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Aspects of Phonological Competence in Japanese EFL Learners

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Introduction

Communicative failure is a common occurrence in verbal exchanges between native and non-native speakers or even between two second language (L2) learners. Causes are numerous and varied: pragmatic considerations, morphosyntactic errors and lexical shortcomings are all common. Repairs can take the form of circumlocutions or lexical/grammatical alternatives and are positive learning experiences for students and instructors alike. Often, however, native speaker or nonnative speaker (NS or NNS) listeners are unable to determine what has been said because the sounds the speaker (NS or NNS) produces are not recognizable to the listener and thus cannot be coded into meaningful speech. In these cases, repair must be undertaken in the form of increased accuracy of pronunciation. The question of whether Japanese students learning English as a Foreign Language (EFL) at the university level have the phonological competence to succeed in such repairs is the focus of this study.

In the ongoing discussion and debate among theorists and practitioners over the relative importance of the various fields of linguistic study and the nature of their interrelationships, aspects of phonetics and phonology have gone from a position of primacy under the influence of the Audiolingual and Oral approaches in the mid-twentieth century, to a much de-emphasized level of importance under the dominance of more recent varieties of the Communicative Approach. In spite of the widespread acceptance of communicative methods, as of this writing there is little clear consensus on what role, if any, pronunciation instruction should play in the communicative classroom.



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In Japan, EFL instruction is increasingly dependent on the representation of English pronunciation via the Japanese system of syllabic writing, or syllabary, known as *katakana* (see Appendix A for a brief overview of this system). Designed to represent sounds or phonological features of the Japanese language, this system is often ill-suited or inadequate to the task of representing English phones. Consequently, English words are often rendered in Japanese approximations of the actual pronunciation. Thus, *alphabet* becomes *arufabetto*, *elevator* becomes *erebeta*, *dilemma* becomes *jirenma*, etc. Even more problematic, because *katakana* has only five basic vowel sounds and significantly fewer consonants than English, several distinct English words are likely to be pronounced as homophones or near-homophones using *katakana* phonology. For example, the English words *cold*, *called*, *code*, and *cord* are all pronounced *kōdō* using *katakana* phonology.

The use of *katakana* to teach English pronunciation is a long-standing practice and has become increasingly popular in recent years. It is common for textbooks approved by the Ministry of Education, Science, Sports and Culture to explain the pronunciation of English words using *katakana* characters. Major publishers of educational materials such as Shueisha, Kenkyusha, Kodansha and others publish texts and dictionaries which utilize this Japanese syllabary to explain the pronunciation of English words. *Katakana*, as an instructional resource, is seen as a welcome and more accessible alternative to the International Phonetic Alphabet (IPA) which had been a staple of English instruction in previous decades (Mizui, 2001).

For the purposes of the Japanese educational system, the use of *katakana* proves little or no obstacle. Grammar translation continues to be the most prevalent method of language teaching in the nation and is well suited to the goal of preparing students for university entrance exams in their current form. Since English is rarely, if ever, needed for real communication, the matter of phonological competence is unlikely to arise during a student's middle school or high school experience. In addition, students are continually exposed to vast numbers of English loan words in everyday speech and the mass media. These are either rendered in *katakana* or in the Roman alphabet and spoken using a *katakana* pronunciation. These words are an integral part of normal communication occurring in technical language, colloquial speech, popular music,



advertising and every conceivable facet of popular culture. Thus, by the time a student enters university or college, exposure to spoken English for practical purposes, that is, for academic pursuits and daily communication, has been almost exclusively in the form of the Japanese phonetic system. The phonetic system of one language has effectively supplanted that of another, with the acquiescence and approval of all concerned.

Indeed, there is no reason why this situation should be questioned, since it is not in conflict with the purposes of students, educators or policy makers. *Katakana* English serves quite well for the purposes of grammar translation, entrance exams and day-to-day life among native speakers of Japanese and is largely legitimized by its cultural and educational role. This is not to suggest that Japanese EFL learners have no exposure to native or native-like English pronunciation. Rather, it is the *katakana* forms which are dominant and certainly the path of least resistance for the average learner.

The obvious pitfall in this situation is that, when *katakana* pronunciation is used in real-life exchanges, communication failure may result. Interlocutors are then called upon to make their output (pronunciation) more precise in order to affect repair. They must call upon their phonological *competence* to make up for shortcomings in *performance*. This can be a positive learning experience, provided the learner has the competence to undertake the necessary repair.

The purpose of this study is to determine to whether this alternative and parallel phonetic system (*katakana*) has become fossilized or stabilized in the participant group to an extent which interferes with production and recognition of intelligible English pronunciation. This determination will be made by addressing the following questions:

1. Are the Japanese native speaker (JNS) participants able to recognize English target words, spoken by a native speaker, from among a group of English words which would be represented as homophones or near-homophones in *katakana*?
2. Are English native speaker (ENS) participants able to recognize and distinguish the same English words spoken by a Japanese native speaker?

