ___: ___: ___: ___: ___: ___: ___  Fair
Unfair ___: ___: ___: ___: ___: ___: ___: ___: ___: ___X  Fair

If you feel that your perception is quite closely related to one or the other end of the scale (but not extremely), you should place your check mark as follows:

Weak __: __X: ___: ___: ___: ___: ___: ___: ___: ___ Strong
Weak __: ___: ___: ___: ___: ___: ___: ___X: ___: ___ Strong

If your perception is slightly related to one side as opposed to the other side, then you should place your check mark as follows:

Passive __: __: __X: ___: ___: ___: ___: ___: ___: ___ Active
Passive __: ___: ___: ___: ___: ___: ___X: ___: ___: ___ Active

The adjective toward that you check depends on which of the two ends of the scale seem most represent your perception that you are judging.

IMPORTANT:

1. Place your check marks in the middle of the spaces, not on the boundaries at the colons.
2. Be sure you check every scale for every concept -- do not omit any.
3. Never put more than one check mark on a single scale. (Miller, 2003)

We will now listen to a speech sample. Please, turn the page.
### Section 1: Listeners’ Perception of Accentedness (Speaker #1)

#### Accent:

<table>
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<th>Rating</th>
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<td>Good</td>
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### Section 2: Listeners’ Perception of Comprehensibility (Speaker #1)

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Section 3: Listeners’ Perception of Accentedness (Speaker #2)

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Section 4: Listeners’ Perception of Comprehensibility(Speaker #2)

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Section 5: Listeners’ Perception of Accentedness (Speaker #3)

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Section 6: Listeners’ Perception of Comprehensibility (Speaker #3)

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<td>Imperceptible</td>
<td>⬜⬜⬜⬜⬜⬜⬜⬜⬜⬜</td>
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Please, do not move to the next page until you are told to do so.
Section 7: Listeners’ Perception of Accentedness (Speaker #4)

**Accent:**

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<td><strong>Pleasing</strong></td>
<td>Irritating</td>
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<td><strong>Strong</strong></td>
<td>Weak</td>
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<td><strong>Pleasant</strong></td>
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<td><strong>Uncomfortable</strong></td>
<td>Comfortable</td>
</tr>
<tr>
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<td>Non-native</td>
</tr>
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Section 8: Listeners’ Perception of Comprehensibility(Speaker #4)

**Comprehensibility:**

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<tbody>
<tr>
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<tr>
<td><strong>Ambiguous</strong></td>
<td>Unambiguous</td>
</tr>
<tr>
<td><strong>Perceptible</strong></td>
<td>Imperceptible</td>
</tr>
</tbody>
</table>

***This is the end of LPQ. Thank you so much for your cooperation!***
APPENDIX J

Listener Information Questionnaire (LIQ) for the Video Group
Listener Perception Questionnaire (LPQ) for the Video Group
Listener Information Questionnaire (LIQ) for the Video Group (White Copy)

Direction: Please compete the blanks

[1] What degree are you pursing? (e.g., BA/MA/ Ph. D) ____________

[2] How many years have you been in this program? (e.g., One year and two months)
   ____________YEARS and ____________MONTHS

[3] Your major(s) at OSU (e.g., Major in Agricultural Communication)
   MAJOR IN ________________

[4] Your age ____________YEARS

[5] Your sex (Please, check one.) MALE ( ) FEMALE ( )

[6] Have you ever been abroad? (Please, check one, For this study, “abroad” is defined as non-
   English speaking countries) NO ( ) YES ( )

[7] If you have ever been abroad, how long have you stayed there?
   (e.g., 3 days)
   ____________DAYS

[8] During the past year, have you talked to anyone who spoke with a foreign-accent? (Please, check one)
   NO ( ) YES ( )

[9] During the past year, on average, how often did you talk to someone who spoke with a
   foreign-accent?
   (e.g., thirty minutes per week)
   ____________MINUTES/WEEK

***This is the end of LIQ. Thank you so much for your cooperation!***
Listener Perception Questionnaire (LPQ) for the Video Group (White Copy)

INSTRUCTION
The purpose of this session is to measure your perceptions of three audio-taped speech samples that you are going to hear. Each sample will last approximately 90-100 seconds. There will be a pause between the samples. Please rate each sample on the 10 points scales below. There are six pairs of bipolar adjectives with ten spaces between the two opposite adjectives. Please, make sure you understand all adjectives.

EXAMPLES
If you feel that your perception is very closely related to one end of the scale, you should place your check mark as follows:

Unfair _X_: ___: ___: ___: ___: ___: ___: ___: ___: ___ Fair

Unfair ___: ___: ___: ___: ___: ___: ___: ___: ___: ___X_ Fair

If you feel that your perception is quite closely related to one or the other end of the scale (but not extremely), you should place your check mark as follows:

Weak __: __X_: ___: ___: ___: ___: ___: ___: ___: ___ Strong

Weak __: ___: ___: ___: ___: ___: ___: ___X_: ___: ___ Strong

If your perception is slightly related to one side as opposed to the other side, then you should place your check mark as follows:

Passive ___: ___: __X_: ___: ___: ___: ___: ___: ___: ___ Active

Passive ___: ___: ___: ___: ___: ___X_: ___: ___: ___ Active

The adjective toward that you check depends on which of the two ends of the scale seem most represent your perception that you are judging.

