DOCUMENT RESUME

ED 320 432 FL 018 594

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TITLE A Study of Comprehensibility of Native and Non-Native Varieties of English.
PUB DATE 90
NOTE 30p.
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Chinese; College Students; Comparative Analysis; Contrastive Linguistics; English; *English (Second Language); Higher Education; Japanese; *Language Variation; *Listening Comprehension; *Native Speakers; *Regional Dialects; *Sex Differences; Uncommonly Taught Languages
IDENTIFIERS *Hawaii

ABSTRACT

This study examines the comprehensibility of Chinese, Japanese, and Hawaiian English by listeners whose native languages are Cantonese, Mandarin Chinese, Japanese, and Hawaiian English. The subjects, 30 college students, were grouped according to whether they listened to male or female speakers. Results show native speakers are better at comprehending all varieties of English, native or non-native, than Chinese and Japanese speakers. However, native English is not always more comprehensible than non-native English to non-native listeners. The subjective reactions reveal that the subjects who listen to male speakers give the worst score in listening to the speaker they judge most difficult to comprehend, but the same is not true of those who listen to female speakers. It was also found that the subjects identify their own native language speakers more readily than the speakers of other native languages, and that native English is as identifiable as their own English. Some pedagogical implications are discussed. (Author/MSE)

# A Study of Comprehensibility of Native and Non-native Varieties of English

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In this study, the comprehensibility of Chinese, Japanese, and Hawaiian English by listeners whose native languages are Chinese (Mandarin and Cantonese), Japanese, and Hawaiian English is investigated. The subjects (listeners) are grouped into those who listen to male speakers and those who listen to female speakers. The three-way ANOVA design is utilized to see significant differences between the means of each listener group. The results show that native speakers are better at comprehending all varieties of English, native or non-native, than Chinese and Japanese speakers; however, native English is not always more easily comprehensible than non-native English to the non-native English listeners. The results of subjective reactions reveal that the subjects who listen to male speakers give the worst score in listening to the male speaker they judge to be most difficult to comprehend. This is not true of the subjects who listen to female speakers. Also shown is that the subjects identify their own L1 of the speaker more easily than other L1, and that native English is as identifiable as their own L1 English. In this paper, some pedagogical implications will be discussed.

Now that English is widely acknowledged to be the leading language for international communication, we all should elatedly accept the fact that there are a number of valid varieties of English being spoken by millions of non-native speakers in the world.[1] In this context, English is no longer the possession of native speakers but belongs to anyone who uses it. Non-native speakers of English

thus need not invariably pursue the native speakers' norm (Kachru 1982; Brumfit 1982; Smith et al. 1983).

In the realm of international communication, oral or written, various people assiduously use English in their life. In oral interaction, especially, the effect of speakers' native language upon general intelligibility and adequate comprehension become quite evident. The diversity of accents of English poses "a bewildering picture not only to the foreign learner but also for those who have English as a native or second language" (Gimson).

Reflecting on today's profusion of non-native varieties of English in the world, the assumption that non-native learners of English will be able to comprehend any type of non-native English once they have learned native English has been fallacious, and more and more attention has been shifted to having learners exposed to both native and non-native varieties in pedagogical context (Bisazza 1983; Campbell et al. 1983). Then what sort of underlying assumptions are implied in the situation where people from different cultural and linguistic backgrounds interact with one another, trying to get their meanings across in English?

There are numerous studies on the international intelligibility or comprehensibility of English (Bansak 1969; Rafiqzad and Smith 1979; Albrechtsen et al 1980; Kachru 1981; O'Brate 1981; Quirk 1981; Candlin 1982; Nelson 1982; Bisazza and Smith 1982; Gass et al 1984; Fayer and Krasinski 1987). Nelson and Smith (1985) made a summary of the state-of-art research in international intelligibility or comprehensibility with emphasis on English, in which studies conducted during the period of 1950-1985 were reviewed. They

summarize the general agreement of those studies as follows (p. 333):

(1) It is unnecessary for every speaker to be intelligible to every other speaker of English. Our speech/writing in English needs to be intelligible only to those with whom we are likely to communicate.
(2) Native speakers are no longer the sole judge of what is intelligible in English. More and more non-native English speakers are interacting in English with other non-native speakers. In such cases, they must decide what is and is not intelligible.
(3) Native speakers are not always more intelligible than non-native speakers. Given the same hearer, the speaker (native or non-native) who speaks clearly, is able to paraphrase, and talks at the appropriate level of the hearer in terms of proficiency, topic and speed will be most intelligible.
(4) Intelligibility is not speaker or listener centered but is interactional between speaker and listener.
(5) The greater the active involvement (not just exposure) a listener has with an individual or with a variety of English, the greater the likelihood that he/she will find that person or variety intelligible. The greater the familiarity a speaker has with a variety of English, the more likely it is that he/she will be intelligible to members of that speech community.
(6) The expectations of the listener are extremely important. If one expects to understand a speaker, he/she is much more likely to find the speaker intelligible than if he/she does not expect to understand him.

