

# Nativeness and Flapping in Korean American Speakers of English\*

Hikyoung Lee  
(Korea University)

**Lee, Hikyoung. (2004). Nativeness and flapping in Korean American speakers of English. *Language Research* 40(1), 83-99.**

Studies in second language acquisition should take into account aspects of both production and perception. Perceptions of a speaker's English can serve as an indicator of how pervasive an English feature is produced by the speaker. This study examines the correlation of perceptions of "nativeness" of native and non-native English speakers of Korean ethnicity and their production of Word Medial /t/ Flapping, a distinctive feature of North American English. While an exact description of nativeness is elusive, a perception test was designed to measure perceptions of nativeness and ethnicity of the speakers. The results of the test, which was administered to native English speakers, were then compared with the frequency rates of the production of Flapping. Results indicate that a positive relation exists in that an increase in perceptions of nativeness coincides with an increase in the use of Flapping.

**Key words:** production, perception, Word Medial /t/ Flapping, nativeness, ethnicity, Korean American

## 1. Introduction

A complete and holistic characterization of second language acquisition can only be obtained by investigating the dimensions of both production and perception. Production is usually measured by quantitative means such as examining frequencies of occurrence of a particular linguistic feature. Perceptions on the other hand are assessed by tests. Labov (1972, p. 158) states that perception tests are important because they mirror the social stratification of a speech community. The kind of evaluation of variables Labov refers to are subjective reaction tests (Labov, 1966; Graff et al., 1986):

---

\*I would like to thank the three anonymous reviewers of *Language Research* for their helpful comments and suggestions. All errors, however, are mine.

the elicitation of evaluative behavior that is subject to quantitative measurement.

The subjective reaction test (Labov, 1966, pp. 410-412) in its original form asked respondents to imagine themselves as a personnel manager interviewing people. They were asked to listen to the recordings of the subjects and rate them on a scale, which ranked suitability for certain occupations. This job scale reflected a rating, which started at perfect speech correlating to the best job (e.g., television personality) and terrible speech correlating to the worst job (e.g., factory worker). Through the judgments of the personalities or social attitudes of a recorded series of speakers, the test sought to elicit reactions to prestige and stigmatized variables (Labov, 1966, p. 405).

Graff et al. (1986) designed a test, which measured white and black speakers' reactions to phonological markers that were ethnicity specific. They utilized synthesized speech which was digitally controlled so that the pronunciation of the front vs. non-front nucleus in the vowels [aw] and [ow] differed. Raising of the nucleus of [aw] as in the words "out" and "house" are considered part of the language change occurring in Philadelphia among white speakers and not black. Therefore, the different pronunciations of the features showed that "evidence from both production and perception in the community...indicates that these two vowels are recognized by white and black alike as markers of their respective speaking styles" (Graff et al., 1986, p. 57).

Labov's subjective reaction tests were essentially a "linguistic adaptation" of Gardner and Lambert's (1959, 1972) "matched guise" tests (Labov, 1984, p. 44). A matched guise is a test designed to measure the language and social attitudes toward a group of speakers. In the original matched guise test, French-English bilinguals were recorded on a tape reading the same passage once in French and once in English. The speakers were rated according to characteristics such as intelligence and likeability. The goal of the test was to determine whether the same speakers would be rated differently according to the language used in different "guises."

Lambert et al. (1968) utilized the matched guise technique in order to assess the roles of attitudes and motivation in second language learning. The study is based on the social-psychology theory of language learning in which according to Lambert et al. (1968, p. 473):

"An individual successfully acquiring a second language gradually adopts various aspects of behavior, which characterize members of another linguistic-cultural group. The learners' ethnocentric tendencies

and his attitudes toward the other group are believed to determine their success in learning the new language. Motivation to learn is thought to be determined by attitudes and orientation toward learning a second language.”

The study found that English-speaking American students learning French had negative stereotypes of French-speaking people and that this hinders them in “orientating themselves favorably” to the people who speak the language they are learning (Lambert et al., 1968, p. 488). The work of Lambert has been extended to attitudes towards language variation as well (Bouchard Ryan & Giles, 1982).

The matched guise test and the subjective reaction test both provide evidence that people are aware of the consequences of how one speaks, a finding that can be summed up in the following axiom:

- (1) General axiom of sociolinguistic structure (Labov, 1972, p. 249)

The correlate of regular stratification of a sociolinguistic variable in behavior is uniform agreement in subjective reactions towards that variable.

