

English auditory discrimination test for Japanese

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일본인을 대상으로 한 영어 청취판별 테스트

이현복, 송윤경, 공정혜

이 논문의 목적은 일본 학생들의 영어 청취 능력에 대한 확실한 평가를 내릴 수 있는 청취판별테스트를 개발하는 데에 있다. 이 테스트를 통하여 일본사람들이 범하는 청취 오류를 평가, 분석하고 일본어의 음성·음운체계가 이러한 오류에 미치는 영향을 평가한다. 테스트의 결과는 청취 및 발음훈련에 적용될 수 있으므로 일본인의 영어 능력을 향상시키는데 공헌할 수 있을 것이다.

1. Introduction

The aim of this paper is to develop an auditory discrimination test for a reliable assessment of Japanese students' English auditory ability¹⁾. Japanese people, like the

1) English means British English in this paper.

people of other countries, encounter great difficulty in listening to English sounds correctly.[1,2] Using this test tool we will make an attempt to analyze and evaluate the English listening errors by Japanese and to assess the influence of the Japanese phonetic and phonological system on these errors. Moreover, it is hoped that this test tool will contribute to improving the auditory ability of the Japanese people to distinguish English as well.

2. Need for EADT for Japanese

The EADT(English Auditory Discrimination Test) for Japanese is a modified version of Lee's EADT for Korean.[4] This EADT for Japanese is composed of 40 word pairs of which 37 pairs are real minimal pairs and the rest homophonous synonyms.[3, 4] Nine out of the 40 word pairs in EADT for Japanese are different from that for Koreans. The ratio of consonant word pairs and vowel word pairs in the EADT for Japanese is 24 to 16. It is to be noted that a series of preliminary tests were conducted and consultation made with about 20 Japanese students before this version of EADT for Japanese was finalized. (c.f. EADT for Japanese)

3. Comparison of EADT for Japanese with that for Koreans

- 1) The following phoneme pairs are found in EADT for Koreans and Japanese

consonant pairs : z-ㄷ, z-dz, t-θ, l-r, θ-z, z-ㅈ, s-ㅍ, ㅍ-ㅌ, k-p, ㅍ-θ,
k-g, θ-d, dr-ㄷ, dz-ㄷ, f-p, θ-s, ㄷ-ㅈ, kl-kr, v-b. (19)

vowel pairs : ㅜ-u, ㅏ-ㅓ, ㅑ-ㅓ, e-ㅓ, ㅓ-ㅓ, ㅓ-ㅓ, ㅏ-ㅓ, e-æ, əu-ㅓ,
ㅓ-ㅓ, əu-ㅓ, ㅓ-ㅓ. (12)

- 2) Different phoneme pairs in EADT for Koreans and Japanese

- a) Phonemes found only in EADT for Japanese

(4 consonants, 5 vowels)

s-s (sin-sin), uə-uə (tour-tour), au-au (loud-loud),
s-ts (mass-mats), n-ŋ (ban-bang), θ-f (three-free),
n-nt (pain-paint), æ-ㅏ (cat-cut), eɪ-e (pain-pen).

b) Phonemes found only in EADT for Koreans

(6 consonants, 3 vowels)

z-z (zone-zone), ð - ð (there-there), r-r (rive-rive),

ɪ-ɪ ('hid-hid', 'pit-pit'), ə-ə (sir-sir), s-z (peace-peas),

t-d (wet-wed), ts-tʃ (cats-catch).

ENGLISH AUDITORY DISCRIMINATION TEST
(for Japanese)

	Different	Same
1. dead - dad	D	S
2. zoo - jew	D	S
3. sin - sin	D	S
4. low - law	D	S
5. cork - cock	D	S
6. bees - beads	D	S
7. tie - thigh	D	S
8. lung - rung	D	S
9. breathe - breeze	D	S
10. ruse - rouge	D	S
11. code - curd	D	S
12. cat - cut	D	S
13. lease - leash	D	S
14. cheese - trees	D	S
15. tour - tour	D	S
16. lick - lip	D	S
17. shred - thread	D	S
18. heart - hurt	D	S
19. mass - mats	D	S
20. full - fool	D	S