Nelson and Smith (1985) also emphatically suggest that the terms--intelligibility, comprehensibility and interpretability--be kept separated and distinguished from one another for the research in cross-cultural communication. They propose to assign the terms the following separate and more specific meaning (p.334);

(1) *intelligibility*: word/utterance recognition
(2) *comprehensibility*: word/utterance meaning (locutionary force)
(3) *interpretability*: meaning behind word/utterance (illocutionary force)

They add that the most serious misunderstandings occur at the level of comprehensibility and interpretability. In this study, the terms *comprehensibility, comprehension, and comprehensible* are used

throughout, since the task involved more than mere recognition of words, but did not require of the subjects any demanding inferences to figure out the meanings behind them.

The research design for this study came primarily from Smith and Bisazza's study (1982), which tested the comprehensibility of different varieties of spoken English for different speakers of English, native and nonnative, in the United States, Asia, and Pacific nations or regions. The major characteristic of their study is that the syntactic variation among varieties of English is held constant by having speakers read the same written text while allowing phonological/phonetic features to vary. This study is likewise concerned with the phonological aspects of native and non-native varieties of English: Chinese English, Japanese English, and Hawaiian English. In addition, comparisons were also made between male and female varieties. Considering the above-mentioned second observation by Nelson and Smith (1985: 333): native speakers are no longer the sole judge of what is intelligible in English. This study involved Chinese (both Mandarin and Cantonese) and Japanese native speakers, as well as English native speakers, as listeners to the three different varieties of English. In this design, we can observe trilateral relationships of their comprehensibility--one non-native speaker group (one assigned to either male or female speaker's English) listened to native English, the other non-native English, and their own L1 speaker's English; one native speaker group (likewise assigned to either male or female) listened to two non-native varieties of English as well as native English.

The purpose of this study is to test the following hypotheses and answer the questions presented below:

Hypothesis 1: Native speakers of English will comprehend all non-native varieties better than non-native speakers.

This hypothesis should be directional since there is no doubt that native speakers of English will understand more varied dialects or interlanguage of English than non-native English speakers whose exposure to English is rather confined to a standard variety of native English in pedagogical settings or interlanguage of their own L1 English instructors. This can be true of this study, in which sixteen out of twenty non-native subjects involved as listeners had been staying in the States for less than a year--80%. This is also related to the fifth observation by Nelson and Smith (1985: 333): The greater the active involvement (not just exposure) a listener has with an individual or with a variety of English, the greater the likelihood that he/she will find that person or variety intelligible. Since all of the native English speaking subjects were residents in Hawaii, where many interethnic interactions in English, especially Chinese and Japanese English, are observed, they should be better at comprehending non-native varieties than those living in rural areas in mainland states. Therefore, we can set this hypothesis as directional.

Hypothesis 2: Native English speakers' English will not always be comprehended better than that of non-native speakers.

This hypothesis should be directional since many preceding studies have proven that the null hypothesis of this statement are rejected, as can be seen in the third finding by Nelson and Smith (1985: 333): native speakers are not always more intelligible than non-native speakers. We know this fact from our experience as a non-native speaker of English: some native speakers have strong accents which are difficult for us to comprehend, while many non-native speakers of English very often speak much more clearly.

Hypothesis 3: The listeners will comprehend their L1 speaker's English best of all varieties, native or non-native.

This hypothesis should be directional because there is no doubt that we are exposed most to our own variety of English. Japanese speakers would understand Japanese English better than Chinese English, and vice versa. Their pronunciation should remain undoutedly affected by their L1 phonological systems as long as the speaker's oral English is at interlangauge level. It is often the case that the Japanese learners of English who usually practice speaking English with other Japanese students or teachers often fail to communicate with native speakers of English or other non-native speakers.

Hypothesis 4: There will be significant differences between means of native English speaking groups who listened to Chinese English and those who listened to Japanese English.

We often hear in our daily life, although generalization may be dangerous, that certain non-native varieties are more difficult for native speakers of English to comprehend, and vice versa. The

hypothesis is set as non-directional because we have no sound theoretical ground to prescribe which variety, Chinese or Japanese, is more comprehensible to native English speakers.