This purpose is significant in that it deals with important learner variables, i.e., characteristics of specifically defined learner populations, factors which might affect their success in L2 and what instructional and diagnostic methods might best meet their needs. Moreover, it addresses the relationship between the development of first language



(L1) and L2 oral and literacy skills and the extent to which learning in one language transfers to a second and what form such a transfer might take. Perhaps most importantly, it concerns questions of differential rates of success among groups from different linguistic and cultural backgrounds in L2 study (TESOL Association, 2000). At a fundamental level, it addresses the issues of whether L2 pronunciation can or should be taught, and what happens when it is not. Hopefully, this study will constitute a modest step toward a clearer understanding of Japanese learners' interlanguage phonology, possibly leading to new methods of teaching pronunciation and helping students to understand spoken English.

My interest in this area of research has developed over a period of years as I have noticed and recorded instances of communication failure due to either lack of phonological competence alone or a discordance between some combination of phonological, contextual, grammatical and lexical clues. This evidence is, of necessity, anecdotal, inasmuch as no one has yet succeeded in recreating the myriad permutations of such discordance in a controlled, experimental setting. Nonetheless, it is extensive. A representative sample of cases I have collected over a period of years is provided here:

- (1) A native English speaker is watching a Discovery Channel documentary on the history of Italian sports cars and calls out to his Japanese girlfriend in the kitchen, "Look at this! These cars are amazing! I'd give anything to drive one!" To which the girlfriend responds with a one-syllable ethnic slur used for people of Italian ancestry, "Wop!"

"What did you say?" asks the English speaker.

The Japanese girlfriend repeats the original epithet, cheerfully.

Aghast, and convinced he is witnessing a shocking display of racial/ethnic insensitivity, the native speaker launches into a long-winded and patronizing homily on how culturally inappropriate it is in *American* culture to make disparaging references to ethnic origin. The girlfriend appears confused, then frustrated, then irritated. The American hesitates, sensing he's about to get a lecture himself.

"No! Wop! Wop speedo! The car is very fast! Wop!" at which time the American realizes she's saying "warp" as in *Star Trek's* warp speed, not hurling ethnic slurs at Italians (*wop* and *warp* are homophones in *katakana* pronunciation). The truly



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unfortunate thing is that she thought the expression was culturally appropriate and *au courant* and could not understand where she had gone wrong. The L2 learner was unable to improve accuracy because there was no knowledge of the existence of a target form and no native English phonological template to apply. In this context, native speech is the variant.

- (2) An advanced-level TOEFL student, a professional woman who works at a major Tokyo bank, and her instructor, an American male, are talking after class. They have known each other many years and have often discussed the long, difficult hours of the student's job. At one time they also belonged to the same chain of fitness clubs and often discussed exercise and trying to stay healthy in the hectic pace of Tokyo life.

Student: "I'm sorry I was late for class but I overslept. I've started distance running at Hosei University."

Instructor: "That's great, but with your schedule, how do you find the time for distance running? You must be exhausted!"

Student: "Yes, I am. And I'm doing rows!"

Instructor: "Rows!...Rows? Well, rows are good exercise too, especially if you don't have time for running."

Student: "Yes, but it's so difficult!"

Instructor: "You know, you need to take it easy. You work so hard, why are you doing this suddenly?"

(Note that at this point, the interlocutors are blithely chatting along on two completely unrelated topics, unbeknownst to either of them.)

Student: "I need it for my work. I want to change departments."

Instructor: "You need distance running for your work?" (Finally, a clue that something is wrong.)

Student: "Yes, I'm doing it on-line."

Instructor (Not letting on that he's misunderstood): "Oh, you're doing it on-line! Distance learning! (*raningu* in *katakana*) And you're doing laws! (*rows* in *katakana*)



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Uh, we just say ‘law’ because it’s uncountable. But anyway, I hope it’s interesting!
Bravo! And good luck!”

(3) The following was related to me by an ENS employee of a large Tokyo-based construction company regarding the pronunciation of *want* and *won’t* (homophones in *katakana*):

ENS: “So, I guess we’ll have to schedule you on another day. Would Thursday or Friday be all right for you?”

JNS: “I won’t Thursday.”

ENS: “Very well, how about some time on Friday?”

JNS: “I won’t Thursday.”

ENS: (exasperated) “I *understand* that. We have several times open on Friday. Would you like morning or afternoon?”

JNS: (getting impatient) “No! I said I won’t Thursday! Please listen to me!”

ENS: “I *am* listening to you and if *you* would listen to *me* I told you I can take you on Friday!”

