Factors Affecting Korean Learners’ English Pronunciation and Comprehensibility

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(Korea University)


While the importance of pronunciation for successful oral communication has been gaining in recognition, the teaching of English pronunciation has been neglected. In order to offer suggestions for teaching English pronunciation in Korea, this study examines correlations between Korean learners’ individual factors and their English pronunciation and reveals which pronunciation features possess the strongest correlation with the learners’ comprehensibility. A one-to-one interview and a questionnaire were conducted with 34 Korean university students to investigate 16 individual factors. In addition, English speech samples (a self introduction and a reading of a passage) were recorded. Two native speakers (NSs) of English rated subjects’ pronunciation (consonants, vowels, word stress, intonation) and comprehensibility on a 9-point scale. The results of the statistical analyses of individual factors, pronunciation, and comprehensibility indicated that subjects’ experience living in an English-speaking country and ability to mimic were related to acquisition of English pronunciation. As to learners’ comprehensibility, it was revealed that intonation had the strongest correlation to comprehensibility. The findings suggest that providing a communicatively-oriented atmosphere, increasing learners’ self-confidence, and setting comprehensibility as a teaching priority can lead to more effective pronunciation instruction.

I. INTRODUCTION

In English-language learning and teaching, the importance of comprehensible pronunciation has been growing in recognition through the influence of Communicative Language Teaching (CLT) which views pronunciation as a critical element in successful communication (e.g., Hinofotis & Bailey, 1980). Before the advent of CLT, however, pronunciation was taught merely to build linguistic competence (Pennington & Richards,
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1986), making the accuracy (native-like pronunciation) the main focus of pronunciation instruction. While the treatment of pronunciation has varied over the history of language teaching, Stern (1992) claimed that pronunciation is universally important in three aspects: “linguistic, communicative, and affective” (p. 114). It appears that the latter two aspects have lately been emphasized over the first due to researchers’ assertions that pronunciation is indispensable for intelligibility and is linked to identity (Dalton & Seidlhofer, 1994; Dalton-Puffer, Kaltenboeck, & Smit, 1997; Seidlhofer, 2001; Setter & Jenkins, 2005; Sifakis & Sougary, 2005).

Despite general agreement on the value of pronunciation, pronunciation instruction in the contexts of English as a Second Language (ESL) and English as a Foreign Language (EFL) has been neglected (Harmer, 2007; Kelly, 2000). Harmer suggested three possible reasons why teachers may lack enthusiasm for teaching pronunciation: (1) a lack of confidence in pronunciation instruction, (2) limited class time for teaching all areas of English, and (3) doubt about the effect of pronunciation instruction. Similarly, Kelly pointed out that the teaching of pronunciation may be neglected not because of disinterest on the part of the instructor, but rather due to the teachers’ lack of knowledge and strategies for teaching pronunciation. Simply put, many teachers may not be sure how to teach pronunciation. It seems that the situation is amplified in countries where English is not prevalent, since most school teachers are non-native speakers of English, and both teachers and students rarely observe any immediate effects of pronunciation instruction due to the rarity of opportunities to use English in this context.

In Korea, for example, English education rarely places emphasis on pronunciation, as reflected in Jookyung Park’s (1996) statement: “in Korean EFL classrooms, teaching English pronunciation has not been alive” (p.142). She explained that teaching English pronunciation is difficult for Korean teachers due to the extensive differences between the Korean and English sound systems, scant authentic exposure to English, a lack of instructor competence in English pronunciation, the teachers’ insufficient knowledge of and strategies for teaching English pronunciation, and a lack of self-confidence on the part of the teachers. However, it is likely that teachers’ difficulties stem from insufficient experience and training in the teaching of pronunciation.

In fact, English education in Korea has set a target for building students’ communicative competence since the release of the fourth national curriculum in the 1980s. However, classroom realities do not seem to reflect this goal, generally remaining strongly dependent on the Grammar-Translation Method which focuses on written language (Ke Soon Lee, 1983). Especially, since critical high school or university entrance exams mainly consist of grammar, vocabulary, and reading comprehension assessments, oral interaction has been assigned less importance in the classroom. Accordingly, English pronunciation instruction has not been treated as an urgent issue in Korean classrooms.
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Though it is impossible to implement English speaking tests and promote teaching pronunciation overnight, empirical studies are helpful to improve the conditions for teaching English pronunciation due to their ability to offer field-applicable information, according to Derwing and Munro (2005). The issue remains, however, that less research has been conducted regarding pronunciation compared to other facets of English. Derwing and Munro pointed out that a researcher’s duty is not simply to conduct pertinent research on pronunciation but also to interpret research on phonetics and phonology which may be difficult or impractical for teachers.

In this context, this study was designed to offer suggestions for the teaching of English pronunciation in Korea. First, it investigates individual factors related to Korean learners’ English pronunciation which both teachers and learners can refer to when teaching and learning pronunciation. Second, it reveals which pronunciation features impact comprehensibility so that pronunciation instruction can be oriented toward improving learners’ comprehensibility. The results of this study can be applied to setting goals and teaching priorities of English classrooms in Korea. Before introducing the experiment, a short review of factors affecting English pronunciation acquisition and the two terms, intelligibility and comprehensibility, is appropriate.