Hypothesis 5: There will be significant differences between means according to sex.

This hypothesis should be set as non-directional since there is no theoretical ground to prove it. We know from our daily life that women's speech is more appreciated than men's in many professions--telephone operator, announcer at various public gatherings, sports auditorium, etc., which does not necessarily suggest that women's speech is more audible than men's.

In addition to those hypotheses, this study also attempted to answer the following questions:

1. Do subjective reactions (choosing the variety that seems to be most difficult to comprehend) and objective outcomes (test scores) coincide with each other?

2. Can listeners guess the L1 of the speaker? Can they identify their own L1 speaker more easily than other varieties?

## Methodology

### Subjects

The subjects involved in this study were students of the University of Hawaii at Manoa (UHM). A total of thirty undergraduate and graduate students were selected on the basis of their availability and their consent to participate in this study at the

time of data collection. Of the thirty, twenty were male and ten were female. The subjects consisted of ten Chinese (Mandarin and Cantonese) speakers, ten Japanese speakers, and ten American English speakers.

The average age of the Chinese, the Japanese, and the American subjects was 25.9, 25.9, and 21.1 years old, respectively. The average of all the subjects was 24 years old.

Each language group consisted of two sub-groups--one listened to male speakers' reading of an English passage, the other listened to female speakers' reading. Table 1 presents the biographical data of the subjects in terms of their first language, nationality (or economic zone), sex, age, major (ESL, LGS, ENC, AMS, ANS, ATH, SPM, EGN, BIO, PRB, BSN, BLY, JPN, CPS, UDD, PLS, stands for English as a Second Language, Linguistics, Economics, American Studies, Animal Science, Art History, Sport Medicine, Engineering, Biochemistry, Pre-Business, Business, Biology, Japanese, Undecided, and Political Science, respectively), class standing (F,S,J, and G stands for freshman, sophomore, junior, and graduate, respectively), and the total length of stay in an English-speaking country. The subjects numbered 1,2,3,4, and 5 listened to male speakers' English, while those numbered 6,7,8,9,and 10 listened to female speakers' English. Of the ten English-speaking subjects, two (E8 and E10) are from the mainland, and the others are all Hawaii residents.

*TABLE 1*
*The Data of Subjects*

| No. | L1 | Nationality | Sex | Age | Major | Year | Length |
|---|---|---|---|---|---|---|---|
| C1 | Mandarin | China | M | 31 | ESL | G | 8 months |
| C2 | Mandarin | Taiwan | M | 19 | ELY | F | 4 years |
| C3 | Mandarin | Taiwan | F | 38 | ESL | G | 16 months |
| C4 | Mandarin | Taiwan | F | 26 | LGS | G | 5 years |
| C5 | Cantonese | U.S.A. | M | 17 | BSN | F | 5 years |
| C6 | Mandarin | Taiwan | F | 25 | LGS | G | 16 months |
| C7 | Cantonese | Hong Kong | M | 23 | BSN | M | 16 months |
| C8 | Mandarin | Taiwan | F | 25 | ESL | G | 8 months |
| C9 | Cantonese | Hong Kong | M | 23 | BSN | G | 4 months |
| C10 | Mandarin | China | M | 29 | BCN | G | 8 months |
| J1 | Japanese | Japan | F | 25 | ESL | G | 8 years |
| J2 | Japanese | Japan | M | 26 | ESL | G | 8 months |
| J3 | Japanese | Japan | M | 30 | AMS | G | 4 years |
| J4 | Japanese | Japan | M | 25 | BCN | G | 2 years |
| J5 | Japanese | Japan | F | 25 | ESL | G | 4 years |
| J6 | Japanese | Japan | M | 25 | BCN | G | 8 months |
| J7 | Japanese | Japan | M | 26 | BCN | G | 16 months |
| J8 | Japanese | Japan | M | 26 | ESL | G | 8 months |
| J9 | Japanese | Japan | M | 27 | ATH | G | 8 years |
| J10 | Japanese | Japan | M | 27 | ATH | G | 8 years |
| E1 | English | U.S.A. | F | 19 | SPM | S | 19 years |
| E2 | English | U.S.A. | F | 18 | ENG | F | 18 years |
| E3 | English | U.S.A. | M | 25 | BCM | G | 25 years |
| E4 | English | U.S.A. | M | 18 | PRB | F | 18 years |
| E5 | English | U.S.A. | F | 21 | BSN | J | 21 years |
| E6 | English | U.S.A. | M | 21 | BIO | J | 21 years |
| E7 | English | U.S.A. | F | 21 | JPN | J | 21 years |
| E8 | English | U.S.A. | M | 21 | CPS | J | 21 years |
| E9 | English | U.S.A. | M | 18 | UDD | F | 18 years |
| E10 | English | U.S.A. | M | 29 | PLS | G | 29 years |

## Materials

The instrument for this study was the Michigan Test of Aural Comprehension (Lado 1957), which consists of Form A, B, and C. The test was originally designed to measure understanding of spoken English by ESL students through pictures and phrases in the test booklet.