JNS: (really angry) “What is wrong with you! I can’t come on Friday! I said I won’t Thursday!”

At this point, the sun begins to break through the clouds in the eye of this hurricane and the ENS realizes that what he thought was a lexical or grammatical error was actually a phonological error and comprehension dawns.

These real-life communication failures go well beyond the minor annoyances of “rice” vs. “lice” errors commonly and understandably dismissed by educators as insignificant. They illustrate that L2 learners are often unaware that miscommunication may have a phonological basis and are unaccustomed to apply self-monitoring skills in that aspect of language. Further, they are examples of problems in recognition of L2 phones as well as production.

Literature Review

Phonological Competence

Pronunciation was once the starting point for language study. In the early years of the



twentieth century, the development of phonetics as a distinct area of study led to its pedagogical applications via the IPA as well as the primacy of spoken language and phonetic training for teachers and students alike. In the 1940s, 1950s and early 1960s pronunciation was emphasized from the earliest stages of the Oral Approach, Direct Method and Audiolingual curricula and their applications of Skinnerian/Bloomfeldian interpretations of language as habit formation.

Major changes of focus began to occur in the mid-1960s due to the impact of transformational-generative grammar theory (Chomsky, 1957, 1965) and analyses of language as rule-governed behavior. These changes were characterized by a de-emphasis of phonetics, phonology, pronunciation and other bottom-up aspects of language. With the notable exception of *The Silent Way* (Gattegno, 1972, 1976), pedagogical approaches to foreign and second language teaching tended to relegate phonology to much-diminished roles from the 1970s onward.

Concurrent with the gradual ascendance of communicative approaches in recent decades, much of the literature has tended to dismiss, depreciate or ignore explicit instruction of L2 phonology or discuss it in terms of how much could be left out of the curriculum. Indeed, many of the most prominent authors on communicative teaching such as Hymes, Widdowson and Candlin made little or no mention of phonetics and phonology in their work. Brown and Yule (1983) focused their discussion of pronunciation teaching in the classroom on “native-like” or Received Pronunciation (RP) production and maintained that “...many teachers now accept that the aim of achieving native-like pronunciation is not only unattainable but unreasonable...” (p.26). They also characterized a strong emphasis on pronunciation as “boring” to less competent students in particular.

Krashen and Terrell (1983) felt that classroom work had little to do with pronunciation ability, even when the courses were specifically aimed at pronunciation. Since formal teaching had such little effect in this area they posited that the best approach was simply to “...provide an atmosphere where the acquisition of phonology could take place...” (p. 90). No explanation of what the form or nature of such an atmosphere might be was provided.

In contrast, other authors and researchers have asserted that attention to



phonology and communicative methods, far from being mutually exclusive, are in fact complementary. Celce-Murcia et al. (1996) suggest that the concept of language as communication brings urgency to the teaching of pronunciation. They point out that if nonnative speakers fall below a *threshold level* of pronunciation that they will have communication difficulties regardless of their abilities in grammar and vocabulary.

Nunan (1991) enumerated skills which he determined essential to learners if they were to become successful users of a language. He described the skill of "...segmenting the stream of speech into meaningful words and phrases..." and "...the ability to articulate phonological features of the language comprehensibly..." (p.6-7). He also emphasized the necessity for top-down *and* bottom-up learning strategies, including the processing of phonemes (p.4). Nonetheless, his subsequent discussion omits the question of segmentals, focusing instead on stress and rhythm.

This is a common theme in more recent literature, i.e., that classroom instruction should focus on intonation, stress and rhythm rather than the teaching of phonemes and allophones. The distinction and emphasis are often rendered in highly subjective terms. Brown (2001) describes stress, rhythm and pronunciation as the most "relevant" features of pronunciation (p.283). His view echoes that of Wong (1987) who argues that "...because of their major roles in communication, rhythm and intonation merit greater priority in the teaching program than attention to individual sounds" (p.21).

There is a competing viewpoint to this emphasis on suprasegmental features which recognizes the importance of both segmentals and suprasegmentals. Authors such as Kenworthy (1987), Kelly (2000) and Celce-Murcia et al. (1996) have stressed the importance of a balanced approach to the teaching of phonological aspects of language, integrating segmental and suprasegmental features.

Interlanguage

If we discuss L2 learner phonological competence, it must be acknowledged that we are discussing their interlanguage and the possible effects of interlanguage processes such as language transfer, over-generalization and fossilization, or the degree to which incorrect features become permanent parts of learner language (Selinker, 1969, 1972). Most of the extensive literature on interlanguage deals with grammatical and socio-linguistic issues and are beyond the scope of this study. However, since phonology is an area where



errors are most likely to be interlingual rather than developmental (Beebe, Takahashi, & Uliss-Weitz, 1990), it is important to mention some representative literature.