II. THEORETICAL BACKGROUND

1. Factors Affecting Pronunciation Learning

Researching learners’ individual factors can be fruitful because, compared to other aspects of language, pronunciation learning is more strongly influenced by these factors (Acton, 1984; Cenoz & García Lecumberri, 1999). Also, awareness of learners’ variables and their incorporation into the classroom are helpful for planning effective pronunciation classes, as Wong (1987) asserted. The following factors detail contributions by Avery and Ehrlich (1992), Celce-Murcia, Brinton, and Goodwin (1996), and Kenworthy (1987):

Age. It has been widely observed that younger learners surpass adults in terms of pronunciation because adults are beyond the critical period, often regarded as puberty. In 1967 Lenneberg (as cited in Scovel, 2000) suggested that learners are likely to succeed in language acquisition begun before the onset of puberty, otherwise loss of brain plasticity accelerates, causing difficulties acquiring native or native-like pronunciation. However, results from empirical studies are conflicting. Asher and Garcia (1969), Oyama (1976), and Thompson (1991) yielded a “the younger, the better” (Scovel, p. 213) outcome, while Snow and Hoefnagel-Hohle (1978) and Neufeld (1980) did not. Apparently, caution is advisable when applying the results of these studies to classrooms. In this current study,
age of beginning English learning is included as a factor in order to further examine its relation to pronunciation skill.

**Exposure.** Obviously, language input, inside and/or outside the classroom, is a primary source of language acquisition. In general, compared to an EFL setting, input in an ESL context is richer due to learners’ exposure to English in everyday life. Also there exist more frequent opportunities for learners to grow engaged in meaningful communication in an ESL setting. However, it cannot be claimed that an ESL situation is better across the board than an EFL environment, according to Celce-Murcia et al. (1996) and Kenworthy (1987). These scholars asserted that because each learner may respond differently to their surroundings, it is possible for some ESL learners to use their native language(s) more than English, while other EFL learners may attempt to maximize their exposure to English and to be engaged in more frequent English communication. This study includes both ESL and EFL environments and investigates which factors impact pronunciation ability. Six factors are included: the subject’s major in university, experience living in an English-speaking country, experience living with NSs of English, private English education, English conversation in everyday life, and focused-pronunciation study.

**Native language.** Avery and Ehrlich (1992) argued that the learner’s native language (L1) impacts production and perception of English pronunciation because the learner produces and perceives sounds in accordance with the L1 sound system. Suter’s (1976) study, for example, revealed that L1 determines differences in English pronunciation accuracy; Arabic and Persian speakers rated higher than speakers of Japanese and Thai. Suter explained that the phonological structures of Arabic and Persian are more conducive to English pronunciation than those of Thai and Japanese. However, L1 is excluded as a factor in this study due to all the subjects being native speakers of Korean.

**Motivation.** In 1972 Gardner and Lambert (as cited in Brown, 2000) introduced two concepts, integrative motivation and instrumental motivation. The former refers to learning a language in order to integrate into the target community, while the latter applies when a learner’s goal is related to getting a better job, passing tests, and so forth. Although these concepts have long been debated, empirical studies have provided mixed results. For instance, Suter (1976) discovered a negative correlation between integrative motivation and pronunciation accuracy, whereas Eun Jun (2006) found a strong correlation between the two. In the mean time, in a study by Thompson (1991), integrative motivation did not correlate to pronunciation ratings. This current study also examines the correlation between these two types of motivation and pronunciation acquisition.

**Attitude.** Attitude is an important construct in social psychology and has been increasingly in focus in the field of language learning and teaching since language cannot be isolated from social practice (Dalton-Puffer et al., 1997). Six divisions of subjects’ attitudes are examined in this study: attitude toward English study, attitude toward NSs of
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English, attitude toward NSs’ culture, attitude toward the importance of English ability in Korea, attitude toward Koreans with superior English proficiency, and attitude toward pronunciation skill as part of English ability.

*Phonetic ability.* Kenworthy (1987) claimed that certain individuals surpass others in discriminating and mimicking sounds. According to her, *aptitude for oral mimicry, phonetic coding ability, and/or auditory discrimination ability* are used in the literature as synonyms for this term. Phonetic ability can be measured in both objective and subjective manners. In the objective method, subjects are required to follow given instructions and mimic or discriminate after listening to NSs (e.g., Suter, 1976). In the subjective method, however, the measurement is based on subjects’ self-reporting on their phonetic ability. The subject’s ability to mimic is included in this study, following Thompson’s (1991) subjective method.

2. Intelligibility and Comprehensibility

Pronunciation teaching has been undergoing a shift from the ‘nativeness principle’ to the ‘intelligibility principle’ (Levis, 2005). While the former coexists with the latter, much pronunciation research has placed its focus on *intelligibility* or *comprehensibility* (Anderson-Hsieh, Johnson, & Koehler, 1992; Derwing & Munro, 1997; Deterding & Kirkpatrick, 2006; Field, 2005; Gyeonghee No, 2007; Hahn, 2004; Matsuura, Chiba, & Fujieda, 1999; Munro & Derwing, 1995).

Just as the adjectives in each term, ‘intelligible’ and ‘comprehensible’, are synonymous with ‘understandable’, intelligibility can be broadly identified through Kenworthy’s (1987) definition, “being understood by a listener at a given time in a given situation” (p. 13). However, the two terms are often distinguished from one another in the literature. As indicated in Table 1, intelligibility is generally more concerned with recognition of what is said, while comprehensibility is more about the perception of the difficulty of understanding the utterance. Accordingly, intelligibility is generally measured by raters’ transcription of audio-taped speech and comprehensibility by scalar judgment, though the manner of measurement varies by study (Munro & Derwing, 1995).