The test is composed of two parts with 60 items -- 20 in the first part, and 40 in the second part. For each item in the first part, the subject chooses from among three pictures in the test booklet the one which best corresponds to what the examiner has read aloud. In the second part, he/she selects from three phrases the one which best answers a question asked at the end of a sentence or paragraph read aloud. The two parts thus differ from each other only in that the pictures in the first part are replaced by prose in the second.

The test is said to be completely objective, and each item can be scored in approximately 30 seconds. According to the test designer, the coefficient of reliability of Form A is .88 with a standard error of .02. Bisazza and Smith (1983: 60) pointed out the advantages of the test for carrying out a comprehensibility or intelligibility study as follows;

1) The three versions of the test -- Form A, B, and C -- were claimed to be of approximately equal difficulty, which enabled each group to be tested using each of the three speakers.
2) The fact that the test form included some picture selection along with sentence/paragraph selection should have reduced the subject's dependence on the purely reading aspects of the test, making it a more valid listening comprehension measure in completing the test.

Three male speakers, a Chinese, a Japanese, and an American (Hawaii resident), and three female speakers, a Chinese, a Japanese, and an American (Hawaii resident), all of whom were UHM students at the time of recording, recorded the three versions, Form A, Form B, and C, respectively, on a cassette tape at normal speed. Table 2 shows some personal data of each speaker.

*Table 2*
*Biographical Data of Speakers*

| Form | L1 | Nationality | Sex | Age | Major | Length in U.S. |
|---|---|---|---|---|---|---|
| A | Mandarin | China | M | 29 | Economics | 8 months |
| B | Japanese | Japan | M | 26 | Economics | 9 months |
| C | English | U.S.A. | M | 18 | undecided | 18 years |
| A | Mandarin | Taiwan | F | 39 | ESL | 8 months |
| B | Japanese | Japan | F | 25 | ESL | 10 months |
| C | English | U.S.A. | F | 19 | undecided | 19 years |

## Procedures

The three versions -- Form A, B, and C were all tested at one time, taking about one hour. Since each form was originally designed to take 40 minutes, one hour seems to be very short (originally designed to take 120 minutes altogether). This is because most of the subjects were either advanced ESL learners or native speakers of English.

The experiment was conducted more than ten times under the same conditions--the same tape recorder, the same location, and the same procedures, since it was extremely difficult to have the various nationalities get together for the testing. Sometimes the experiment

involved only one subject, but usually two or three subjects at a time.

The tape was stopped by the researcher at the end of every sentence so that the subjects could take time to answer each question (about two seconds between questions). There was about a two-minute break between the forms, during which period the subjects were asked to identify the first language of the speaker from the choice of Chinese (Mandarin and Cantonese were considered to be the same language under this experiment), Japanese, and English (they were allowed to change their answers after they heard all speakers). After listening to three speakers, the subjects were also asked to choose the most difficult speaker to comprehend.

## Analyses

The correct answer for each item was given 1 point with a possible total of 60 points. All the individual scores were added to gain group means according to the speaker, male and female, and according to the listener's L1. There were thus six equal groups consisting of five subjects -- 1) Chinese listeners who listened to male Chinese, Japanese, and English speakers, 2) Japanese listeners who listened to male Chinese, Japanese, and English speakers, 3) American listeners who listened to male Chinese, Japanese, and English speakers, 4) Chinese listeners who listened to female Chinese, Japanese, and English speakers, 5) Japanese listeners who listened to female Chinese, Japanese, and English speakers, and 6) American listeners who listened to female Chinese, Japanese, and English

speakers. We came up with 18 means according to the six group division and 9 means (calculated when listeners to male and female were combined). The significance of the differences between means according to listener and according to speaker was examined by a 3-way ANOVA (Analysis of Variance) design. All the statistical data were utilized in order to test the hypotheses and answer the questions presented in the *Introduction*.