In the 1980s, Ioup and Weinberger (1987) collected and published several significant studies which focused on interlanguage phonology. Among these, Tarone (1987) challenged the prevailing notion among researchers and educators that pronunciation was simply not important. She made the point that it was possible for learners to master L2 syntax but not phonology and that it was essential that learners be able to produce intelligible speech. It was also pointed out that this area of study has the potential to increase our understanding of speech perception.

Nearly a decade earlier, Beebe (1978) made the point that pronunciation always affects what we communicate and how well we communicate it and should therefore be part of L2 teaching for all levels. In a later work, however, Beebe (1987) asserted that a concentration on phonemic contrasts (the focus of this project) was ill-founded when aimed at non-beginners. This assertion was based on data she collected indicating that most pronunciation errors do not involve phonemic substitution or confusion. Rather, they involve phonetic approximation or overgeneralization of a target sound. The same study also found that in a large numbers of cases, pronunciation errors do not involve transfer of a native language (NL) variant. Many of such variants are “original” in that they cannot be found in either the NL or target language (TL).

Since this study concerns the reading of word lists it is important to address the question of style and its relation to interlanguage although it is difficult to extract the issue of phonological style from grammatical. Labov (1966) first described a range of speech styles for native speakers based on the central factor of attention to speech. In order of increased attention, these were *casual style*, *careful style*, *reading style*, *word list style* and *minimal pair style*. For second or foreign language learners, Tarone (1983) posited a continuum of style with *careful style* at one end and *vernacular style* at the other, suggesting that the highest degree of accuracy would occur in when reading lists of words. It is this accuracy and increased attention which I hope to elicit in this study.

The Study

It is important to point out that this is not an exercise in contrastive analysis in that no



attempt to predict behavior or develop prediction methods will be undertaken. Nor is it intended as a type of error analysis. The intent is not to classify errors or make retrospective comparisons between what has been taught and what is being produced. Further, any such errors will probably be much too diverse and numerous to analyze effectively within the constraints of this study. Rather, this study will be an examination of a strictly circumscribed aspect of the learners' interlanguage: their phonological competence. The purpose is diagnostic, not predictive or summative. It is intended to determine the accuracy with which the L2 learners in the participant group are able to produce and discern English phones with which the *katakana* syllabary system would not acquaint them, i.e., English phones which do not exist in Japanese. Once again, it is important to note that *katakana* is not the *only* form of English pronunciation to which these learners have been exposed. However, the realities of the learners' cultural and educational environment lead to the assumption that it is the *dominant* form of English pronunciation within their linguistic frame of reference.

Also, it should be mentioned that although there is a widely recognized value in collecting data on spontaneous speech performance, this study has a different objective. The assumption here is that once communication failure occurs, spontaneity is lost, and the issue becomes one of accuracy and attention to form. For this reason, conditions in this research were arranged to provide for the maximum accuracy of which the participants were capable.

This study was divided into two parts. In the first, the purpose was to determine whether Japanese learners could distinguish and differentiate English phones produced by a native English speaker. In the second part of the study, the purpose was to determine whether native speakers of English could distinguish or differentiate the same English phones produced by native Japanese speakers.

Part 1

For the first part of the study, I composed a list of 20 English word groups which would be represented as homophones or near-homophones in *katakana*, hereinafter referred to for the purposes of this study as *minimal groups*. For example, *cold*, *called*, *cord* and



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code (mentioned earlier) would all be homophones in *katakana* and make up 1 minimal group. *Load*, *lord*, and *road* would be *katakana* homophones, while *lowered* (rendered as *rō-ah-dō* in *katakana*) would be a near-homophone of the same group. The words were of 1 or 2 syllables and there were 4 to 5 words in each group, determined by how many homophones exist in the minimal group. From this list, I made a multiple choice answer sheet of 20 minimal groups and chose a single word from each group to be read by the speaker.

Participants (Japanese listeners, English NS reader)

The participants were my first and second year Japanese university students from 3 universities: Kogakuin University (an engineering school), Nihon University College of Arts, and the Tokyo Women's College of Physical Education (TWCPE). None of the participants had received any explicit instruction in English phonology from me up to this point, but all were familiar with my voice, diction, intonation and accent (North American, Western New York State), having studied with me for several months prior to the study.

Procedure

Answer sheets were distributed and the exercise was explained. Each answer sheet included an explanation that the exercise was intended to illustrate some problems with English pronunciation and that it might also be used in research. There was a place where participants could indicate whether they had ever lived for an extended period in an English speaking country by circling yes or no. Answer sheets with affirmative responses were later deleted since the purpose was, as much as possible, to collect data on EFL rather than ESL learners.

