A Second Experiment on the Perception of Articles in Spoken English by Japanese College Students

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Introduction

In our 1990 study, we observed that phonetic environments play a significant role in the degree of difficulty experienced perceiving articles. In a second experiment, which we report here, we prepared a set of phonetic environments which were not studied in our first experiment and carried out the research on this factor in the perception of English articles. The environments include not only different phonemes but also some consonant clusters.

Subjects and Linguistic Materials

We tested a total of 273 Japanese speakers of English. All of the subjects were college undergraduate students in their early twenties. The listening sessions were held in a sound-proofed room at a university. All of the subjects had normal speaking and hearing abilities according to self-report. A partial dictation test was designed to test the listening abilities for articles. We prepared two reading texts in which there were a total of 92 sentences, i.e. 46 sentences in each of the two reading texts. The two texts were prepared for the purpose of shortening the duration of one test and giving two sessions instead of one to the same listeners. Different sentences were devised for the two texts.

Procedure

The same procedure was employed in this experiment as in our 1990 study. An American professor of English, a speaker of General American, served as the speaker. He was asked to produce the sentences at a natural speaking rate. He repeated each sentence three times in succession with a short pause between the first and second repetitions, and with a pause of 6 seconds after the third repetition.

On the answer sheet, not only the target article but also the preceding and following words were blanked out. The listeners were instructed to write down what they heard. They were allowed to write any time during the repetitions of the sentences and during the longer pause after the last repetition. However, they were told not to change their answers after they heard the next sentence. The listeners did not know the specific purpose of this test.

Results

Table I shows the results. The overall average of correct answers was 71% for the article "a" and 81% for "the". The listeners did better in Text 2 in the case of "the" than in Text 1. However, we did not observe any significant difference in the case of "a".

As in Experiment 1, we can observe that the phonetic environment exerts a significant influence on the degree of difficulty in the perception of articles for Japanese listeners (Table II). The percentage of correct perceptions for "a" ranged from 91% to 15%, while the percentage for "the" ranged from 96% to 31%. The environment where the correct percentage was the lowest was /kt/ for "a" and /m/ for "the". After nasals, the listeners tended to hear "a" instead of the correct "the".

In addition, we can observe that the degree of difficulty in a certain environment depends on whether the article is "a" or "the". There were 10 out of 23 environments tested in this experiment where we observed a more than 20% difference in the percentage of correct answers depending on whether the article was "a" or "the". A striking difference between these two articles was found in the environment /kt/, where the average percentage of the correct answers was 15% for "a" and 81% for "the". Also, it should be noted that /kt/ and /lt/ were difficult environments in which to perceive "a", while /t/, /nt/, /ld/, /k/ and /g/ were found to be not so difficult. It might be the case that the closure duration of a stop is a factor in the different degrees of difficulty for the perception of "a" in these stop environments. A spectrographic analysis is now being carried out to test this interpretation. The results in this experiment together with those in our 1990 study will contribute to devising more effective teaching materials for Japanese learners of English.

References

Michiko Mochizuki-Sudo et al. (1990) The perception of articles in spoken English by Japanese college students, Annual Bulletin of Research Institute of Logopedics and Phoniatrics, University of Tokyo, 24, 163-170.

Table I Percentages of listeners with correct answers and incorrect answers. Errors were classified into five categories: a, the, 0, NA and other. "0" and "NA" stand for no article and no answer, respectively. "Other" refers to answers which could not be included in the other categories.

List \ Answers		Correct Answers	Errors				
			a	the	o	NA	Other
List 1	a	70	*	21	4	2	3
	the	78	15	*	3	2	2
List 2	a	71	*	20	3	4	2
	the	85	9	*	2	3	1
Average	a	71	*	20	3	3	3
	the	81	12	*	3	3	1

Table II The influence of phonetic environment on the degree of difficulty in the perception of articles.

Consonant	Correct answers	Errors				
		a	the	0	NA	Other
p	68	*	22	3	1	6
	90	8	*	1	0	1
b	61	*	27	4	6	2
	79	5	*	6	9	1
t	75	*	12	4	3	6
	73	21	*	5	1	0
kt	15	*	67	6	5	7
	81	10	*	4	2	3
nt	66	*	27	2	1	4
	77	16	*	2	0	5
lt	51	*	45	1	2	1
	79	8	*	9	3	1
ld	62	*	26	7	1	4
	60	35	*	2	1	2
k	92	*	4	4	0	0
	83	10	*	6	1	0
g	90	*	3	2	3	2
	85	9	*	2	3	1
f	52	*	26	9	8	5
	89	3	*	3	2	3
s	65	*	32	1	2	0
	95	2	*	1	2	0
ps	57	*	31	7	2	3
	88	8	*	2	0	2
θ	88	*	10	1	1	0
	90	3	*	1	4	2
ð	34	*	57	2	4	3
	78	12	*	5	4	1
ʃ	64	*	31	2	1	2
	91	4	*	2	3	0
dʒ	90	*	7	2	0	1
	96	2	*	1	0	1
tʃ	90	*	8	1	0	1
	97	2	*	0	0	1
m	87	*	6	2	5	0
	31	57	*	3	8	1
ŋ	91	*	9	0	0	0
	58	42	*	0	0	0
r	85	*	11	3	1	0
	94	5	*	1	0	0
l	86	*	4	3	3	4
	96	2	*	0	1	1
ɔ	84	*	8	3	5	0
	92	5	*	1	2	0
eI	85	*	3	4	5	3
	73	12	*	5	8	2