## Results

(1) Scores

*Table 3*
*Raw Scores*

| | Male Speakers | | | | Female Speakers | | |
|---|---|---|---|---|---|---|---|
| | C | J | A | | C | J | A |
| C1 | 33 | 42 | 47 | C6 | 44 | 53 | 52 |
| C2 | 49 | 54 | 53 | C7 | 54 | 57 | 58 |
| C3 | 50 | 50 | 52 | C8 | 57 | 57 | 56 |
| C4 | 50 | 53 | 52 | C9 | 50 | 47 | 51 |
| C5 | 51 | 57 | 58 | C10 | 40 | 41 | 42 |
| J1 | 52 | 55 | 56 | J6 | 43 | 46 | 49 |
| J2 | 48 | 51 | 50 | J7 | 40 | 56 | 56 |
| J3 | 43 | 49 | 45 | J8 | 57 | 58 | 58 |
| J4 | 45 | 51 | 52 | J9 | 40 | 49 | 48 |
| J5 | 37 | 50 | 46 | J10 | 57 | 58 | 56 |
| A1 | 46 | 55 | 58 | A6 | 56 | 59 | 58 |
| A2 | 58 | 54 | 56 | A7 | 54 | 52 | 56 |
| A3 | 53 | 56 | 56 | A8 | 55 | 59 | 57 |
| A4 | 49 | 55 | 54 | A9 | 58 | 58 | 59 |
| A5 | 53 | 58 | 59 | A10 | 53 | 57 | 58 |

*Table 4*
*Means by Gender and L1 of the Speakers and by L1 of the Listeners*

| | Male Speakers | | | | Female Speakers | | |
|---|---|---|---|---|---|---|---|
| | C | J | A | | C | J | A |
| C | 46.6 | 51.2 | 52.4 | C | 49.0 | 51.0 | 51.8 |
| J | 45.0 | 51.2 | 49.8 | J | 47.4 | 53.4 | 53.4 |
| A | 51.8 | 55.6 | 56.6 | A | 55.2 | 57.0 | 57.6 |

Table 3 shows the individual scores of the subjects. All the individual scores were grouped according to the sex of the speakers the subjects listened, and the subjects' L1, as shown in Table 4. There must be allowance for male and female speakers of each first language pair having similar comprehensibility partly because the Pearson Product-Moment Correlation Coefficients (dealing with Nominal, Ordinal, and Interval Scales) between male and female speakers of each language group shows strong positive correlation in the order of group means as follows:

Chinese: $r = .99$ Japanese: $r = .92$ American: $r = .79$ ($p < .05$)

and partly because, as the results of three-way AVOVA disclosed (Table 6), there are no significant differences between means according to the sex of the speakers. Therefore, it should be appropriate to dismantle the gender hedge of each nation's pair into the single speaker simply according to the nation as shown in Table 5, which also contains the standard deviations.

*Table 5*
*Means and SD according to the nation of speakers*

| | Speakers according to nation | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Chinese | | Japanese | | American | | Average | |
| Listeners | Mean | SD | Mean | SD | Mean | SD | Mean | SD |
| Chinese | 47.8 | 6.66 | 51.1 | 5.68 | 52.1 | 4.63 | 50.33 | 6.11 |
| Japanese | 46.2 | 6.73 | 52.3 | 4.71 | 51.6 | 4.45 | 50.03 | 5.96 |
| American | 53.5 | 3.56 | 56.3 | 3.95 | 57.1 | 1.51 | 55.53 | 3.15 |
| Average | 49.17 | 5.74 | 53.23 | 4.82 | 53.50 | 4.64 | 51.97 | 5.07 |

*Table 6*
*Summary of Three-Way ANOVA*

| Source | SS | df | MS | F |
|---|---|---|---|---|
| Sex | 1 | 62.5000 | 62.5000 | 2.36444 |
| Listener | 2 | 573.800 | 286.900 | 10.8537* |
| Speaker | 2 | 353.867 | 176.933 | 6.69357** |
| Sex x Listener | 2 | 18.2000 | 9.10000 | 0.344262 |
| Sex x Speaker | 2 | 12.8000 | 6.40000 | 0.242119 |
| Listener x Speaker | 4 | 33.5333 | 8.38333 | 0.317150 |
| Sex x List. x Speak. | 4 | 15.0000 | 3.75000 | 0.141866 |
| Residual (error) | 72 | 1903.20 | 26.4333 | |
| Total | 89 | 2972.90 | | |

* P < .005 (directional) ** P < .05 (non-directional)

The results of the 3-way ANOVA show that there is no significant difference between means according to sex, while there are significant differences between means according to both listener and speaker at .005 and .05 level, respectively. The results also show that the effect due to the interaction between sex and listener, between sex and speaker, between listener and speaker, or among

sex, listener, and speaker was not significant. The test did distinguish between Chinese, Japanese, and English speakers, as well as between Chinese, Japanese, and English listeners, although sex was found to not be a significant effect.