The students were given a few moments to look over the answer sheet and I tried to be certain that everyone understood the procedure by modeling a sample item on the board. They were told to circle the word from each minimal group which they believed I was saying and to make their best guess if they were unsure. I then read the 20 words, repeating each word twice at a speed of approximately 1 word every 5-7 seconds. While



reading, I made an effort to move around the room and make my mouth visible to as many students as possible for those who were trying to determine place and manner of articulation. When the exercise was completed, I collected the answers sheets. It should be emphasized that this was not an attempt to replicate real-life conditions, but rather to access the students' actual competence by producing *optimal* conditions for recognition within the limits of the experimental setting.

Since I have a very large number of students, this part of the research produced an unmanageable amount of data. I therefore randomly drew 35 answer sheets from both Kogakuin and Nihon University and 30 from TWCPPE for a total of 100 responses.

Part 2

Participants (Japanese readers)

For the second part of the study I needed a representative sample of native Japanese speakers to act as readers. For this purpose, immediately after the first exercise I asked for volunteers from my Kogakuin classes (using chocolate bars as an incentive), resulting in 5 readers from each of 4 classes. I explained that they would be recorded on digital video tape, which produced a certain amount of apprehension, but the students seemed to get into the spirit of the activity and their participation was characterized by considerable effort and a positive attitude. The use of volunteers was, once again, an attempt to produce the optimal conditions for production. I felt that volunteers would be more likely to exert the necessary effort and concentration to demonstrate actual competence than randomly selected participants.

Procedure

The student volunteers were taken to a free classroom, given copies of the word list and allowed to look it over for a few moments. I explained that each student would read only 4 of the 20 words and that each word should be repeated twice. I made every effort to lighten the atmosphere and reduce pressure but there was, of course, a certain nervousness knowing that they would be video-taped and heard by their fellow students.



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It should be noted that many of the above conditions were intended to contribute to attention to form and accuracy. First, the student reading occurred *after* my native speaker reading of the same word list, giving the Japanese readers some foreknowledge of the content and procedure. Second, the students would be reading words they had already heard in a manner which had been modeled for them by a native speaker. Also, these readers were given time to read over the word lists, familiarize themselves with the content and mentally prepare for the task. Finally, each student's participation was kept brief (4 words) to minimize the effect of fatigue on their speech. The results were as near to the readers' optimal speech performance for the target words as could possibly be expected in any setting, experimental or otherwise.

For the next phase of the study I was faced with making a subjective judgment as to which group would be most suitable. I chose a group from the third period class consisting of 2 male and 3 female students since it was the only mixed-gender group I had recorded (the student body at Kogakuin is predominantly male). I felt the advantages of a mixed-gender group outweighed the value of random selection in this case.

I dubbed the Japanese reader video onto several VHS cassettes. The audio quality was quite good, far superior to an audio-tape I had made at the same time as the video. Apparently, the microphone on the digital camcorder was able to alleviate the poor acoustics of the classroom we had used. Voices on the video were clear and largely free of distortions or echoes. There was a clear and unobstructed view of each student's mouth as they read the words.

Participants (English NS listeners)

In addition to my own data collection efforts, I distributed the videos and answer sheets to several English native-speaker (ENS) contacts in Japan and sent copies to friends in the U.S. In spite of the gracious assistance of my Teachers College (TC) instructor, numerous TC students and several colleagues, I was only able to obtain 23 answer sheets from residents of Japan who are native English speakers. I obtained 31 responses from U.S. residents. There appear to be significant differences between the results from



the U.S. residents and Japan residents, so I have tabulated the data separately (see Tables 2 and 3).

Results

The most salient feature of the data collected in Part 1 of this study (Japanese listeners, ENS reader) is certainly the sheer number of incorrect responses. As shown in Table 1, the mean score was 9.44 correct responses out of 20, with a standard deviation of 2.59. If a correction for guessing formula is applied (Henning, 1987, p. 31), this score would be reduced to an average of 5.92 correct responses out of 20. The fact that the L2 learners were able to discern words spoken by the ENS in less than half the cases (or less than a third, corrected for guessing) is enough to indicate a considerable phonological deficiency.

Table 1

Error totals: English NS reader, Japanese listeners, 100 participants.

Correct answer	Error	Error	Error	Error	Error/percent
1. cot	caught(16)	coat (28)	court (19)		62
2. sin	thin (37)	shin (23)	seen (7)		67
3. cone	corn (43)	con (10)	colon (1)		54
4. birth	verse (3)	bath (2)	bus (1)		6
5. ramp	lamp (25)	romp (0)	rump (22)	lump (18)	65
6. road	load (19)	lord (16)	lowered (2)	rod (1)	38
7. called	cold (28)	code (24)	cod (1)	cord (17)	70
8. very	valley (3)	berry (16)	belly (2)		21
9. lobe	love (3)	robe (47)	lob (12)		62
10. pole	Paul (51)	par (0)	pore (11)		62
11. fall	hole (6)	foal (17)	hall (3)		26
12. done	Dan (32)	Don (8)	dawn (1)		41
13. bolt	volt (18)	boat (17)	vote (16)	bought (32)	83
14. want	won't (36)	warrant (0)	weren't (18)		54
15. who'll	fool (44)	wool (12)	full (17)		73
16. phone	horn (2)	fawn (5)	hone (3)		10
17. arks	axe (5)	oaks (14)	ox (27)		46
18. feet	fit (28)	hit (0)	heat (4)		32
19. rolls	laws (22)	rows (34)	lows (43)		99
20. backs	bucks (18)	barks (8)	box (12)		38