Intelligibility or comprehensibility is a complicated construct. Comprehension is not simply influenced by pronunciation but rather by additional factors such as vocabulary, rate of speaking, familiarity, grammar, and hesitation (Anderson-Hsieh & Koehler, 1988; Fayer & Krasinski, 1987; Gass & Varonis, 1984). Empirical studies have yielded mixed results regarding which factor most impacts intelligibility or comprehensibility (see Munro & Derwing, 1995). Even when the scope is narrowed exclusively to pronunciation, findings continue to be conflicting; some favor segmentals, while others point to suprasegmentals. For instance, Anderson-Hsieh et al. (1992) discovered that
suprasegmentals are more influential than segmentals, but Fayer and Krasinski found the opposite to be true. In this study, the term *comprehensibility* refers to the degree of difficulty by listeners of understanding a speaker’s pronunciation.

<table>
<thead>
<tr>
<th>Study</th>
<th>Intelligibility</th>
<th>Comprehensibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Derwing &amp; Munro (1997)</td>
<td>The extent to which the acoustic-phonetic content of the message is recognizable by a listener</td>
<td>Judgments on how difficult or easy an utterance is to understand</td>
</tr>
<tr>
<td>Field (2005)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ludwig (1982)</td>
<td></td>
<td>The degree to which the interlocutor understands what is said or written</td>
</tr>
<tr>
<td>Munro &amp; Derwing (1995)</td>
<td>The extent to which a speaker’s message is actually understood by a listener</td>
<td></td>
</tr>
</tbody>
</table>

Due to the inconclusive results described above and insufficient empirical studies, it is unlikely for teachers to have a great deal of practical information regarding which factors promote or hinder learners’ understandability as Field (2005) pointed out. Therefore, more studies need to be conducted, and that need was the starting point of the current study.

### III. METHOD

1. Subjects and Raters

*Subjects.* The speech samples were recorded from 34 Korean students (23 male and 11 female) at a university located in Seoul, Korea. Their ages at the time of recording ranged from 19 to 26 with a mean of 22.79. They were from 13 different majors, from Humanities to Engineering. All subjects have experience learning from native English teachers. Most of the learners (88.2%) began public English education from middle school (at about 12 years of age), and nearly 90% of the subjects had private English education before and/or after beginning English at school. The youngest age of beginning English learning is four, and the oldest age is 12. Only five students (14.7%) had taken an official speaking test of English. Except those majoring in French, Spanish, and Japanese, subjects do not have better communication skills in languages other than English and Korean.

*Raters.* Two native-born citizens of the United States rated the subjects’ speech samples. Both possessed a graduate level of education in the U.S. and have been teaching English at the subjects’ university. One rater took linguistics courses during his undergraduate studies.
This rater has been teaching English in Korea for five years and had two years of ESL teaching experience in the U.S. and Honduras. This rater has been living in Korea for five years but is highly limited in communicating in Korean. The other rater had not taken any formal linguistics courses but attended education-related courses. The second rater has been living and teaching English in Korea for 10 years and is unable to communicate in Korean.

2. Materials and Procedure

The researcher met with individual subjects by appointment and conducted the experiment as follows:

Interview. As Suter (1976) suggested, an interview is a good way to accumulate detailed and accurate background information such as period of education and experience in English, because subjects tend to answer questions thoroughly and accurately in the presence of the researcher. This experiment began with one-to-one interviews conducted in Korean. In order to lessen the subject’s uneasiness about the experiment, the interview took the form of an informal conversation and included questions designed to be simple to answer. While interviewing, the researcher recorded subjects’ replies. Although the number of questions given to each subject varied, basic queries were put forth: age, major, age of beginning English learning, experience living in an English-speaking country\(^1\), experience living with NSs, private English education, English conversation in everyday life, focused-pronunciation study\(^2\), learning experience with native English teachers, and available languages other than Korean and English.

Since the interviews were bidirectional, the researcher was able to clarify the meaning of questions as necessary. For experience living in an English-speaking country, travel experience was excluded and the minimum period for this category was designated as one year. Regarding experience living with NSs, the researcher offered examples such as having native speaking roommates or living with a native speaking host family. No time limit was set for this category, but the period of time was noted upon receiving a positive response. By private English education, the researcher intended attending private institutes or having tutorial lessons for more than one year. For English conversation in everyday life, the researcher inquired if subjects interact with others (NSs or Koreans) in

\(^1\) For the purpose of this study, this refers to subjects’ residence in a country in which the most commonly spoken or the official language is English.

\(^2\) This was not asked in conjunction with other questions through the interview. Since pronunciation-related questions may affect subjects’ speech recording (subjects possibly pay more attention to their pronunciation if they recognize their pronunciation is investigated), the researcher deferred this question until the questionnaire was completed.
English and if so, the approximate hours of such interaction per week. With regard to focused-pronunciation study, the researcher mentioned that any type of study (even self-study) which focused on pronunciation could be included.

**Speech Recording.** After the interview, English speech samples were digitally recorded. Spontaneous speech, controlled speech, or both are used in the literature. Both types were included in this study to determine the existence of changes in pronunciation when the subjects are free or controlled in content, grammar, vocabulary, and so forth. First, each subject was required to introduce himself/herself in English. No limits were set for the content and the length of the utterances. A self-introduction was selected because the topic should not demand specific knowledge to elicit spontaneous speech. In fact, Matsuura et al. (1999) pointed out that self-introduction does not require complicated sentence structure/vocabulary and prior knowledge. Preparation time (about 10 seconds) was given to each subject. The self-introduction took from 14 seconds to 58 seconds and showed a general pattern: name, age (or grade), major (or school), and interests (or family) were included in the speech.