(2) Subjective Reactions

The subjective reactions of the subjects to readings: identifying the first language of each speaker from among Chinese, Japanese, and English (the choice had been given at the time of identification), and choosing the most difficult speaker to comprehend, are shown in Table 6.

*Table 7*
*Results of Subjective Reactions*

| | Male Speakers | | | | Female Speakers | | |
|---|---|---|---|---|---|---|---|
| | Form A | Form B | Form C | | Form A | Form B | Form C |
| C1 | J* | C | A | C6 | C | J* | A |
| C2 | C | J* | A | C7 | C | J* | A |
| C3 | J | A | C* | C8 | C | J* | A |
| C4 | C* | J | A | C9 | C | J* | A |
| C5 | C | J | A | C10 | A | J* | C |
| J1 | C* | J | A | J6 | C | J* | A |
| J2 | C* | J | A | J7 | C* | J | A |
| J3 | C* | J | A | J8 | C | J* | A |
| J4 | C* | J | A | J9 | C | J* | A |
| J5 | C* | J | A | J10 | C | J* | A |
| A1 | J* | C | A | A6 | C | J* | A |
| A2 | J* | A | C | A7 | C | J* | A |
| A3 | C* | J | A | A8 | C | J* | A |
| A4 | J* | C | A | A9 | J | C* | A |
| A5 | J | C* | A | A10 | C | J* | B |

Note: Keep in mind that the speakers of Form A, B, and C were Chinese, Japanese, and Americans, respectively. Letters marked with an asterisk are those who were judged the most difficult by subjects.

*Table 8*
*Ranking of The Most Difficult Speaker*

| Rank | Male speaker | | Rank | Among female speakers | |
|---|---|---|---|---|---|
| 1. | Chinese | | 1. | Japanese | |
| | chosen by Chinese | 60% | | chosen by Chinese | 100% |
| | by Japanese | 100% | | by Japanese | 80% |
| | by Americans | 80% | | by Americans | 100% |
| 2. | Japanese | | 2. | Chinese | |
| | chosen by Chinese | 20% | | chosen by Chines | 0% |
| | by Japanese | 0% | | by Japanese | 20% |
| | by Americans | 80% | | by Americans | 0% |
| 3. | American | | 3. | America | |
| | chosen by Chinese | 20% | | chosen by Chinese | 0% |
| | by Japanese | 0% | | by Japanese | 0% |
| | by Americans | 0% | | by Americans | 0% |

In the male division, 12 subjects chose the Speaker A (a male Mandarin speaker who recorded Form A) as the most difficult speaker to comprehend. Of the 12, 11 subjects took the worst score in Form A, in other words, 91.7% subjects took the worst score in the reading by the speaker they considered to be most difficult. When it comes to the female division, however, 14 subjects chose the Speaker B (a female Japanese speaker who recorded Form B), but only three subjects received the lowest in Form B -- 21%. Of the 14, 9 subjects scored worst in Form A -- 64.2%.

## Discussion

In this section, I would like to test hypotheses and answer questions presented at the *Introduction*.

Hypothesis 1: Native speakers of English will comprehend all non-native varieties better than non-native speakers.

Looking at Table 4, both of the means of the native speakers who listened to male speakers and those who listened to female speakers were highest. The results of a 3-way ANOVA in Table 5 shows that there are significant differences between means according to listener. Therefore, we accept this hypothesis.

Hypothesis 2: Native English speaker's English will not always be comprehended better than that of non-native speakers.

To test this hypothesis, we turn to Table 4. Among 6 subject groups, both of the Japanese subject groups took the highest mean in listening to male and female Japanese speakers' reading (the Japanese listener group who listened to female speakers took the same means in Japanese and English reading.) The rest of the groups scored highest in listening to native speakers' English. Besides, the differences between those scores proved to be significant from the results. Therefore, this hypothesis is accepted.

Hypothesis 3: The listeners will comprehend their L1 speaker's English best of all varieties, native or non-native.

Looking at Table 4 again, we understand this hypothesis is not acceptable. Chinese and American groups, both assigned to male and female speakers, achieved the best means in listening to American

English. Again the differences between those means proved to be significant from the results. Thus, this hypothesis is rejected.