Note. Since there were 100 participants, figures in Table 1 represent both raw scores and percentages.

Another significant feature is the variety of incorrect responses. The word *cot*,



for example, in Table 1 item 1, elicited a nearly even dispersal of responses among the choices *caught*, *coat*, and *court* indicating that a medial /a/ sound is an unknown quantity in these listeners' (JNS) phonological construct. The word *sin* in item 2 produced large numbers of both *thin* and *shin* responses even though the manner and place of articulation are different for both initial consonants. Similarly, JNS listeners apparently were unable to distinguish between initial /b/ and /v/ consonants in item 13 (*bolt*), although the same consonants in medial positions posed little problem in item 9 (*lobe*). Also, as one would expect, the much discussed and analyzed problems with /l/ and /r/ appeared in this study. Perhaps the most striking aspect of this problem is that in addition to the problems producing these sounds, initial /r/ sounds are often heard or interpreted as /l/, or vice versa, even though the /l/ sound does not exist in the Japanese phonetic system.

If one compares these results to those obtained by Beebe (1987) which showed that most pronunciation errors do not involve confusion of two phonemes, we find clear indications that many listening errors do. Beebe also showed that pronunciation errors often do not involve transfer of a native language variant. However, in these results, e.g., Table 1 items 1 (*cot*), 3 (*cone*), 8 (*very*), 10 (*pole*), we see what may be an interpretation of L2 sounds as native language variants: 1. /ʍ/ interpreted as /ow/, 3. /owɾ/ equated with /ow/, 8. /v/ heard as /b/, 10. /j/ equated with /ow/. In short, phonological competence is as much about recognition of L2 phones as it is about production.

The results from the ENS (Japan residents) listener study showed an even lower rate of comprehension than in the JNS listener study. This group had an average of 8.34 correct responses and a standard deviation of 1.72. Corrected for guessing, less than a quarter of the responses were correct (3.88 out of 20), which indicates that even with maximum attention to form, the JNS learner-speakers are having significant difficulty in producing intelligible speech (see Table 2).



Table 2

Error totals: Japanese NS readers, English NS listeners (Japan residents), 23 participants.

Correct answer	Error	Error	Error	Error	Error/percent
1. cot	caught (14)	coat (5)	court (1)		20 / 87%
2. sin	thin (19)	shin (1)	seen (0)		20 / 87%
3. cone	corn (13)	con (0)	colon (3)		16 / 70%
4. birth	verse (1)	bath (6)	bus (0)		7 / 30%
5. ramp	lamp (19)	romp (0)	rump (1)	lump (1)	21 / 91%
6. road	load (15)	lord (0)	lowered (0)	rod (0)	15 / 65%
7. called	cold (13)	code (0)	cod (0)	cord (1)	14 / 61%
8. very	valley (0)	berry (13)	belly (8)		21 / 91%
9. lobe	love (5)	robe (8)	lob(6)		19 / 83%
10. pole	Paul (13)	par (0)	pore (2)		15 / 65%
11. fall	hole (2)	foal (0)	hall (0)		2 / 9%
12. done	Dan (7)	Don (4)	dawn (3)		14 / 61%
13. bolt	volt (4)	boat (1)	vote (2)	bought (3)	10 / 43%
14. want	won't (4)	warrant (0)	weren't (0)		4 / 17%
15. who'll	fool (8)	wool (0)	full (5)		13 / 57%
16. phone	horn (0)	fawn (5)	hone (0)		5 / 22%
17. arks	axe (12)	oaks (1)	ox (5)		18 / 78%
18. feet	fit (0)	hit (0)	heat (1)		1 / 4%
19. rolls	laws (4)	rows (7)	lows (3)		15 / 65%
20. backs	bucks (3)	barks (6)	box (4)		13 / 57%

Note. Error percentages in the far right column have been rounded to the nearest whole number.