Second, for controlled speech, each subject read an English reading passage from *Interchange 1* (Richards, Hull, & Proctor, 1990, p. 33). The topic of the passage is polite and impolite questions to ask North Americans (see Appendix B). It was selected for its simplicity in syntax and vocabulary in order that the subject’s fluency can be guaranteed as to the greatest extent. In addition, it contains both declarative and interrogative sentences, which serve to exercise the subject’s intonation. Subjects were told that only one chance would be given for each recording.

**Questionnaire.** Finally, a questionnaire was administered after the speech recording in order to collect attitudinal and motivational information, which may touch on issues too sensitive to answer face-to-face. It was written in Korean and consisted of 22 questions (see Appendix A). Except for two questions inquiring about gender and speaking test scores, subjects were required to answer on a five-point Likert-type scale (1 = strongly disagree and 5 = strongly agree). The questionnaire contained questions related to the factors mentioned organized into motivation, attitude, and phonetic ability sections.

3. Ratings

Two raters listened to 68 speech samples one time only and, while or after listening, marked their overall impressions of pronunciation and comprehensibility on a 9-point scale. The researcher played the recordings one by one following a signal from the rater. Pronunciation was divided into four features for rating: (1) accuracy of consonant articulation, (2) accuracy of vowel articulation, (3) correctness of word stress, and (4) appropriateness of intonation. The criteria for rating comprehensibility were how difficult
or easy it was to understand subjects’ pronunciation. The criteria and rating scale were adapted from previous studies (Anderson-Hsieh et al., 1992 and Munro & Derwing, 1995, respectively) and revised. In order to control the order effect, two differently ordered sets of speech samples were prepared. Each rater met the researcher on a different day for rating, and the researcher presented each rater with the rating sheet (see Appendix C). The researcher requested raters not to be affected by other factors such as grammar, pauses, or vocabulary and not to lump the middle range of the scale.

4. Analyses

Information collected through interviews and questionnaires as well as pronunciation/comprehensibility scores were coded for statistical analyses. First, nominal data gathered from the interviews was classified and coded to discover which groups would result in a significant difference in pronunciation. Age of beginning English learning was grouped into two categories: 4-9, and 10-12 years old. Exposure-related factors were divided into two groups: experienced group vs. non-experienced group. As for subjects’ majors, it was split into two: English major vs. non-English major. Second, the mean of scalar judgment scores on a questionnaire was calculated and correlated with the mean of pronunciation rating, and the mean of the pronunciation rating (consonants, vowels, word stress, and intonation scores) was correlated with the comprehension score.

IV. RESULTS

1. Interview, Questionnaire, and Ratings

A one-to-one interview uncovered when each subject first began their English learning and how they have been exposed to English. As for age of beginning English learning, two subjects began English language study between the ages of 4-6, ten started between 7-9, and 22 were in the 10-12 year old group. While the 4-6 year old group started learning English from their parents at home, the other two groups entered into English study through formal instruction, such as at school or private English institutions. Subjects reported that they have rarely paused in their English study since beginning. Subjects’ English exposure has been summarized in Table 2.

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3 The original division was into three groups: 4-6, 7-9, and 10-12 years old. Since only two subjects were placed in the first group, the researcher reclassified subjects according to one referee’s suggestion. It is notable, however, that the same results (no significant differences between age groups) were obtained.
TABLE 2

Summary of Subjects’ English Exposure

<table>
<thead>
<tr>
<th>EM</th>
<th>ELE</th>
<th>ELN</th>
<th>PEE</th>
<th>ECE</th>
<th>FPS</th>
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<tbody>
<tr>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>No</td>
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<table>
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<tr>
<th>N</th>
<th>13</th>
<th>21</th>
<th>12</th>
<th>22</th>
<th>6</th>
<th>28</th>
<th>30</th>
<th>4</th>
<th>10</th>
<th>24</th>
<th>8</th>
<th>26</th>
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<tbody>
<tr>
<td>%</td>
<td>38.2</td>
<td>61.8</td>
<td>35.3</td>
<td>64.7</td>
<td>17.6</td>
<td>82.4</td>
<td>88.2</td>
<td>11.8</td>
<td>29.4</td>
<td>70.6</td>
<td>23.5</td>
<td>76.5</td>
</tr>
</tbody>
</table>

Note: EM = English Major; ELE = Experience Living in an English-speaking country; ELN = Experience Living with NSs of English; PEE = Private English Education; ECE = English Conversation in Everyday life; FPS = Focused-Pronunciation Study

The majority has never experienced an ESL context such as living in an English-speaking country or living with NSs, but most have had experience with private English education in Korea, indicating the position of English in Korean education. Although English education is considered a priority in Korea, no subjects recalled receiving any pronunciation instruction in school. It is possible that, despite receiving them, subjects failed to remember or recognize lessons in pronunciation. However, this result seems to indicate that pronunciation teaching has not been emphasized in Korea. Those who reported focused pronunciation study explained that they had practiced pronunciation by listening to tapes and repeating their contents for three to six months.

Through the questionnaire, it was found that subjects’ motivation to study English is more related to integration into the NSs’ community or culture ($M = 3.96$) than to career or school work ($M = 3.12$). Regarding subjects’ attitudes, the mean scores are as follow: 3.32 for attitude toward English study, 3.96 for attitude toward NSs of English, 3.71 for attitude toward NSs’ culture, 4.29 for attitude toward the importance of English ability in Korea, 4.24 for attitude toward Koreans with superior English proficiency, and 3.56 for attitude toward pronunciation skill as part of English ability. In summary, the subjects revealed rather neutral attitudes toward studying English and pronunciation, while they showed positive attitudes toward NSs of English and NSs’ culture. Also, subjects acknowledged the high status of English in Korea and desire to be fluent in English. With regard to ability to mimic, the mean of subjects’ self-rating on a five-point scale was 3.09.