Hypothesis 4: There will be significant differences between means of native English speaking groups who listened to Chinese English, and those who listened to Japanese English.

Looking at Table 4 again, the means of the American groups who listened to male speakers were 51.8 and 55.6 in listening to Chinese and Japanese speakers, respectively. Those who listened to female speakers were 55.2 and 57.0 in listening to Chinese and Japanese, respectively. The results show that differences of means according to listener are significant. Therefore, this hypothesis is accepted.

Hypothesis 5: There will be significant differences between means according to sex.

As the results show, there is no significant difference between means according to sex, and this hypothesis is rejected.

We now turn to answering the two questions.

Q1: Do subjective reactions and objective outcome coincide with each other?

Looking at Table 7, the male Chinese speaker who read the Form A and the female Japanese speaker who read the Form B were considered to be the most difficult speakers to comprehend by the majority of subjects. In the male division, 12 subjects chose the Speaker A (a male Mandarin speaker who recorded the Form A) as the most difficult speaker to comprehend. Of the 12, 11 subjects took the worst score in the narration read by a speaker they considered to be most difficult. In the female division, however, 14

subjects chose the Speaker B (a female Japanese speaker who recorded Form B), and only three subjects received the lowest in Form B -- 21%. Of the 14, 9 subjects scored lowest in Form A -- 64.2%.

Q2: Can listeners guess the L1 of the speakers? Can they identify their own L1 speaker more easily than other varieties?

Turning to Table 6, we see the following results:

Chinese, Japanese, and American listeners identified the three speakers' L1 correctly at the rate of 60%, 100%, and 50%, respectively. Looking at the correct identification of their own L1 speakers, the Chinese identified 70%, the Japanese identified 100%, and the American identified 90%. Turning our attention to the correct distinction of the two speakers other than their own L1 speaker, Chinese identified 60%, Japanese 100%, and the Americans 50%, all of which are identical with the rate of identifying the three speaker's first language. Judging from those results, the listeners in this study had less difficulty in identifying their L1 speaker than identifying the others.

Looking at the identification rate of American speakers, all three listener groups showed high rates: Chinese - 70%, Japanese - 100%, and American - 90%, all of which are, surprisingly enough, equivalent with the rate of identifying their own L1 speakers. The finding would suggest that native English could be identified as easily as the listeners' own L1 English. This was probably because most Chinese and Japanese ESL learners received a lot of interlanguage input from their Chinese and Japanese English teachers

and/or their fellow countrymen on campus whose pronunciation was much affected by their L1. Also, they should have been more exposed to native English pronunciation in their process of learning and their pedagogical context where native speakers' English is predominantly esteemed to be their target.

## Conclusion

Through the hypothesis testings in the previous section, we accepted the following:

> Native speakers were better at comprehending all varieties of English, native or non-native, than Chinese and Japanese speakers. But their English was not always comprehended better than that of non-native speakers. Japanese speakers understand Japanese English better than American English. In addition, Japanese English appeared to be more comprehensible to Americans than Chinese English. Also there was no significant difference between the means according to the gender of the speakers. The subjects who listened to the male speakers took the worst scores in listening to the male speaker they judged to be most difficult to comprehend, but this was not true of those who listened to the female speakers. It also turned out that the subjects identified their own L1 of the speaker more easily than other L1, and that native English was as identifiable as their own L1 English.

It should be noted that the findings above proved to be true only in this study and are not necessarily generalizable. Especially, it would be amiss to generalize that Chinese English is more difficult to comprehend for Americans than Japanese English. It is more probable that there might be a practice effect on the part of the subjects since both groups who listened to male speakers and female

speakers listened to the tape in the same order: Chinese speakers' reading at first, followed by Japanese, and American speaker's, or that the Form A was harder than the other two forms. Also the two Chinese speakers, male and female, mat have happened to be harder to comprehend than other speakers. Considering the results of the subjective reactions that showed that although 14 subjects chose the Speaker B speaker as the most difficult speaker to comprehend, as many as 9 subjects (64.2%) scored lowest in A speaker, the practice effect and discrepancy of difficulty of the forms could be responsible for the low comprehensibility of the Chinese speakers.

However, a significant contribution to the research field was that this study showed, as is supported by many preceding studies, that native speakers are not always more comprehensible than non-native speakers. This fact should be generalizable with much more certainty than any other findings in this study. Can it be suggested from the results of this study that ESL learners should not target their efforts at mimicking any certain "native brand" of English, and should simply concentrate upon comprehensibility to any English speaker? We now turn to the discussion of pedagogical implications from this study.

