

A STUDY OF ENGLISH PHONOLOGY LEARNING : A CROSS-SECTIONAL STUDY IN THE JAPANESE SETTINGS

TOSHIAKI OZASA

Summary

The aim of this study was to describe and explain the process of the learning of English phonology by Japanese learners who are learning English in the Japanese formal education settings. To fulfill this goal, we designed a cross-sectional experiment involving 3 variables: linguistic features, time and degree of attentiveness. The findings are as follows:

- (1) The learners developed various kinds of interlanguage performance rules as a transitional strategy, which included not only L₁-based but also more advanced transitional rules.
- (2) The improvement of pronunciation over time was accounted for in terms of 'wave theory'.
- (3) The effect of the time factor on performance was found to be strong.
- (4) The degree of attentiveness had no effect on performance.

1. Background of the study

It has long been empirically evident that the phonological system is one of the most difficult areas for Japanese learners of English and this recognition has led many applied linguists as well as English teachers to attempt the description and explanation of this phenomenon. Among many attempts made in the past, the most productive analysis as well as scientific in approach was contrastive analysis of the structures of L_t and L₁.

The contrastive analysis, which was most influential, roughly, during 1959's and 1960's in Japan, was methodologically based on (American) structural linguistics and its aim was to pinpoint the difficult parts of the L_t structure and predict their relative difficulty for the learners. As a procedure for this aim, first, the structures of L_t and L₁ were analysed and compared and, based on this comparison the patterns which were most obviously different from each other were extracted. The underlying assumption of this approach was that the learners' difficulty with pattern can be accounted for in terms of the difference between the two systems. In other words it was assumed that the learners' difficulty is a function of the structural difference between the

two systems.

This assumption was to some extent proved to be valid by experiment: some contrastive analysis was found to be successful in predicting difficult points for the learners. Kleinjans (1959), for example, succeeded in predicting the difficult patterns of the noun modification structure of English. He compared the noun-head modification structure of English (L_t) and Japanese (L_1) and, based on the comparison, classified the patterns into four groups, according to the predicted difficulty for Japanese learners. Then, he gave a test on these patterns to Japanese students and checked its predictability against the test results. It was found that the prediction highly correlated with the test results. Kleinjans' study can be taken as an example of the predicted success of contrastive analysis in language learning.

Another well-known contrastive study of English and Japanese, this time, in phonology, was done by Kohmoto (1969). Kohmoto, after a comprehensive contrastive study of English and Japanese phonological structures, predicted vocalic intrusion/addition in the pronunciation of English consonant clusters and final consonants by Japanese learners, and checked its explanatory potential against the results of the test he gave to the subjects. (There seem to be some deficiencies in the sampling method and number of the subjects in this test. The number of the subjects was only 5 and their proficiency level varied from undergraduate to graduate level.) The test items consisted of 16 final consonants and 7 CC patterns. The test results showed that all the error performances can be accounted for in terms of vocalic intrusion/addition, as predicted, except for /sn/ and /sk/ patterns, where 3 cases of lengthening /s/ was observed for /sn/ and 2 cases for /sk/.

Kohmoto's results almost perfectly support the transfer hypothesis based on the $L_t - L_1$ contrastive analysis. His study was generally taken as an example of the explanatory power of contrastive studies in language learning. However, there may be some experimenter's 'bias' involved here as well as the bias caused by the small, heterogeneous subjects. Generally, we tend to see what we *want* to see. Since transcription of phonetic performance is an essentially subjective matter, it is likely that their transcription was influenced by this basic assumption (the transcription was done by two people, including Kohmoto). However, it should be noted that even in the contrastive analysis-favoured experiment, some transitional performances between the transfer of Japanese structure and the target performance, were observed, i. e., lengthening a consonant. This means that contrastive analysis cannot perfectly predict and explain the learner's performance rules, and, further, it suggests there is room for an alternative approach.

Corder (1967) was perhaps the first to introduce a new dimension of transitional competence and set up a new framework for the study of this phenomenon. This includes in its framework not only learner's transfer errors (explainable on contrastive analysis assumptions) but also other various interlanguage strategies. In this framework,

the main concern is the transitional nature of the learner's interlanguages which approximate gradually to the target linguistic system. A learner's errors were taken as evidence of the system of the language that he is using at a particular point in the course,¹ and now, attempts are made to classify the nature and structure of the learner's transitional process of language learning/acquisition.

One of the interesting studies made under the framework of 'interlanguage' was Dickerson's (1975) longitudinal studies of the acquisition of the English phonology system by Japanese learners in an intensive course.

Dickerson, under the influence of a biological assumption, "ontogeny recapitulates phylogeny", was interested in the relationship between the way a second language is acquired and the way language changes in society and found that both processes have something in common. Dickerson studied the <<1>> variability of Japanese learners of English in an intensive course in U. S. A. and he concluded that one can apply the same wave theory Labov proposed in his analysis of language (pronunciation) change in a society to this process of learning /1/ phoneme pronunciation. Further, he claimed that the wave mechanism applied to the acquisition of /1/ is not unique to Japanese learners nor to the (1) word class, but it has proved to be the case in other word classes and in the case of learners from other language backgrounds.