The distribution of pronunciation and comprehensibility ratings was described in Figure 1 and 2. None of the subjects received the minimum or maximum score in any pronunciation and comprehensibility ratings.
As for the two raters’ pronunciation and comprehensibility ratings, the *Pearson product-moment correlation coefficient* was computed to determine inter-rater reliability; it
was acceptable, though not strong ($r = .63$, $p < .05$). As a result, the two raters’ pronunciation and comprehensibility ratings were averaged for further analyses. In addition, the mean of the pronunciation ratings for the two types of speech were averaged, because the mean scores did not expose significant differences between the spontaneous speech and controlled speech, as the results of the $t$ test showed ($p > .05$) in Table 3.

<table>
<thead>
<tr>
<th>TABLE 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean Difference of Pronunciation Ratings (Spontaneous vs. Controlled Speech)</strong></td>
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<tr>
<td><strong>Speech Type</strong></td>
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<tr>
<td>Consonants</td>
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<td></td>
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<tr>
<td>Vowels</td>
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<td></td>
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<tr>
<td>Word Stress</td>
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<td></td>
</tr>
<tr>
<td>Intonation</td>
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</tbody>
</table>

2. Individual Factors and Pronunciation

Based on the quantitative data in IV.1, group differences in subjects’ exposure-related factors in pronunciation ratings were examined by $t$ test as summarized in Table 4.

<table>
<thead>
<tr>
<th>TABLE 4</th>
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<tbody>
<tr>
<td><strong>Mean Difference of Pronunciation Ratings between Factor Groups</strong></td>
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<tr>
<td><strong>Factor Groups</strong></td>
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<td><strong>n</strong></td>
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<td><strong>N</strong></td>
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<td><strong>T</strong></td>
</tr>
</tbody>
</table>

*Note. CON = Consonants; VOW = Vowels; WST = Word Stress; INT = Intonation; ABE = Age of Beginning English learning; EM = English Major; ELE = Experience Living in an English-speaking country; ELN = Experience Living with NSs of English; PEE = Private English Education; ECE = English Conversation in Everyday life; FPS = Focused-Pronunciation Study

* $p < .05.$
First, age of beginning English learning revealed no significant group differences, even though the earlier group (4-9 years old) did obtain higher pronunciation ratings than the later group (10-12 years old). Second, the group which majored in English was rated higher than the non-English major group, but significance was only shown in the rating for word stress. Third, the group with experience living in an English-speaking country was rated significantly higher in all four pronunciation features than the group lacking such experience. Fourth, the group with experience living with NSs received higher pronunciation ratings than the group without, but it was only statistically significant for suprasegmental features (word stress and intonation). Fifth, private English education and English conversation in everyday life did not result in significant group differences in pronunciation ratings. Lastly, the group which undertook focused-pronunciation study was rated higher than the group with no experience, but it lacked significance outside of intonation.

Regarding subjects’ motivation, attitudes, and ability to mimic, the Pearson product-moment correlation coefficients were computed to uncover the relation between each factor and pronunciation ratings. As indicated in Table 5, motivational factors showed no correlation with the ratings of four pronunciation features. In addition, it appeared that attitudinal factors gave no correlation with pronunciation ratings, with the exception of attitude toward NSs’ culture and consonants. However, ability to mimic revealed a strong correlation with pronunciation scores.

### Table 5

<table>
<thead>
<tr>
<th></th>
<th>Consonants</th>
<th>Vowels</th>
<th>Word Stress</th>
<th>Intonation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrative motivation</td>
<td>.29</td>
<td>.27</td>
<td>.21</td>
<td>.27</td>
</tr>
<tr>
<td>Instrumental motivation</td>
<td>-.22</td>
<td>-.13</td>
<td>-.23</td>
<td>-.28</td>
</tr>
<tr>
<td>Attitude toward English study</td>
<td>.32</td>
<td>.32</td>
<td>.32</td>
<td>.31</td>
</tr>
<tr>
<td>Attitude toward NSs of English</td>
<td>.16</td>
<td>.15</td>
<td>.04</td>
<td>.09</td>
</tr>
<tr>
<td>Attitude toward NSs’ culture</td>
<td>.34*</td>
<td>.29</td>
<td>.30</td>
<td>.34</td>
</tr>
<tr>
<td>Attitude toward importance of English ability in Korea</td>
<td>-.10</td>
<td>-.10</td>
<td>-.05</td>
<td>-.17</td>
</tr>
<tr>
<td>Attitude toward Koreans with superior English</td>
<td>-.15</td>
<td>-.10</td>
<td>-.11</td>
<td>-.18</td>
</tr>
<tr>
<td>Attitude toward pronunciation skill as part of English ability</td>
<td>.05</td>
<td>.03</td>
<td>-.02</td>
<td>.01</td>
</tr>
<tr>
<td>Ability to mimic</td>
<td>.59**</td>
<td>.66**</td>
<td>.66**</td>
<td>.68**</td>
</tr>
</tbody>
</table>

* *p < .05. **p < .01.