The relationship between production and perception is a dimension that needs to be explored in order to provide a holistic account of nativeness. The reason is that because what constitutes nativeness cannot be isolated nor defined. While it is clear that perceptions of accented English can have negative or positive implications for the speakers (Lippi-Green, 1997) there have been very few studies, which have examined how to determine “foreign accented English” (Bouchard Ryan et al., 1977). Although reactions or perception judgments are based on a combination of various factors and cannot be accounted for unless interaction of several factors is taken into consideration, a perception test can show that despite these obstacles, perceptions can be accurate. The test presented here shows that “English nativeness” can be obtained through establishing a correlation between production and perception.

## **2. The Present Study**

### **2.1. Word Medial /t/ Flapping**

In order to examine both perception and production, the linguistic feature

of Word Medial /t/ Flapping was chosen. The hypothesis here is that the degree of Flapping in the subjects would show similar tendencies as general perceptions of nativeness. Flapping was chosen because it is a feature of North American English. It is not a feature taught through formal instruction to native or non-native speakers. So for speakers to produce it properly, unconscious generalization of Flapping constraints is insufficient.

Flapping is a feature that distinguishes British English, in which it does not occur (Gramley & Paxtold, 1992, p. 339; Stevens, 1972, p. 76; Trudgill & Hannah, 1994, p. 41), from most other varieties of English, in which it occurs to a variable degree. It is clearly a pervasive feature of North American English (Giegerich 1992, p. 226; Ladefoged, 1993, p. 168; Kreidler, 1989, p. 110; Wolfram & Schilling-Estes, 1998, p. 47). The absence or incorrect placement of a flap can signal that the speaker does not speak the variety of English spoken in the U.S. or is a non-native speaker of English. Whether the speaker learns English as a native or non-native speaker, the Flapping rule is not taught overtly in school.<sup>1)</sup>

The analysis here is based on Kahn (1976)'s generalization of the Flapping rule.

(2) Flapping rule (Kahn, 1976, p. 58)

/t/-> [r] / [-consonant] \_ [+syllabic]  
[-stress ]

(where [-consonant] subsumes /l, n, r/)

The exhaustive environments for Flapping are given in Table 1.

Table 1. Environments for Word Medial /t/ Flapping  
(Lee & Kobayashi, 1997)

Environment	Example
1) v' _ v	wa[r]er
1') v' v _ v	nega[r]ive
2) v'l _ v	shel[r]er
3) v'n _ v	twen[r]y
4) v'r _ v	par[r]y
5) v' _ l	li[r]le

1) Although Flapping is taught through instruction in a general way, the exact constraints concerning Flapping environments are not.

For native speakers of American English, Flapping in environment 1) is almost categorical while 2)-5) show relative degrees of occurrence. In environment 1), the secondary stress on the final syllable may make Flapping less likely than in 1). In particular for environment 2), Kahn (1976, p. 58) states that the production of /l/ must be non-consonantal to induce Flapping and that for most (but not all) speakers there is a tendency to maintain a consonantal pronunciation for /l/ and not flap. He also comments that when /l/ is consonantal “if the tip of the tongue contacts the roof of the mouth in its articulation, flap seems to me to be simply impossible” (Kahn, 1976, p. 58).

The occurrence of Flapping is attributed to social factors as well as linguistic factors. Kriedler (1989, p. 110) claims that “the speaker is likely to have the feeling that non-tapped consonants are right or better and so produces distinct consonants in circumstances where the social motivation is sufficiently strong” but if Flapping is not socially motivated the linguistic environment is the cause. “Educated Americans” are said to make no difference between a flapped /t/ and a /d/ (Prator & Robinett, 1985, p. 103). As for the perception of Flapping, Stevens (1972, p. 76) claims that “most Americans believe that they always do make it and will usually deny, if challenged, that their pronunciation of e.g. *latter* and *ladder* is the same.”

### 3. Methods

This Section discusses the subjects, test design and methodology of an English nativeness perception test. The test was designed in order to assess the notion of “English nativeness.” Here, nativeness refers to the degree of how native the English speech of a speaker sounds.