Once again, we can see parallels to Beebe's 1987 study. If we look at Table 2 items 1-3 (*cot*, *sin*, *cone*), 5 (*ramp*), 10 (*pole*) and 17 (*arks*), it appears that the students are producing approximants, or overgeneralized sounds, or perhaps they are simply being interpreted as such since /q/, /ɚ/, /æ/ and /j/ do not exist in Japanese and the listeners were told to choose the word which they thought the speaker was trying to say. Items 8 and 15 (*very* and *who'll*) show signs of native language transfer in that the English phone /v/ is being changed to a more manageable /b/ sound and /huw/, which does not exist in Japanese, is being changed to the Japanese syllable /fuw/.

One would expect that long-time residents of Japan (over 5 years, in this case) would have a better "ear" for Japanese pronunciation and be better able to determine what word the Japanese native speakers were trying to say. If one looks at Table 3, and the overall scores for U.S. resident ENS (average 6.64 correct, 2.19 corrected for



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guessing, standard deviation 1.790), this certainly seems to be the case in that their scores are significantly lower than those of the Japan resident ENS (8.34, 3.88, 1.72, respectively). However, there are certain intriguing anomalies. On Table 3 items 1 (*cot*), 2 (*sin*), 10 (*pole*), 13 (*bolt*), 14 (*want*), and 15 (*who'll*) the U.S. residents, who, it is assumed, do not have regular contact with Japanese pronunciation, made fewer errors than their native speaker counterparts who were residents of Japan. The difference is particularly striking in items 9 (*lobe*), 14 (*want*) and 15 (*who'll*). I find this result baffling and perhaps an interesting avenue for further research. Are expatriates mentally projecting an anticipated pronunciation error which is not actually occurring?

Notwithstanding any attempts to reduce the incalculable variables of human performance to some form of statistical certainty, it is readily apparent that the L2 learners in this study have little or no working knowledge of English phonology, at least at the segmental level.



Table 3

Error totals: Japanese NS readers, English NS listeners (U.S. residents), 31 participants.

Correct answer	Error	Error	Error	Error	Error/percent
1. cot	caught(8)	coat (5)	court (13)		26 / 83%
2. sin	thin (7)	shin (0)	seen (16)		23 / 74%
3. cone	corn (14)	con (5)	colon (4)		23 / 74%
4. birth	verse (0)	bath (25)	bus (3)		28 / 90%
5. ramp	lamp (25)	romp (2)	rump (0)	lump (4)	31 / 100%
6. road	load (18)	lord (7)	lowered (2)	rod (0)	27 / 87%
7. called	cold (22)	code (5)	cod (0)	cord (3)	30 / 97%
8. very	valley (0)	berry (10)	belly (19)		29 / 94%
9. lobe	love (2)	robe (10)	lob (2)		14 / 45%
10. pole	Paul (11)	par (0)	pore (8)		19 / 61%
11. fall	hole (4)	foal (8)	hall (2)		14 / 45%
12. done	Dan (7)	Don (6)	dawn (6)		19 / 61%
13. bolt	volt (0)	boat (5)	vote (1)	bought (4)	10 / 32%
14. want	won't (0)	warrant (0)	weren't (0)		0 / 0%
15. who'll	fool (3)	wool (4)	full (4)		11 / 35%
16. phone	horn (2)	fawn (12)	hone (0)		14 / 45%
17. arks	axe (7)	oaks (1)	ox (22)		30 / 97%
18. feet	fit (3)	hit (0)	heat (0)		2 / 6%
19. rolls	laws (7)	rows (4)	lows (14)		25 / 81%
20. backs	bucks (4)	barks (7)	box (14)		25 / 81%

Note. Error percentages in the far right column have been rounded to the nearest whole number.

Discussion

Over the course of the last 3-4 years, as I've gradually selected material for this study and discussed it with my colleagues, instructors and other people in the field, I have received two distinct types of responses. One group of people views this issue from essentially the same position as I do, i.e., that Japanese learners are being hindered in



both intelligibility and listening comprehension by their lack of phonological competence and that some type of remedial approach would be beneficial, if some consensus could be reached on its necessity and value.

A somewhat larger group has responded negatively and often indignantly, the most common remark being something comparable to “What’s the point? They can get the meaning from context!” One respondent wrote at the bottom of the answer sheet for this study, “These poor students! I feel so sorry for them! What’s the point of this?”

At this point I feel it is appropriate to mention that I am a product of the Audiolingual Method. In 1963, our school district, in a post-Sputnik furor over educational standards, introduced French language instruction into our 4th grade class. A part time instructor met with us 3 times a week for roughly 40 minutes. We began, of course, with the phonetic system and its orthographic representation.

Some 25 years later I began my study of Arabic in a similar fashion, by learning the sounds and how they were represented in the written language. I confess that in spite of all I have learned about modern approaches to language teaching, I have never felt handicapped by studying the phonology of these target languages; quite the opposite, in fact.