4 The current study fails to offer an explanation for this inconsistency, thus a further study with more subjects is required in order to identify whether this can be generalized.
As indicated in Table 5, ability to mimic is the only factor in this study positively related to subjects’ pronunciation, since other correlation coefficients (Pearson $r$) are below the level of significance. Simple linear regression analysis was further carried out to determine the effect of ability to mimic on pronunciation. To conduct this analysis, the REGRESSION subprogram of the SPSS 12.0 was used which employs the Least Squares Estimators method for regression. The results are shown in Table 6; ability to mimic is a predictor for pronunciation ability. However, it is limited in some aspects, because the $R^2$ is not distinctly high.

3. Pronunciation and Comprehensibility

The relationship between the ratings assigned to the four pronunciation features and comprehensibility scores was examined by computing the Pearson product-moment correlation coefficients. It was revealed that there was a very strong correlation between the pronunciation ratings and comprehensibility (see Table 7). Correlation coefficients for suprasegmentals were greater than for segmentals. In particular, it can be asserted that intonation is the most influential factor on comprehensibility because the coefficient of intonation was shown to be the highest among all factors.

### TABLE 6

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Independent variable</th>
<th>$B$</th>
<th>$SE_{B}$</th>
<th>$t$</th>
<th>$R^2$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consonants</td>
<td>(constant)</td>
<td>3.25</td>
<td>.63</td>
<td>5.15***</td>
<td>.35</td>
<td>17.17***</td>
</tr>
<tr>
<td></td>
<td>Ability to Mimic</td>
<td>.82</td>
<td>.20</td>
<td>4.14***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vowels</td>
<td>(constant)</td>
<td>3.02</td>
<td>.57</td>
<td>5.31***</td>
<td>.44</td>
<td>24.95***</td>
</tr>
<tr>
<td></td>
<td>Ability to Mimic</td>
<td>.89</td>
<td>.18</td>
<td>4.50***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Word Stress</td>
<td>(constant)</td>
<td>2.41</td>
<td>.67</td>
<td>3.62**</td>
<td>.43</td>
<td>24.57***</td>
</tr>
<tr>
<td></td>
<td>Ability to Mimic</td>
<td>1.03</td>
<td>.21</td>
<td>4.96***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intonation</td>
<td>(constant)</td>
<td>1.73</td>
<td>.72</td>
<td>2.41*</td>
<td>.46</td>
<td>26.79***</td>
</tr>
<tr>
<td></td>
<td>Ability to Mimic</td>
<td>1.16</td>
<td>.23</td>
<td>5.18***</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$. ** $p < .01$. *** $p < .001$.

### TABLE 7

<table>
<thead>
<tr>
<th>Comprehensibility</th>
<th>Consonants</th>
<th>Vowels</th>
<th>Word Stress</th>
<th>Intonation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consonants</td>
<td>.92**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vowels</td>
<td>.92**</td>
<td>.95**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Word Stress</td>
<td>.95**</td>
<td>.89**</td>
<td>.90**</td>
<td>1</td>
</tr>
</tbody>
</table>
| Intonation        | .97**      | .90**  | .91**       | .96**      | 1

** $p < .01$. 

** $p < .01$. 

** $p < .01$.
Factors Affecting Korean Learners’ English Pronunciation and Comprehensibility

Since consonants, vowels, word stress and intonation were inseparable from one another, simple linear regression was conducted rather than multiple linear regression analysis. It was undertaken through the REGRESSION subprogram of the SPSS 12.0 using the Least Squares Estimators method for regression. The results in Table 8 showed that one’s comprehensibility could be predicted very well by intonation, as the high level of $R^2$ suggested.

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>B</th>
<th>SE B</th>
<th>t</th>
<th>$R^2$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensibility</td>
<td>(constant)</td>
<td>.68</td>
<td>.22</td>
<td>3.04**</td>
<td>.95</td>
<td>568.40***</td>
</tr>
<tr>
<td></td>
<td>Intonation</td>
<td>.97</td>
<td>.04</td>
<td>23.84***</td>
<td>.95</td>
<td>568.40***</td>
</tr>
</tbody>
</table>

** $p < .01$. *** $p < .001$. 

V. DISCUSSION

One of the intended purposes of this study was to reveal individual factors affecting pronunciation ability. Among the factors examined, only two showed significant differences in all pronunciation ratings: subjects’ experience living in an English-speaking country and their ability to mimic. It should be explained why those factors are more closely related to pronunciation learning while others are not.

First, the issue of communicative demands seems relevant to pronunciation acquisition. Even the principle of “the younger, the better” seems insufficient. Factors which are communicatively demanding appear to be relevant to positive attainment of pronunciation, as Pennington and Richards (1986) claimed that “phonological performance in the target language is affected by the communicative demands of the situation or task in which the learner is engaged” (p. 217). It is true that appropriate pronunciation is a basic requirement for successful communication, but it is also certain that meaningful communication can in turn provide learners with an opportunity to practice pronunciation. Since an ESL setting is generally highly communicatively demanding, learners’ experience living in an English-speaking country is an influential factor on pronunciation. However, the other ESL factor, experience living with NSs of English, demonstrated group differences only for suprasegmentals (word stress and intonation). Due to the limited duration of this experience (two to seven months) and the small sample size ($n = 6$), caution is advisable in interpreting the results. However, it seems that suprasegmental features are likely to be influenced by communicative exposure, even if only for a short period.