#### 3.1. Subjects

Twenty-four Korean American subjects, who were representative in terms of age and age of arrival in the U.S. were selected as subjects for the perception test. Only Korean Americans were chosen as subjects in order to keep the variable of ethnicity constant. The 24 subjects were chosen to reflect the demographic factors of Korean immigration to the U.S. history. Large scale Korean immigration started after the Immigration Act of 1965, which took effect in 1967 (Kim 1981, p. 3). Therefore, third

generation Korean Americans are only now emerging. An even number of males and females were selected as well as at least one subject from each designated age of arrival group—0, 1-5, 6-10, 11-15, 16-18, 19-25, 26-35, 36-45, 45+. The subjects were selected based on their immigration background. Hence, the age range of the speakers was 18-65 years of age and the following age groups were formed: 18-25, 26-45, 46+. In addition, speakers who made errors in reading or pronunciation were excluded as well as those recordings, which were not clear.

In order to provide a distraction and prevent listeners from realizing that all of the speakers were ethnic Korean, six distractors (three males, three females) were included in the test. Of the six distractors, two were Caucasian, two were African-American, and two were Hispanic. The two Hispanic speakers were non-native English speakers while the remaining speakers were all native English speakers.

### 3.2. The English Nativeness Perception Test

The goal of the test was to determine the degree of nativeness of non-native Korean speakers of English. In the test, native English speakers served as judges. The contents of the test consisted of a reading passage, which was used to elicit formal speech. A reading mode was chosen in order to maximally eliminate the influence of intonation and other prosodic factors as well as the influence a certain topic may have on the production of the target linguistic feature of Flapping. The researcher conducted an impressionistic analysis<sup>2)</sup> on the production of flapping by the subjects. A native English speaker engaged in a reliability test with the researcher. Reliability was approximately 97%.

Although a discrepancy exists in that in the test, hearers were judging the overall nativeness and not just the production of Flapping, this does not jeopardize the present study.<sup>3)</sup> Since the goal is to determine if high production in Flapping is related to a high perception of nativeness. Recording

---

2) A phonetic analysis was not deemed necessary to rate Flapping since a binary distinction (i.e., presence/absence) was sufficient for the present study.

3) The reading passage task was initially designed to examine stylistic variation. Therefore, there is a high concentration of words which included a word medial /t/. There are six words which possess a word medial /t/. The production of Flapping in the reading passage was not considered for the analysis here due to its nature of being formal speech. Instead, naturally occurring production from spontaneous interview speech was used.

speakers reading the same passage also provides the listeners with a means to distinguish variation in identical words. The passage that was used is as follows:

#### Reading passage

The only negative things about the city are the bad tap water and the crime. A man was beaten because he interrupted a demonstration for equality and liberty. But I'd rather live here than out in the valley.

The basic questions on the test were designed to inquire about the degree of English nativeness according to a 5 point scale (See Appendix for the questionnaire used in the test).

### 3.3. Administering the Test

The perception test was administered to a total of 111 university students. The instructors<sup>4)</sup> of the classes the test was taken in were asked to directly administer the test by playing the tape and handing out questionnaires. This was to prevent any influence the ethnicity of the researcher (Korean) would have on the respondents. The test was strictly voluntary and was administered to university students at a U.S. institution. Of the 111 respondents, 11 were excluded because they were non-native speakers of English. The non-native speakers' judgments were considered unreliable because of the possibility that they lack adequate judgment about what is native.

Based on information gathered about the judges from questions on the perception test, it was determined that 72% of the judges were females and 44% were eighteen years old. The majority at 77% were Caucasian and 48% had a few friends who were non-native English speakers.

The reading passage in its entirety was provided for the judges so that test takers could review what was recorded by the subjects on the tape. This was so the test takers would not be distracted by the contents of the passage were the passages to be different. In addition, as the first speaker on the tape was a non-native English speaker, previous knowledge of the passage enabled test takers to concentrate on overall nativeness.

---

4) Special thanks goes to the teaching assistants who administered the test to their recitation classes: Atissa Banuazizi, John Bell, Cassandre Creswell, and Amanda Seidl.

Results of the perception test administered to the 100 students were tabulated using SPSS Version 9.0. Descriptive statistical analyses focusing on means analysis were conducted. In this section, the answers to each question were calculated according to their respective rates. The following shows the scale used to calculate rates.

(5) Scale used for rating

Question 1. Nativeness: yes = 1, no = 0, not sure = 0.5

Question 2. Degree of nativeness: 1, 2, 3, 4, 5

## 4. Results and Discussion

### 4.1. English Nativeness

First, the results of Question 1 (nativeness) and Question 2 (degree of nativeness) are given in Table 2. The speakers in Table 2 are ranked according to nativeness.

