

# How can we assess intelligibility of English pronunciation more efficiently?

Kaya TAGUCHI

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## Abstract

This paper shows preliminary research analyses on English pronunciation data collected from Japanese college students. The purpose of the analyses is to find efficient ways to assess English pronunciation. Two English native speakers listened to 113 dialog readings by Japanese college students and rated them for the following three aspects: comprehensibility, accentedness, and fluency. This paper assumes that the third aspect, fluency, enables raters to assess pronunciation efficiently.

## Introduction

As a college teacher of English, it is quite stressful to see my students with solid English grammar and vocabulary give up learning English once they finish taking required English courses. They regard English as a subject to enter and graduate from school, not as a tool to communicate with people in different countries. In addition, they do not feel they can communicate effectively with the skills they learned in the eight years they have studied the language. One of the obstacles that prevent the learners from using the language in a real life is pronunciation. If they know how to pronounce English better, many of them would be motivated to continue learning the language further and to use the language as a tool for communication.

The ultimate goal of the current research is to find an effective way to teach English pronunciation at school to encourage students to continue to learn English and use it outside of the classroom. In this paper, I explore a method to evaluate students' pronunciation efficiently focusing on one aspect of speech, "fluency."

## Background of pronunciation teaching in Japan

There are many difficulties in learning a foreign language due to the differences between the learner's first language (L1) and the target language (L2) he/she aims to acquire. In the case of Japanese learners of English, one of the biggest or perhaps most emphasized difficulties is the grammatical differences between the two languages. Due to this fact, grammar is taught intensively in English classes in Japan, mainly because it is essential to learn it in order to pass entrance examinations for high schools and colleges. As a result, English language instruction is more grammar focused, while pronunciation is rather neglected in English teaching in Japan, although it is crucial to good communication.

One of the reasons for the lack of pronunciation teaching at Japanese schools is that learners do not find it important in order to get a high score on entrance examinations, most of which do not assess speaking. Learners tend to regard English as a tool for getting into a school they want to be admitted to, not as a tool for communicating with people around the world. Most of them, however, are eager to be able to use the language to express themselves and understand others. They are, unfortunately, discouraged by their inability to make use of the language when they encounter people who only speak English or who do not understand Japanese at all. Then they decide that their English is useless and have a great fear of using it. Such experiences and feelings are shared by many Japanese learners of English.

## What to focus on

Although pronunciation teaching is necessary in classrooms, it is impossible and ineffective to spend the whole class on it. It is essential to focus on such features of pronunciation that would enable learners to be intelligible. Considering that contrastive linguistics and phonologies have identified many different features between Japanese and English (e.g. Kenworthy), it would seem that such knowledge would lead to a better understanding of the sorts of features that cause pronunciation problems. Consequently, it may seem that teaching those features would make learners intelligible speakers. It turns out, however, not to be the case. Not only is it unrealistic to teach all the different phonological features between Japanese and English, but also it is inefficient because the differences are not equally important to make an utterance intelligible. It is widely believed that suprasegmentals, such as word stress, sentence stress, and intonation play more important roles in getting oral messages across than segmentals, such as consonants and vowels, although it does not mean that all the segmentals are unimportant and can be ignored. Instructors need to know which segmentals can be problematic. Striking a good balance between segmentals and suprasegmentals is preferable in pronunciation instruction.

## How to assess

Most of the published research on pronunciation teaching support the belief that it is generally rather more effective to focus on suprasegmentals than on segmentals as mentioned above. What motivated me to investigate pronunciation teaching is the lack of objective, reliable, and simple assessment in the research, in addition to the fact that most of the research (e.g. Derwing & Munro 1997, Derwing & Rossiter) was conducted in settings (diverse L1 learners in an ESL environment) different from mine (almost homogenous learners in an EFL environment). Moreover, the research is inconclusive with regards to effective ways of assessing pronunciation. Many of the assessment procedures seem quite cumbersome (e.g. Yoshida), and may result in rather unreliable results because the assessors may feel tired and may lose concentration, which could adversely affect the inter-rater reliability. Such conditions could make it difficult for raters to be fair throughout the assessment.

Taking the above into consideration, how should we assess pronunciation? Assuming that suprasegmentals are crucial to successful communication, focusing on the fluency of an utterance could be an effective method of assessing pronunciation because I believe fluent utterances should carry appropriate suprasegmental features.

Fluency refers to a vague concept and should be different from person to person. However, people would agree that a fluent utterance is one that is rhythmic and/or speedy. In order to be rhythmic, a speaker has to use correct word stress and sentence stress. In order to be speedy, a speaker has to reduce structure words, such as pronouns and prepositions, when they do not play an important role in the utterance. If the person who assesses pronunciation simply focuses on fluency, which entails speed and rhythm, he/she would be able to be fair and reliable in his/her assessment of students' pronunciation. Such an assessment will allow me to understand better if the pronunciation teaching was effective. In other words, a reliable assessment is essential to reach the ultimate goal of my research - to find effective ways to teach English pronunciation.

## Pronunciation assessment research

The following is an outline of the pronunciation assessment conducted in the summer of 2009, including the data collection and assessment specifics, followed by the data assessment analyses.