In a similar vein, it can be understood why Korean EFL factors failed to positively
influence subjects’ pronunciation learning; those factors are communicatively undemanding. At whatever point learners began English study, they universally received a similar style of instruction: one focused on areas other than meaningful interaction. Similarly, majoring in English does not differ extensively from other majors in terms of communicative demands. In addition, focused-pronunciation study and private English education are unrelated to communication\(^5\). As for English conversation in everyday life, subjects may communicate in English, but it is not as demanding a situation as ESL surroundings. In Suter’s (1976) and Thompson’s (1991) study, daily English communication in ESL context is associated with accurate pronunciation. These conflicting results can be attributed to the fact that subjects in this study are mainly exposed to Korean and are not obliged to use English in daily life. In general, they simply chat with friends in English. Their use of English tends to be sporadic as well, and dependent on the opportunity to contact an English-speaking partner. Therefore, it can be concluded that both quantity and quality of input matter in language learning as Kenworthy (1987) claimed.

Second, pronunciation is closely related to students’ belief in themselves. Since this study used a subjective method for measurement, subjects’ self-evaluations, ability to mimic can be linked to their degree of confidence in their pronunciation. Those who believe themselves to be competent at mimicry may have superior phonetic ability, greater confidence in pronunciation, or both. According to Brown (2007), learners’ confidence in their ability to perform particular tasks is the most critical element in all types of learning. In addition, self-confidence can be linked to learners’ willingness to communicate in their target language. A strong correlation between ability to mimic and pronunciation ratings converges with the discoveries of Suter (1976) and Thompson (1991). Thus, this study supports Thompson’s argument that subjective methods measuring the ability to mimic are valid.

The other purpose of this study was to identify which pronunciation feature has the strongest impact on comprehensibility. For all the features of pronunciation correlated to comprehensibility, it becomes clear that comprehensibility is not exclusively influenced by one particular feature, but instead by consonants, vowels, word stress, and intonation. However, the extent to which feature impacts comprehensibility was not identical. Intonation was shown to have the greatest effect on comprehensibility in this study. Eun-young Lee (2000) also revealed that, among segmental and suprasegmentals, intonation was the greatest contributing factor to comprehensibility. Similarly, Anderson-Hsieh et al. (1992) and Anderson-Hsieh and Koehler (1988) claimed that deviances in prosody were most closely related to listeners’ judgments of speakers’

\(^5\) Caution is advisable, however, because the number of the non-private English education is small.
pronunciation. However, investigations by Fayer & Krasinski (1987) yielded contrary results, with segmentals turning out to be the most influential factor in intelligibility.

Due to discrepancies in methods and pronunciation features included, it is difficult to conclude which factors are the most critical for comprehensibility or intelligibility. Furthermore, there have been insufficient empirical studies to conclusively favor one over the others. One reason why different studies examine distinct pronunciation features may stem from the difficulty in classifying suprasegmentals. It is clear that segmental consist of consonants and vowels, but this is not the case for suprasegmentals. While Ladefoged (1982) classifies suprasegmentals into stress, length, tone, and intonation, pronunciation teaching guides (e.g., Avery & Ehrlich, 1992; Kelly, 2000; Kenworthy, 1987) do not reach consensus in organization. This is likely because suprasegmental features are interconnected in utterances and cannot be isolated with precision. In this sense, each study is worth conducting for stimulating researchers and teachers, and replicating and extending the existing research is encouraged.

Since this study exclusively included word stress and intonation as representative suprasegmentals, further research, with additional suprasegmental features, can be arranged in order to determine whether intonation would continue to most impact comprehensibility. Also, comparing the results of this study to those of an extended pool of raters in terms of nationality and familiarity with subjects’ accents would offer more comprehensive implications in today’s era of global communication.

Before drawing any conclusions, it also seems important to examine motivational and attitudinal factors, even though they failed to correlate to pronunciation ratings. It is likely that subjects’ motivational and attitudinal factors have no direct effect on the acquisition of pronunciation, since there was no strong relationship between motivational/attitudinal factors and pronunciation. This further complies with the findings of Thompson’s study (1991), which failed to show a strong correlation between motivational/attitudinal factors and pronunciation ability. Also, this result is in line with Kenworthy’s (1987) assertion that learners’ attitudinal factors impact pronunciation indirectly rather than directly. It can be imagined that some learners resist working hard or have limited exposure to English, despite their positive attitude toward English or motivation for learning. The degree of learners’ effort, language input, and meaningful output are more immediate factors than their motivation and attitude. However, if a group of learners are exposed to equal conditions, their motivation and attitudes they have can enhance or hinder language learning. In sum, it is better to consider attitudinal and motivational factors as interactive with other external factors and as having an indirect impact on language learning.
VI. CONCLUSION AND IMPLICATIONS

This study has established that learners’ English pronunciation learning can be positively influenced by communication-oriented exposure. In addition, learners’ elevated self-confidence is a facilitating factor in the attainment of appropriate pronunciation. As for comprehensibility, the role of suprasegmentals has been shown to be greater than that of segmentals. Although this study was conducted on a small scale, the findings yield considerations for the learning and teaching of English pronunciation in Korea. It is true that teachers in the classroom are unable to control the majority of a learner’s individual factors; however, they can assist students by making the greatest use of what is available. Although the subjects in this study were adults, these findings can be applied at all levels of education.

First, contrary to the common assumption, age is not the sole determinant for success in pronunciation learning, but other factors such as type of exposure to language are influential. In actuality, pronunciation ability and meaningful communication are closely related, mutually affecting one another. Teachers should provide a variety of language input through the media, native speaking teachers, audio-visual materials, and the teacher themselves, so that learners can grow familiar with variety of English accents. Sufficient input may also lead students to awareness of their pronunciation issues, if any, and lead them toward eventually fixing them. Making input and classroom activities relevant to learners’ lives is important in order to motivate them to use the language. At that point, they will become engaged in more meaningful communication. It is also desirable to offer frequent opportunities for output so that learners grow comfortable with oral expression.