Table 2. Results of Nativeness and Degree of Nativeness Analyses

Speaker	Nativeness	Degree	Speaker	Nativeness	Degree
S1	0.00	1.29	S6	0.74	4.33
S17	0.00	2.24	S13	0.77	4.46
S2	0.00	2.29	S26	0.85	4.53
S27	0.00	2.70	S28	0.91	4.77
S4	0.00	2.92	S29	0.92	4.80
S15	0.13	2.74	S19	0.92	4.83
S12	0.30	3.38	S21	0.92	4.91
S22	0.34	3.56	S10	0.97	4.83
S5	0.41	3.69	S23	0.99	4.94
S30	0.51	4.00	S18	0.99	4.99
S24	0.56	3.89	S11	0.99	4.98
S8	0.69	4.05	S9	1.00	4.9

Figure 1 shows how the speakers were ranked according to nativeness. It

is interesting to note that S9 who was considered a native English speaker by all of the judges was not a native born speaker but a speaker who arrived in the U.S. in the 11-15 age of arrival group.<sup>5)</sup> However, the degree of English nativeness of this speaker was not the highest. The other speakers appear to have been all judged native or non-native with regard to their age of arrival in the U.S.<sup>6)</sup>

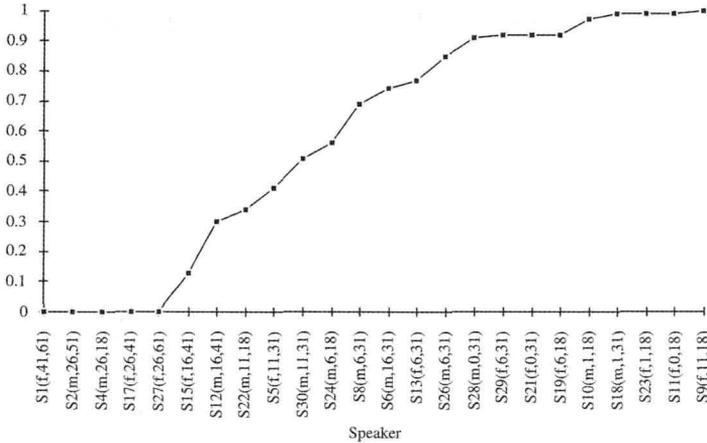


Figure 1. English Nativeness of the Speakers

#### 4.2. Ethnicity

As for the results of the analysis of how the ethnicity of the subjects were judged, only four speakers out of 24 were judged to sound Asian over 50% of the time. While native born speakers were judged to be Caucasian, non-native speakers were more likely to be judged Hispanic or African-American.

Figure 2 shows how ethnic identification was perceived in the subjects. The scale is ordered according to the decreasing rate of Asian identification of the speakers. Again, the subjects at the end of the scale who were judged to be Asian were non-native and the subjects at the other end of

5) In Figure 1 and subsequent figures, the number of the speaker and corresponding demographic information is included in parenthesis. So, for example, S1(f, 41, 61) is interpreted as: S1= speaker number (f=sex, 41=age of arrival group, 61=age).

6) An additional pilot test was conducted in order to determine the validity of such an analysis.

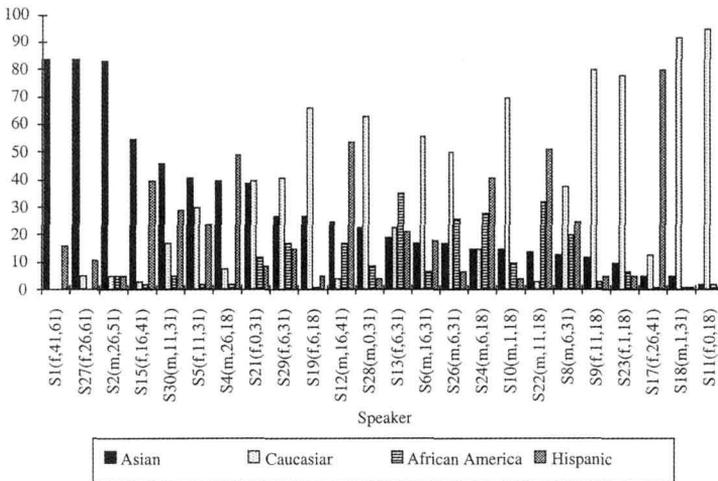


Figure 2. Ethnic Identification of the Speakers

the scale were perceived to be Caucasian with mixed judgments in-between.