	Different	Same
21. three - free	D	S
22. duck - dark	D	S
23. lack - lag	D	S
24. patted - pattered	D	S
25. ban - bang	D	S
26. they - day	D	S
27. loud - loud	D	S
28. drain - Jane	D	S
29. pain - paint	D	S
30. ten - tin	D	S
31. aids - age	D	S
32. leave - live	D	S
33. fie - pie	D	S
34. thick - sick	D	S
35. turn - torn	D	S
36. such - search	D	S
37. ledger - leisure	D	S
38. clue - crew	D	S
39. pain - pen	D	S
40. vow - bow	D	S

Every language has its own phonological systems and syllable structures, and the

speaker of a language tend to perceive sounds of a foreign language on the basis of their native sound system. For instance, unlike English and Korean, the typical Japanese syllable structure is CV type, and therefore Japanese people can not recognize some phonemes correctly when there are two consonants coming in succession.[1, 2, 5, 6]. This fact was taken into account in devising EADT for Japanese. Similarly, minimal pair of nasals were constructed to represent the Japanese tendency to confuse [ŋ] with [m](three pieces of paper, 'sammai'), [n](three people, 'sannin'), [ŋ](three times, 'sa ŋ kai') in final [ŋ].

4. EADT test with Japanese subjects

Twenty subjects were asked to listen to the recorded tape and each item was repeated twice²⁾. They were instructed to listen to each word pair and check on the answer sheet if the pair of words were "same" or "different". In addition, we had them write down the word that they heard either in spelling or phonetic symbol with a view to extract further information, if any, from the subjects.

4.1. Subjects

Twenty students took part in the test, and they were all students in the graduate school or Language Institute of Seoul National University. They are 4 high school graduates, 5 community college students, 7 university students and graduates, and 4 graduate school students. As in Korea, most students in Japan study English from middle school, so their period of English study is minimally 6 years, and maximally 15 years. Their average period of English study is 9.5 years, and the rate of men and women is 7:13.

<table 1> Subjects' period of English study

period of English study	the number of subject
6 year	4
8-9 year	5
10 year	7
12-13 year	2
14-15 year	2

2) Lee Hyun Bok recorded the EADT list in audio tapes.

4.2. Test results

4.2.1. "Different/Same" test results

It is related to the distinction of "different/same" of two phonemes. Even though the subjects could not distinguish phonemes accurately, we requested the subjects to mark if the two words are different or same. In 16 items out of 40, all could distinguish different/same of two phonemes accurately.

consonants : z-ʒ, s-s, s-ʃ, tʃ-tr, ʃ-θ, k-g, n-nt, (7 of total 24, 29%)

vowels : e-æ, əu-ɔ, ɔ-ɒ, əu-ɜ, ɑ-ɜ, ʌ-ɑ, au-au, i-i, ɜ-ɔ

(9 of total 16, 56.3%)

The phoneme pairs /ʒ-ʒ/ marked the worst error rate of all. 11 students out of 20 failed to distinguish these phonemes, and the error rate being 55%. The error rate for various phoneme pairs is as follows:

<table 2> Consonant error rate in "Different/Same" Test

phoneme pairs	error rate
ʒ-ʒ	55%
t-θ, n-ŋ	45%
z-dz, v-b	35%
ð-z, kl-kr	25%
θ-f	20%
l-r	15%
z-ʒ, f-p	10%
k-p, s-ts, θ-d, dr-ʒ, dz-ʒ, θ-s	5%

<table 3> Vowel error rate in "Different/Same" Test

phoneme pairs	error rate
i-ə	30%
æ-ʌ	15%
uə-uə, ʊ-u, e-i	10%
ʌ-ɜ, eɪ-e	5%

The results given above indicate that for many Japanese subjects consonants are

more difficult to distinguish than vowels.

4.2.2. Transcription test results

Even if the subjects answered different/same phonemes correctly, many subjects could not get them right in the transcription of spelling and phonetic symbols. This shows that they are not aware of the accurate phonetic values of each phoneme. In the transcription test, it was found that none of the 40 items was correctly discriminated by all subjects taking part in the test. The following table shows the error rate for phoneme pairs.