Another important point he makes is that the learner's phonological system is a system of variable rules. Sound system learning proceeds by the systematic application of modification rules which gradually approximate to the target rules. Thus, Dickerson claims that the learner's phonological system is not an interlanguage as it is defined in static terms (competence rules) and rejects the notion of 'error analysis' in favour of 'variability analysis'.

2. The aims of the study

With this approach as background, we aimed in the present study, to describe and explain the process of the learning of features of English phonology by Japanese learners who have received their formal English language teaching in Japan. To state it more specifically, our aims were :

- (1) To describe and explain the process by which Japanese learners learn the pronunciation of selected consonant cluster patterns and simple final consonants.
- (2) To describe and explain the transitional strategies employed by learners to approximate their pronunciation to the target performance.
- (3) To examine the variability of performance related to the degree of

1. S. P. Corder. "The Significance of Learner's Errors" *Error Analysis* Ed. J. C. Richards (London.: Longman, 1974), p. 25.

attentiveness.

In this study our main concern was in the transitional nature of the interlanguage performances of Japanese students.

3. Method

3.1 Three factors involved in the experiment

To fulfill the aforementioned aims, we designed an experiment which involved three factors, (1) linguistic features; (2) degree of attentiveness, and (3) developmental stages. In designing an experiment, basically, we followed Dickerson's study, but some important modifications were made to achieve our own goals.

First, the testing area was changed from <<1>> to initial and final consonant clusters (including single final consonants). Then, the settings of L₂ learning were changed: in Dickerson's study, the subjects were Japanese students attending an English course in U. S. A. not in Japan. It is generally agreed that there are great differences in learning conditions between Japanese learners in U. S. A. and Japanese learners in Japan, in the quality and quantity of the teachers/models, the student's motivation, etc. Consequently, Dickerson's finding could not simply be extended to Japanese EFL settings. In this sense, it is worth trying the same kind of follow-up study in Japanese EFL settings. The significance of the present study lies in its attempt to check the relevance of Dickerson's assumption for Japanese settings.

The last important modification was the addition of a new factor, the degree of attentiveness. In his experiment, Dickerson used dialogues and word lists as a test format and asked the subjects to read for recording. In doing this he assumed their reading to be inattentive performance without making any distinction between dialogue reading and word reading. In the present study, we wanted to test the learner's attentive performance rules and inattentive performance rules for the same linguistic features. By so doing we hoped to see the difference between these rules, and also their relative relevance to the study of phonology acquisition/learning.

In analysing the data, we followed basically Dickerson's quantitative method for analysing the process of Japanese students' acquisition of /l/ phoneme. We expected that Labov's wave theory hypothesis would help to explain the acquisition process of the English consonant cluster patterns. We expected ontogeny to recapitulate phylogeny.

In the following three sections, the three factors of this experiment will be described in detail, with examples.

3.1.1 Linguistic features

We are here concerned only with the pronunciation of consonants, in particular the pronunciation of certain English initial and final consonant clusters and final single consonants. Syllable structure is one of the areas in which English and Japanese

differ most strikingly. The Japanese phonological system allows only a CV syllable structure (except in the case of /n/), whereas English phonological rules allow a range of structure such as :

$$\left\{ \begin{array}{c} C \\ CC \\ CCC \end{array} \right\} V-$$

$$-V \left\{ \begin{array}{c} C \\ CC \\ CCC \\ CCCC \end{array} \right\}$$

From among many possible consonant combination structures, we selected at random three realisations of consonant clusters for each of the four possible consonant patterns, C, CC, CCC and CCCC. All the four patterns occur in the final position and furthermore, the CC and CCC patterns also occur in the initial position. Thus we had three examples of the realisations for each of the 4 final consonant cluster patterns and 2 initial patterns, in total 6 patterns. The following are the linguistic realisations of consonant clusters randomly selected for the purpose of the present study.

(1) Final position		linguistic realisation	
		part 1	part 2
-C #	/p/	map	cap
	/d/	card	sand
	/tʃ/	church	match
-CC #	/ls/	pulse	else
	/pt/	stepped	stopped
	/ft/	sniffed	laughed
-CCC #	/kst/	next	text
	/lpt/	helped	helped
	/spt/	grasped	claspd
-CCCC #	/ksθs/	sixths	sixths
	/lfθs/	twelfths	twelfths
	/ksts/	texts	texts
(2) Initial position			
# CC-	/sp/	span	spin
	/kr/	cream	Christmas
	/pl/	plus	play
# CCC-	/spr/	spray	spring
	/spl/	splinter	split
	/str/	straight	stray

3.1.2 Difference in attention

In dealing with the analysis of learner's language, Widdowson proposes a distinction between expression rules and reference rules. Expression rules characterise what the learner *does* while reference rules characterise what a learner knows.² In other words the former rules govern communicative use when the speaker's attention is on the *content* of speech and the latter govern linguistic usage when his attention is on the linguistic form. Richards (1973) makes a similar distinction between competence errors and performance errors, as does Dickerson between variability analysis and error analysis.