In order to examine specific ethnic identification, judgments of Asian and Caucasian identity were individually considered. Figure 3 is a scattergram, which shows judgments of Asian identity plotted against judgments of nativeness.

Figure 3 shows a weak relationship between judgments of nativeness

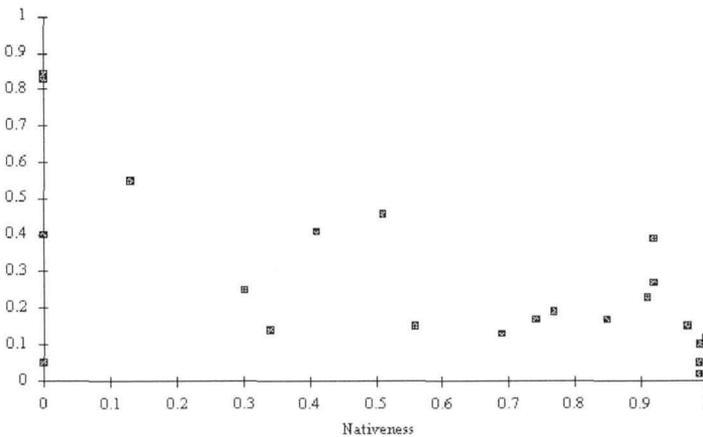


Figure 3. Judgments of Asian Identity

and judgments of Asian identity. Goodness of fit of the correlation was computed by measuring the coefficient of determination  $r^2$  measure.<sup>7)</sup> In Figure 3,  $r^2 = 0.44$  which indicates a low degree of correlation.

### 4.3. Correlating Production and Perception

This section examines possible correlations between the perceptions of English nativeness obtained through the English nativeness perception test and the production of Word Medial /t/ Flapping. The production of Word Medial /t/ Flapping in 30 minute interviews with the 24 speakers who were subjects in the perception test is analyzed. In terms of the rates of nativeness and ethnicity, absolute values, which correspond to the number of respondents who chose a particular answer on the perception test are used in the correlation analyses. Rates for nativeness are calculated in terms of how many respondents answered “yes” and rates of ethnicity are assessed as to how many answered “Asian.” For degree of nativeness which was originally a five-point scale, a percentage was calculated by multiplying the degree score by 20.

#### 4.3.1. Nativeness, Degree, and Ethnicity

First, a correlation among perceptions of nativeness, degree of nativeness, and ethnicity is investigated. Figure 4 shows the results. The speakers are ranked according to nativeness.

As can be seen from Figure 4, nativeness and degree of nativeness show a positive correlation. The rates of both nativeness and degree of nativeness show a concurrent increase. Ethnicity is expected to show the opposite of nativeness and degree of nativeness which it does by showing that the more native a speaker is perceived, the less likely they are perceived to be Asian, and the more likely they are to be perceived Caucasian.<sup>8)</sup> An interesting finding is the one speaker, S17 (f, 26, 41), who does not show a high propensity of sounding Asian, shows low rates of nativeness and degree of nativeness.

---

7)  $r^2$  is commonly used to measure the goodness of fit of a regression line.  $r^2$  is a means of measuring the proportion or percentage of the total variation in Y explained by the regression model” (Gujarati, 1995, p. 77).

8) An anonymous reviewer points out that being judged Caucasian implies a higher degree of nativeness than, for instance, being judged African-American. Here, these categories are meant to reflect ethnicity as an entity independent from nativeness.