## Pedagogical Implications

First of all, it is crucial to make a clear distinction between EFL and ESL situations, and it should be noted that 20 out of 23 non-native subjects and speakers of English came from EFL countries--

Japan, Taiwan, and China, where English is taught "as a subject in schools but not used as a medium of instruction in education, nor as a language of communication within the country" (Richards et al. 1985). In Japan, Taiwan, and China, the learners have, except for a few adventurous English bandits[2] and those blessed with intercultural contacts, limited exposure to English outside of the classroom.

Although EFL learners are more likely to have exposure to native Englishes--American or British, than to non-native Englishes, we should always keep in mind that English is spoken by more non-native speakers throughout the world. Larry Smith and et al. (1983) concluded that being able to understand native speakers does not necessarily imply that non-native students of English will be able to comprehend fluent non-native speakers. Then, our next question is "how can we incorporate those non-native varieties of English into our classrooms in addition to the standard native English?"

In an EFL situation, it is most likely that the majority of students learn English from teachers with the same first language background, which means that Japanese learners, for instance, have already been exposed to interlanguage or the so called "Japanese English" in their daily lessons. It can be said therefore that EFL learners have rich exposure to a single non-native English, namely to their own. Since English is more comprehensible to those who have active exposure to it (Smith and et al. 1983), there may be a positive correlation between the hours of exposure to a certain variety and

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comprehensibility of the variety. This study partially supported the axiom, although Chinese subjects showed a rather negative correlation.

In an EFL classroom, the learners have already been exposed to two varieties--the standard native English and their interlanguage. Is it practical then to add another variety or more varieties into this situation? I believe there is a pedagogical limitation here. Considering the time and energy of EFL learners, it could be a heavy burden for learners to learn another variety in addition to the two varieties mentioned.

It may be up to individual learners to cope with it. Once EFL learner have learned a standard English in their home country, then they should actively interact with other non-native speakers at their own will. Through greater exposure and interaction, they will get used to them, and as a result, their comprehension of other non-native varieties should improve over time.

From a practical point of view, therefore, in EFL classrooms, a standard English or native English should remain the norm. There is no reason for Japanese teachers to encourage their students to speak Japanese English, or to pronounce English sounds with a Japanese accent. Larry Smith (1981) suggested "the target should be what is grammatically acceptable, identifiable, and phonologically intelligible as educated non-native Englishes".

Unlike ESL learners, who have a great deal of exposure to their own variety of English in school, government offices, and through mass media, EFL learners may wonder what "the educated non-native Englishes" are. For Filipino speakers of English, it may be

their president's English or that of their school teachers. The Japanese learners of English would ask "what is the educated Japanese English?" It is doubtful that there is an educated Japanese English or something of that nature.

Without any tangible entity we can call educated Japanese English, the plain fact is that it is more natural that Japanese students are encouraged to seek native English as their goal, but simply, the result is "Japanese English". This is because output or acquisition is usually lower in quality than input. (Yashiro 1988). For example, if you teach Japanese learners and advise them from the beginning to substitute a certain English vowels which are difficult for them to articulate with certain Japanese phonemes approximate to the English sounds, rather than having them take pains to master the English vowel, their actual outcome will be far from perfect, and difficult for non-Japanese listeners to comprehend, which will result in communication failure.

My stance is that it is up to individual learners' access to active involvement with non-native varieties, whether in face-to-face interaction, or listening to the radio or watching TV, in order to improve his/her comprehension. Classroom teaching should keep on nurturing a standard norm for students. It should also be pointed out that there are few comprehensive teaching materials that explicitly deal with non-native varieties of English.

## Notes

1. According to James Alatis, the dean of the School of Languages and Linguistics at George Town University, Washington (1989), the United Information Agency estimated about 700 million of people used English as a first or second language every day, among of which the number of the native speakers was estimated at only 315 million.
2. This word refers to those who approach foreigners on the street or somewhere to practice free English conversation with them.


## ACKNOWLEDGEMENTS

This paper grew out of a final project for ESL 660: Sociaolinguistics and ESL at University of Hawaii at Manoa in Spring 1989, lectured by Dr. Karen Watson-Gegeo. I thank for her encouragements and discussion. I also thank Professor J.D. Brown, Mr. Danny Jansen and Mr. Peter Bonn for technical assistance. Finally, I appreciate Professor Larry Smith for useful comments on a carly version.



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