In this experiment we wanted to see the difference between the two rules with regard to the same linguistic features. We found, however, that it was not easy to test the speaker's expression rules in the language by controlled test. So we had to content ourselves with attempting to test the two types of rules governing attentive and inattentive performance. Inattentive performance is observed when the subject's attention is distracted by a special testing technique. These are not, strictly speaking, real communication situations, but we hoped that the results would give some insight into the attentive/inattentive performance rules.

In order to test the subject's inattentive performance and to compare it with his attentive performance, we devised a "guised test",³ in which the real testing points are guised by underlining the feigned, dummy word. For example, when we wanted to see the inattentive performance rule of /p#/ we put it into a sentence like "Tom, here's your cap" and underlined here's thus guising the real testing point, *cap*. By underlining the dummy words, we hoped and assumed that the subject would pay attention to it and thus his pronunciation of *cap* would reveal the subject's inattentive performance rule. Although this is not a natural communication situation, we think that in practical terms this is one of the best methods of eliciting the controlled response of inattentive performance under experimental conditions.

In order to see the difference between the two distinct performance rules, we divided the test into two parts, one for the attentive performance rules and the other for inattentive performance rules. In the former test the testing points were explicitly

-
2. H. G. Widdowson. "The Significance of Simplification". (mimeographed paper), p. 3.
 3. "Guised test" is a technique employed by Gardner & Lambert (1972) in their study on bilingualism to elicit the subject's stereotypes toward French and English-speaking people. For this test recordings were made of the four fluent English-French bilinguals who read the same passage once in English and again in French. Then the subjects were asked to rate the personality of the speakers. In this test it was hoped that the student was thinking that he was evaluating the speaker's personality but was evaluating the *guises* of accents. The significance of this technique lies in the fact that it can test the testing points without being detected by the subject. (The technique of 'guised test' is fully explained in Gardner & Lambert (1972, pp. 97-104).

shown to the subject while in the latter, they were 'guised' by intentionally underlining the dummy testing points. In part 1, the subject was asked to pronounce a list of 18 isolated words each containing one testing point. Here we expected that the subject would pay the maximum attention to those words and thus pronounce them with most care. In part 2, the same testing points were tested, but this time, by the guised technique, the testing point was obscured. To do this, we needed two words which contain the same testing points (consonant cluster pattern) in almost the same phonological environment. Thus, we asked the subject to pronounce *map* in part 1, and, in part 2, "Tom, here's your cap" (*cap* is testing point) for C# pattern.⁴ The following are the list of words and sentences used for the test of attentive performance rules (part 1) and inattentive performance rules (part 2).

Part 1	Test of attentive performance	Part 2	Test of inattentive performance
1 -C#(F)	{ /p/ map /d/ card /tʃ/ church	Tom, <u>here's</u> your (cap).	
		You can't build a <u>house</u> on the (sand).	
		He <u>lit</u> a (match).	
2 #CC-(I)	{ /sp/ span /kr/ cream /pl/ plus	The car <u>went</u> into a (spin).	
		(Christmas) is <u>coming</u> .	
		Shall we (play) <u>volleyball</u> ?	
3 -CC#(F)	{ /ls/ pulse /pt/ stepped /ft/ sniffed	What (else) do you <u>want</u> ?	
		The car (stopped) at the <u>post-office</u> .	
		He (laughed) a <u>lot</u> .	
4 #CCC-(I)	{ /spr/ spray /spl/ splinter /str/ straight	(Spring) is <u>coming soon</u> .	
		The <u>wood</u> (split) into two parts.	
		The (stray) dog was <u>dirty</u> .	
5 -CCC#(F)	{ /kst/ next /lpt/ helped /spt/ grasped	He <u>read</u> the (text).	
		He (helped) her mother with the <u>work</u> .	
		He (clasped) the ball in his <u>hand</u> .	
6 -CCCC#(F)	{ /ksθs/ sixths /ltθs/ twelfths /ksts/ texts	Five-(sixths) is greater than <u>one-third</u> .	
		He changed the <u>fraction</u> into (twelfths).	
		The <u>required</u> (texts) were on the reading list.	
Keys:	C: Consonant	(cap) indicates a testing point in the	
	F: Final position	guised test.	
	I: Initial position		

4. In the British tradition, the underlining of a word of a sentence is conventionally taken as a mark for a stress contrast. In Japan, however, there is not such a tradition and therefore it is unlikely that an underlined word is pronounced as a tonic word with sentence stress.