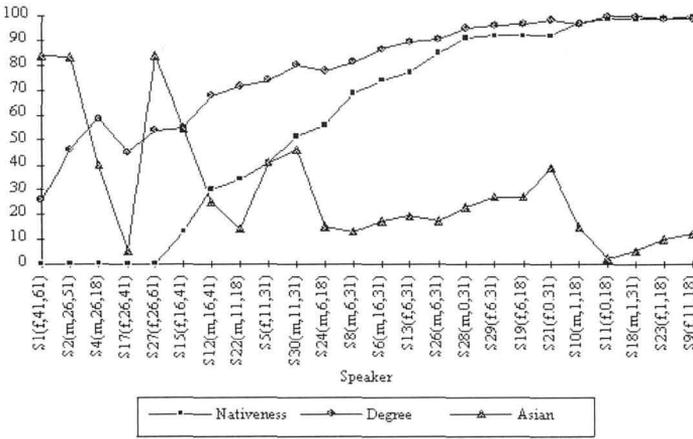


Figure 4. Correlation of Nativeness, Degree of Nativeness, and Ethnicity

4.3.2. Nativeness and Flapping

Second, the correlation between perceptions of nativeness and the production of the linguistic feature is examined. Tokens of Word Medial /t/ Flapping are taken from analyses of spontaneous speech in the socio-linguistic interviews and not from the reading passage itself. First, Figure 5 shows the correlation of nativeness and Flapping.

As can be seen from Figure 5, perceptions of nativeness and Flapping

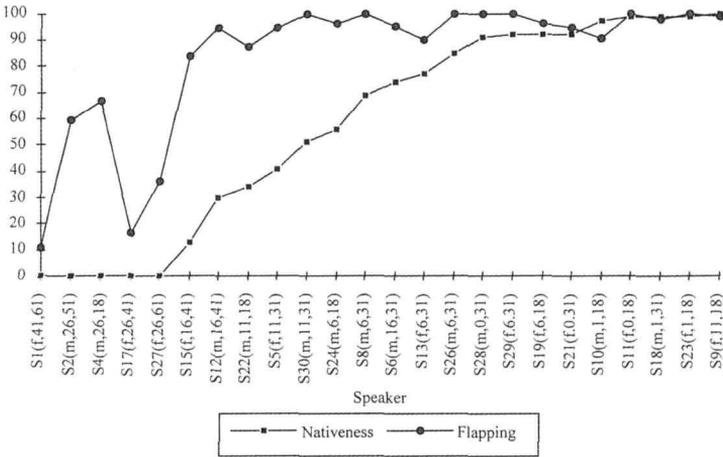


Figure 5. Correlation of Nativeness and Flapping

show a positive correlation.<sup>9)</sup> The subjects who flap the most are also perceived to be more native and vice versa. There is however a discrepancy concerning two speakers whose rates of Flapping are relatively high in relation to their rate of nativeness. These two speakers are S2 (m, 26, 51) and S4 (m, 26, 18).

To recapitulate, the frequency of occurrence of Word Medial /t/ Flapping increases in tandem with judgments of nativeness to a certain degree.

## 5. Summary and Conclusions

This study has attempted to show that a relationship can be established between the production of Word Medial /t/ Flapping and English nativeness. In this light, perception of speakers seems to closely mirror linguistic production and vice versa. The results of the English nativeness perception test and the results of Word Medial /t/ Flapping use in the Korean speakers of English showed that a comparison can be made. Word medial /t/ Flapping is a pervasive feature of American English. What this study shows is that it can be considered an indicator of nativeness as well. Thus, an increase in the production of a linguistic feature directly corresponds to how native English-like the speakers sound.

Measuring or even defining the notion of “nativeness” for non-native speakers of a language in absolute or relative terms is a rather elusive endeavor. However, the attempt made here through the English nativeness perception test provides evidence that perceptions of nativeness can be obtained. The test demonstrated that native speakers could determine the degree of English nativeness of the Korean American speakers. The judgments of nativeness in terms of both categorical and degree perception showed that direct correlations between the perceptions existed. The judges’ perceptions of the race of each speaker were not as accurate which indicated that although the judges could distinguish a “thick” Asian accent they could not distinguish ethnic accents in speakers who fell in between the extremes of native and non-native.

This study has attempted to connect perceptions of overall English use and the production of a linguistic feature. Nevertheless, one must be careful

---

9) The y axis is set to 100 to reflect the total in terms of percentage rates for both nativeness and Flapping.

not to assign undue importance to the feature singled out for the present study. It is the correlation not its absolute contribution to the assignment of nativeness which is shown here. Further research needs to be conducted to examine what exactly determines relative degrees of nativeness in English speakers. In addition, an inventory of which particular features of English enables a speaker to sound native warrants further attention.