Second, learners’ self-confidence should be considered an important factor, since pronunciation, among other aspects of language, is easily influenced by affective factors. Teachers can encourage students to try out language and assure learners that intelligible pronunciation, rather than native-like pronunciation, is the attainable goal. With this attainable goal in mind, learners can experience a sense of achievement, which in turn increases their confidence. Lastly, each pronunciation feature varies in the extent to which it affects learners’ comprehensibility. Since class time is limited and other aspects of English must also be covered, it is preferable to set teaching priorities according to the results of empirical studies. However, it seems that teachers will need patience in order to acquire more reliable information regarding factors affecting comprehensibility or intelligibility from the needed future research.
Acknowledgement: I would like to thank the students and raters who participated in this study. I am also grateful to the three anonymous reviewers for valuable feedback and suggestions; to Bill Sharp for proofreading; and especially to Prof. Hikyoung Lee for her encouragement and insightful comments.

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**APPENDIX A**

*Questionnaire (English Version)*

This questionnaire asks your general opinion about English study and related matters. There are no right or wrong answers. Please answer all the questions below by marking √ in the box or filling in the blank.

- **Gender:** □ male    □ female
- **Have ever you taken an official speaking test?**
  □ yes    □ no
  **If, yes,** please specify the name of the test and the score: __________________.
(e.g., iBT TOEFL speaking __, TSE __, IELTS speaking ____)

1. I study English to get a better job. □ □ □ □ □ □ □
2. I study English to get a good grade. □ □ □ □ □ □ □
3. I study English to study abroad. □ □ □ □ □ □ □
4. I study English to prepare for living in an English-speaking country. □ □ □ □ □ □ □
5. I study English to communicate freely with native speakers of English. □ □ □ □ □ □ □
6. I study English for cultural exchange with native speakers of English. □ □ □ □ □ □ □
7. I spend a great amount of time and money on English study. □ □ □ □ □ □ □
8. I enjoy learning and using English. □ □ □ □ □ □ □
9. I prefer native speakers of English as English teachers. □ □ □ □ □ □ □
10. I prefer talking to native speakers of English over non-native speakers. □ □ □ □ □ □ □
11. Koreans can benefit from contact with native speakers of English in terms of culture and education. □ □ □ □ □ □ □
12. I like native speakers’ culture such as movies and music. □ □ □ □ □ □ □
13. If possible, I want to live in English-speaking countries. □ □ □ □ □ □ □
14. To succeed in Korea, English ability is necessary. □ □ □ □ □ □ □
Factors Affecting Korean Learners’ English Pronunciation and Comprehensibility

15. Those with a good command of English are given preferential treatment in Korean society.

16. I envy Koreans who have superior English proficiency.

17. I am concerned about my pronunciation when communicating in English.

18. Pronunciation is an important part of English ability.

19. I can mimic native speakers’ English pronunciation.

20. I can mimic any sound even when its meaning is not clear.

Thank you!

APPENDIX B
Reading Passage

In North America when people meet each other for the first time, they talk about things like family, work, school, or sports. They ask questions like “Do you have any brothers or sisters?”, “Where do you work?”, “What school do you go to?”, and “Do you like sports?” They also ask questions like “Where do you come from?” and “Where do you live?” These are polite questions. They are not personal or private.

But some things are personal or private, and questions about them are not polite. People don’t ask questions about a person’s salary. They don’t ask how much someone paid for something. It is OK to ask children how old they are, but it is not polite to ask older people their age. It is also not polite to ask people questions about politics or religion unless you know them very well. People don’t ask unmarried people “Why are you single?” and they don’t ask a married couple with no children “Why don’t you have any children?”
APPENDIX C
Rating Sheet

Pronunciation and Comprehensibility Ratings

1. As you listen to each speaker, you will be asked to rate (1) segmentals, (2) suprasegmentals, and (3) comprehensibility of the utterance.

   - Criteria for rating segmentals
     (1) Consonants: Consonants are well articulated.
     (2) Vowels: Vowels are well articulated.

   - Rating scale
     1 = inaccurate, 9 = accurate

   - Criteria for rating suprasegmentals
     (1) Stress: The correct syllables are stressed in words.
     (2) Intonation: Intonation contours are appropriate.

   - Rating scale
     1 = incorrect, 9 = correct
     1 = inappropriate, 9 = appropriate

   - Criteria for rating comprehensibility:
     How well you can understand the speaker in terms of his/her pronunciation

   - Rating scale
     1 = extremely difficult to understand, 9 = extremely easy to understand

2. The rating you give a speaker will reflect your “overall impression” of the speaker’s pronunciation.

3. Discriminate. Please do not lump scores into the middle range.

4. Only speaker’s pronunciation should affect your rating (i.e., grammar, vocabulary, or any other factors are irrelevant to your task).
Factors Affecting Korean Learners’ English Pronunciation and Comprehensibility

Utterance #

1. Rate segmental features.

   (1) Consonants

    | inaccurate | accurate |
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

   (2) Vowels

    | inaccurate | accurate |
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

2. Rate suprasegmental features.

   (1) Stress (word level)

    | incorrect | correct |
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

   (2) Intonation

    | inappropriate | appropriate |
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

3. Rate the comprehensibility.

    | extremely difficult to understand | extremely easy to understand |
    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
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Received in August, 2008
Reviewed in September, 2008
Revised version received in November, 2008