No scholar would suggest that a language student could proceed in a study of any Sino-Tibetan language without a solid foundation in the tonal system. Nor would anyone propose that Arabic or Modern Hebrew could be learned without some explicit instruction in the pharyngeal fricatives common to those languages. Nonetheless, as pointed out earlier in this paper, many prominent theorists and practitioners have either down-played the importance of English phonology, assumed that it could be “acquired naturally” or ignored the topic altogether. Some ENS residents of Japan have suggested to me that it’s clear that L2 phones can be acquired without explicit instruction, because they had so little difficulty learning Japanese pronunciation, overlooking the vast number of English phones which do not exist in Japanese. Whether this is some extreme form of academic denial or simply linguistic ethnocentrism is impossible to determine, but the sheer pertinacity of this viewpoint is awesome to behold. Whatever the reason, it is important to recognize that knowledge of nonnative phonology cannot simply be “picked up” or acquired by second language learners without some type of pedagogical



support. Indeed, research in developmental psychology is demonstrating that we lose our ability to even perceive, much less acquire, non-native phones *in infancy* (Werker & Vouloumanos, 2001).

This study makes clear that our students, after six or seven years of English language study, are having serious difficulty pronouncing and perceiving the sounds of everyday spoken English. Even if one chooses to set aside or avoid the controversy surrounding the importance of pronunciation, we are left with the daunting challenge of helping our students to improve their perception and comprehension of the spoken language. Few EFL educators would argue against this objective.

Which leads us to important areas for further study: How can the perception of nonnative phones be evaluated, analyzed and improved? Which phones, and in what combinations, are the most problematic? What type of classroom work is effective in improving phonological competence and everyday performance?

Conclusion

If this project has a political message, I would hope it to be that languages are holistic systems rather than hierarchical. Contextual features of language are not superior to others and certainly no panacea to understanding. Comprehension comes about by drawing on all of our linguistic resources and where one area is found wanting, often another must be called on to compensate. We employ circumlocution to make up for lexical shortcomings. We simplify grammar to avoid ambiguity. We change registers to adapt to the socio-cultural milieu. But to employ these strategies, we must first be aware that problems, or potential problems, exist. This study suggests that, in terms of making students familiar with possible phonological pitfalls and ways to overcome them, current EFL approaches in Japan are coming up short.

As educators, one of our objectives should be to show the ways in which aspects of language interact and complement each other. Language learners, whatever their level of proficiency, need to recognize the complex interplay and balance of lexicon, grammar, discourse, culture and phonology to become effective self-monitors. Our first task in helping our students is to be certain we appreciate this balance ourselves.



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Appendix A

A brief overview of the Katakana syllabary

The kana (characters) and their Roman character counterparts

A ア	ka カ	sa サ	ta タ	na ナ	ha ハ	ma マ	ya ヤ	ra ラ	wa ワ
i イ	ki キ	si シ	chi チ	ni ニ	hi ヒ	me ミ	(yi) ヰ	ri リ	wo ヲ
u ウ	ku ク	su ス	tsu ツ	nu ヌ	hu フ	mu ム	yu ユ	ru ル	n ン
e エ	ke ケ	se セ	te テ	ne ネ	he ヘ	me メ	(ye) ヱ	re レ	
o オ	ko コ	so ソ	to ト	no ノ	ho ホ	mo モ	yo ヨ	ro ロ	

The above chart should be read top-to-bottom, left-to-right as follows: a (ah), i (ee), u (ōō), e (eh), o (oh); ka, ki, ku, ke, ko, sa, shi, su, se, so, ta, chi, tsu, te, to; na, ni, nu, ne, no; ha, he, fu, he, ho; ma, me, mu, me, mo; ya, (yi), yu, (ye), yo; ra, ri, ru, re, ro; wa, wo, n.

Note: (yi) and (ye) are now considered archaic and are generally replaced with ‘i’ or ‘e’ *kanas* respectively.

Special symbols and diacritics:

◦ changes ‘h’ and ‘f’ *kanas* to ‘p’ *kanas*

— lengthens preceding vowel

ツ doubles following consonant

゛ changes: ‘h’ and ‘f’ *kanas* to ‘b’ *kanas*; ‘k’ *kanas* to ‘g’ *kanas*; ‘t’ *kanas* to ‘d’ *kanas* (and



'*chi*' to '*ji*')

Kana Combinations

u plus small vowel = *wi, we, wo*

te plus small *i* = *ti*

fu plus small vowel = *fa, fi, fe, fo*

de plus small *i* = *di*

ni, shi, etc. plus small *yu* = *nyu, shyu, etc.*

de, fu plus small *yu* = *dyu, fyu*

ki, ji, etc. plus small *ya* = *kya, jya, etc.*

chi, shi, etc. plus small *yo* = *cho, sho, etc.*

chi, shi, etc. plus small *e* = *che, she, etc.*

tsu plus small *a* = *tsa*