## References

- Bouchard Ryan, E, M. A. Carranza, and R. W. Moffie. (1977). Reactions toward varying degrees of accentedness in the speech of Spanish-English bilinguals. *Language and Speech* 20, 267-273.
- Bouchard Ryan, E. and H. Giles., eds. (1982). *Attitudes Towards Language Variation*. London: Edward Arnold.
- Celce-Murcia, M., D. M. Brinton, and J. M. Goodwin. (1996). *Teaching Pronunciation: A Reference for Teachers of English to Speakers of Other Languages*. New York: Cambridge University Press.
- Crystal, D. (1997). *A Dictionary of Linguistics and Phonetics* (4th ed.). Oxford: Blackwell.
- Gardner, R. and W. Lambert. (1959). Motivational variables in second language acquisition. *Canadian Journal of Psychology* 13, 266-272.
- Gardner, R. and W. Lambert. (1972). *Attitudes and Motivation in Second Language Learning*. Rowley: Newbury House.
- Giegerich, H. J. (1992). *English Phonology*. London: Cambridge University Press.
- Graff, D., Labov, W. and W. Harris. (1986). Testing listener's reactions to phonological markers of ethnic identity: A new method for sociolinguistic research. In D. Sankoff, ed., *Diversity and Diachrony* (pp. 45-58). Philadelphia: John Benjamins.
- Gramley, S. and K-M. Paxtold. (1992). *A Survey of Modern English*. London: Routledge.
- Gujarati, D. N. (1995). *Basic Econometrics*. New York: McGraw-Hill.
- Kahn, D. (1976). *Syllable-Based Generalizations in English Phonology*. Bloomington: Indiana University Linguistics Club.
- Kim, I. (1981). *New Urban Immigrants: The Korean Community in New York*. Princeton: Princeton University Press.
- Kreidler, C. W. (1989). *The Pronunciation of English*. Oxford: Blackwell.

- Kreidler, C. W. (1997). *Describing Spoken English*. London: Routledge.
- Labov, W. (1966). *The Social Stratification of English in New York City*. Washington, DC: Center for Applied Linguistics.
- Labov, W. (1972). *Sociolinguistic Patterns*. Philadelphia: University of Pennsylvania Press.
- Labov, W. (1984). Field methods of the project on linguistic change and variation. In J. Baugh and J. Sherzer, eds., *Language in Use: Readings in Sociolinguistics* (pp. 28-53). Englewood Cliffs: Prentice-Hall.
- Ladefoged, P. (1993). *A Course in Phonetics* (3rd ed.). Fort Worth: Harcourt Brace Jovanovich.
- Lambert, W., Gardner, R. C., Olton, R. and K. Tunstall. (1968). A study of the roles and attitudes and motivation in second language learning. In J. Fishman, ed., *Readings in the Sociology of Language* (pp. 473-491). The Hague: Mouton.
- Lee, H. and M. Kobayashi. (1997). Korean and Japanese accents in English: Linguistic and social variables across 1st to 2nd generation bilinguals. *Proceedings of the 4th Seoul International Conference on Linguistics* (pp. 408-415). Seoul: The Linguistic Society of Korea and Hansin.
- Lippi-Green, R. (1997). *English with an Accent: Language, Ideology, and Discrimination in the United States*. London: Routledge.
- Olive, J. P. (1993). *Acoustics of American English Speech: A Dynamic Approach*. New York: ATandT.
- Prator Jr., C. and B. W. Robinett. (1985). *Manual of American Pronunciation* (4th ed.). Orlando: Holt, Rinehart and Winston.
- Stevens, P. (1972). *British and American English*. London: Collier-Macmillan.
- Strassel, S. (1998). Variation in American English Flapping. In C. Paradis, D. Vincent, D. Deshaies, and M. Laforest, eds., *Papers in Sociolinguistics: NWAWE-26 a l'Universite Laval* (pp. 125-135). Quebec: Editions Nota bene.
- Trudgill, P. and J. Hannah. (1994). *International English: A Guide to the Varieties of Standard English* (3rd ed.). Great Britain: Edward Arnold.
- Wolfram, W. and N. Schilling-Estes. (1998). *American English*. London: Blackwell.



3) What ethnicity do you think the speaker is?

\_\_\_\_\_ African-American

\_\_\_\_\_ Asian

\_\_\_\_\_ Caucasian

\_\_\_\_\_ Hispanic

Hikyoung Lee

Department of English

Korea University

1, 5-ga Anam-dong, Sungbuk-ku

136-701 Seoul, Korea

E-mail: hleeku@korea.ac.kr

Received: Oct. 20, 2003

Revised version accepted: Feb. 18, 2004

Accepted: Feb. 16, 2004