<table 4> Consonant error rate for the Transcription Test

phoneme pairs	error rate
l-r	90%
ð-z, ʃ-θ, dr-dʒ	75%
s-s, t-θ, z-ʒ, n-ŋ, dʒ-ʒ	70%
z-dz	65%
z-dʒ, s-ʃ, k-g, dz-dʒ	60%
k-p, s-ts, kl-kr	55%
f-p, θ-s, v-b	50%
ð-d	45%
θ-f	40%
tʃ-tr	35%
n-nt	25%

<table 5> Vowel error rate for the Transcription Test

phoneme pairs	error rate
əu-ɜ, ɑ-ɜ	90%
ɔ-ɒ, ʌ-ɑ	75%
əu-ɔ, ʊ-u, ɪ-ə	70%
ɜ-ɔ	50%
uə-uə, e-ɪ	45%
æ-ʌ	40%
ɪ-ɪ, ʌ-ɜ, eɪ-e	35%
au-au	30%
e-æ	25%

4.2.3. Comparison of "Different/Same" test with Transcription test

If we compare the results of different/same test with that of the transcription test, we can see that many subjects regard the concrete phonetic values more difficult to distinguish than a simple "different/same" relation. This means that many subjects can not recognize accurately what that phoneme is even though they can more or less distinguish different/same relation. Besides, in the result of "different/same" test the subjects distinguished the vowels better than the consonants, but in the transcription test they could not distinguish the consonants and vowels correctly.

4.2.4. Summary

1) In "different / same" test, English consonants have turned out to be more difficult than vowels for Japanese people to distinguish.

a) Consonant pair /dʒ-z/ marked the worst error rate of 55%,

and /t-θ/, /n-ŋ/ marked the error rate of 45%.

b) Of vowel pairs, /ɪ-ə/ was the most difficult one.

2) In the transcription test, both consonants and vowels were difficult for Japanese to distinguish.

The phoneme pairs which marked the error rate of over 70% are follows:

a) consonant pairs

l-r(lung-rung), ð-z(breathe-breeze), ʃ-θ(shred-thread),

dr-dʒ(drain-Jane), s-s(sin-sin), t-θ(tie-thigh),

z-z(ruse-rouge), n-ŋ (ban-bang), dʒ-z(ledger-leisure)

b) vowel pairs

əu-ɜ(code-curd), ɑ-ɜ(heart-hurt), ɔ-ɒ(cork-cock),

ʌ-ɑ(duck-dark), əu-ɔ(low-law), ʊ-u(full-fool),

ɪ-ə(patted-pattered)

<table 6> Comparison of error rate of “Different/Same” Test
and Transcription Test

	D-S error	transcription error		D-S error	transcription error
1. dead - dad	-	25%	21. three - free	20%	40%
2. zoo - jew	-	60%	22. duck - dark	-	75%
3. sin - sin	-	70%	23. lack - lag	-	60%
4. low - law	-	70%	24. patted-pattered	30%	70%
5. cork - cock	-	75%	25. ban - bang	45%	70%
6. bees - beads	35%	65%	26. they - day	5%	45%
7. tie - thigh	45%	70%	27. loud - loud	-	30%
8. lung - rung	15%	90%	28. drain - Jane	5%	75%
9. breathe- breeze	25%	75%	29. pain -paint	-	25%
10. ruse - rouge	10%	70%	30. ten - tin	10%	45%
11. code - curd	-	90%	31. aids - age	5%	60%
12. cat - cut	15%	40%	32. leave - live	-	35%
13. lease - leash	-	60%	33. fie - pie	10%	50%
14. cheese - trees	-	35%	34. thick - sick	5%	50%
15. tour - tour	10%	45%	35. turn - torn	-	50%
16. lick - lip	5%	55%	36. such - search	5%	35%
17. shred - thread	-	75%	37. ledger - leisure	55%	70%
18. heart - hurt	-	90%	38. clue - crew	25%	55%
19. mass - mats	5%	55%	39. pain - pen	5%	35%
20. full - fool	10%	70%	40. vow - bow	35%	50%

5. Conclusion

The following conclusion can be drawn from this paper;

- 1) EADT is a simple and useful test tool for assessing the English auditory discrimination ability of Japanese.

2) In “Different/Same” Test, English consonants have turned out to be the more difficult than vowels for Japanese people to distinguish. In the transcription test, however, both consonants and vowels were difficult for Japanese to distinguish.

3) The results of EADT can be readily applied to pronunciation as well as listening drill for Japanese.

4) In view of some phonetic differences between British and American English, it may be necessary to develop an EADT for those familiar with American English.

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