IMPORTANT:
1. Place your check marks in the middle of the spaces, not on the boundaries at the colons.
2. Be sure you check every scale for every concept -- do not omit any.
3. Never put more than one check mark on a single scale. (Miller, 2003)

We will now listen to a speech sample. Please, turn the page.
From now on, we will watch and listen to a speech sample. Before watching a video clip of the first speaker, please read the following socio-cultural information of speaker #1.

Speaker #1 was born in Taiwan and her native language is Mandarin. She studied English for 17 years through formal school instruction and also went to a private English cram school in Taiwan. She had not lived abroad in an English speaking country before 2001. She came to the U.S.A. to pursue a Master’s degree in education at OSU and currently lives here.

Please, do not move to the next page until you are told to do so.
### Section 1: Listeners’ Perception of Accentedness (Speaker #1)

**Accent:**

<table>
<thead>
<tr>
<th>Accent</th>
<th>____: ____: ____: ____: ____: ____: ____: ____: ____: ____</th>
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</thead>
<tbody>
<tr>
<td>Bad</td>
<td>Good</td>
</tr>
<tr>
<td>Pleasing</td>
<td>Irritating</td>
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<tr>
<td>Strong</td>
<td>Weak</td>
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<tr>
<td>Pleasant</td>
<td>Unpleasant</td>
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<tr>
<td>Uncomfortable</td>
<td>Comfortable</td>
</tr>
<tr>
<td>Native</td>
<td>Non-native</td>
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</table>

### Section 2: Listeners’ Perception of Comprehensibility(Speaker #1)

**Comprehensibility:**

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<tr>
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<tr>
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<td>Mis-understandable</td>
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<tr>
<td>Intelligible</td>
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<td>Unambiguous</td>
</tr>
<tr>
<td>Perceptible</td>
<td>Imperceptible</td>
</tr>
</tbody>
</table>

Please, do not move to the next page until you are told to do so.
From now on, we will watch and listen to a speech sample. Before watching a video clip of the second speaker, please read the following socio-cultural information of speaker #2.

Speaker #2 was born in Louisiana and studied there till he graduated from university. He completed his master’s degree at OSU and is pursuing a doctoral degree in social science at OSU. Although he speaks English with a native speaker accent, he does not perceive that he has a southern accent.

Please, do not move to the next page until you are told to do so.
### Section 3: Listeners’ Perception of Accentedness (Speaker #2)

#### Accent:

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<tr>
<th></th>
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### Section 4: Listeners’ Perception of Comprehensibility(Speaker #2)

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<td>Imperceptible</td>
<td></td>
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Please, do not move to the next page until you are told to do so.
From now on, we will watch and listen to a speech sample. Before watching a video clip of the third speaker, please read the following socio-cultural information of speaker #3.

Speaker #3 was born in Korea and her native language is Korean. She came to the U.S.A at the age of 2 and returned to Korea at the age of 9. Although she studied English in the U.S, she and did not continue studying English in Korea until secondary school. She has studied English for approximately 22 years and completed her bachelor’s and master’s degree from a university in Korea. She is currently pursuing a doctoral degree in education at OSU since 2003.

Please, do not move to the next page until you are told to do so.
### Section 5: Listeners’ Perception of Accentedness (Speaker #3)

#### Accent:

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### Section 6: Listeners’ Perception of Comprehensibility (Speaker #3)

#### Comprehensibility:

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</table>

Please, do not move to the next page until you are told to do so.
From now on, we will watch and listen to a speech sample. Before watching a video clip of the fourth speaker, please read the following socio-cultural information of speaker #4.

Speaker #4 was born in Korea and his native language is Korean. In 1997, he immigrated to the U.S.A at the age of 16. He began learning English by watching Disney movies in Korea, imitating phonological systems, and through sentence repetition drills. Overall, he has studied English for approximately 16 years. He completed junior high school in Korea and majored in computer science and electrical engineering at a mid-western university.

Please, do not move to the next page until you are told to do so.
## Section 7: Listeners’ Perception of Accentedness (Speaker #4)

**Accent:**

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<th>Score</th>
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## Section 8: Listeners’ Perception of Comprehensibility (Speaker #4)

**Comprehensibility:**

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<tr>
<th>Comprehensibility</th>
<th>Score</th>
</tr>
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<tr>
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</tbody>
</table>

***This is the end of LPQ. Thank you so much for your cooperation!***
APPENDIX K

Residuals (Histograms and Scatterplots) and Partial Regression Plot
Histogram

Dependent Variable: accentedness

Mean = 2.89E-15
Std. Dev. = 0.939
N = 60
Histogram

Dependent Variable: nativeness

Histogram

Dependent Variable: comprehensibility
Scatterplot

Dependent Variable: comprehensibility

Scatterplot

Dependent Variable: accentedness
Scatterplot

Dependent Variable: nativeness

Scatterplot

Dependent Variable: comprehensibility
Partial Regression Plot

Dependent Variable: nativeness

Partial Regression Plot

Dependent Variable: nativeness
Partial Regression Plot

Dependent Variable: nativeness

Partial Regression Plot

Dependent Variable: nativeness
Partial Regression Plot

Dependent Variable: comprehensibility