### Data collection

The data was collected in April and July 2009 at two English courses at a four-year college. The students read a dialog and recorded it on an IC recorder individually. Each lasted about two minutes. A total of 113 utterances were recorded.

## Data assessment

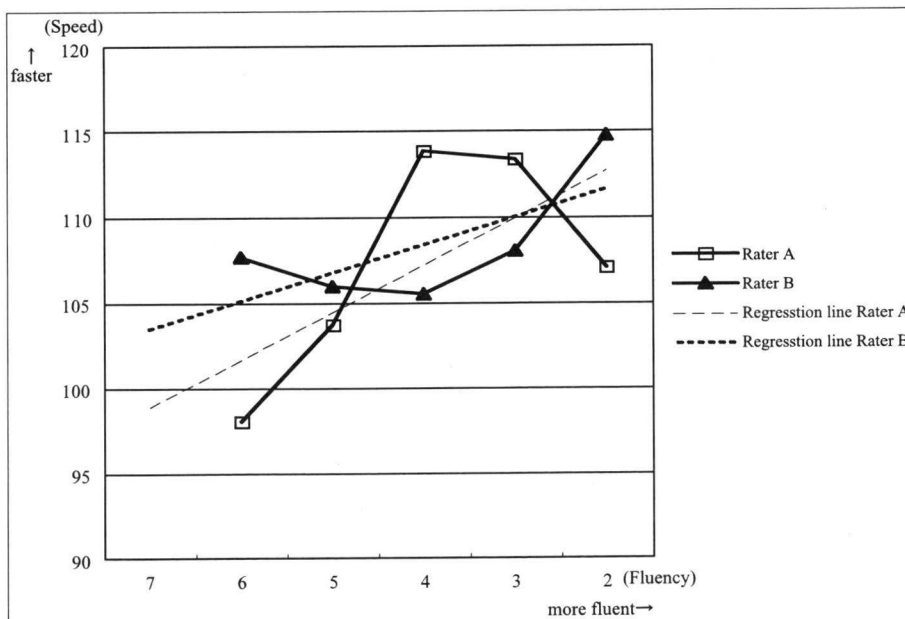
Two native speakers of English, who were experienced in teaching English to Japanese learners, assessed the data in August 2009. They listened to each utterance for the first sixty seconds, two times at maximum. They rated the utterances for the three measurements, “comprehensibility”, “accentedness” and “fluency”, which are the three aspects usually looked at in the published studies I mentioned above. This paper focuses on “fluency.”

Although it may be certain that fluency refers to both appropriate speed and rhythm, it is assumed that the assessors may also have taken other factors into consideration. In other words, raters may not have related “fluency” exclusively to speed and rhythm. Here in this paper, the assessment results show whether “fluency” really means speed. The factor of rhythm is to be investigated in an upcoming paper.

## Data analyses

The following graph shows a correlation between the “fluency” assessments by the two raters, Rater A and Rater B, and the actual speed of the utterance, the average number of words in a minute of groups of utterances rated as the same “fluency”. The “fluency” scale is on the X-axis and the speed in on the Y-axis. When an utterance is rated more fluent, a smaller number is assigned. Regression lines A and B show that the two factors, speed and “fluency” seem to be correlated. It can be said that the faster the utterance is, the higher the “fluency” rating may be.

Graph showing between the fluency rating and the speed



However, as the next table shows, a different reading can be made. For instance, the utterance rated “3” by Rater A was produced slower than many of the utterances that were rated less fluent. That means that even when an utterance was slower; it can be regarded as more fluent. The same thing is found with Rater B’s assessment. When Rater B rated it a “2”, the average number of words was slightly fewer than the utterances that were regarded as less fluent (rated “3”).

Table showing raw assessment data of 113 utterances

“Fluency”	Rater A		Rater B	
	Number of Utterances	Average number of words per minute	Number of Utterances	Average number of words per minute
1	0	N/A	0	N/A
2	0	N/A	27	113.7
3	1	107.0	29	114.8
4	14	113.4	23	108.0
5	64	113.8	20	105.5
6	30	103.7	9	105.9
7	4	98.0	5	107.6
8	0	N/A	0	N/A
9	0	N/A	0	N/A

This should mean that when the raters assessed, they paid attention not only to the speed per se, but to some other factors, which could be a key to better understanding what constitutes intelligible speech. There arises a question: “Can a single “fluency” measurement be used to assess pronunciation intelligibility reliably?” If so, it could serve as an efficient tool in pronunciation research.

### Future analyses

When one finds pronunciation intelligible, it may mean that the segmental features are native like, that the suprasegmentals are native like, that some segmentals and some suprasegmentals are native like, or that all pronunciation features are not native like, but they are somewhat intelligible. It is widely believed that learners of a foreign language do not have to aim at sounding like native speakers, partly because it is almost impossible. Moreover, having such a goal is not necessary because varieties of English are being accepted more and more. However, there has to be a threshold between intelligible and unintelligible utterances. As an English teacher who is teaching college English courses that take place only ninety minutes per week, it is essen-

tial to teach pronunciation efficiently by finding out what features are crucial and have to be intensively practiced, and how the teaching should be conducted, in order to make learners intelligible enough to manage English conversation.

To reach this goal, efficient and reliable assessment is necessary. Past studies seem to have failed to show concise ways of evaluating pronunciation as far as I know. Future studies need to seek efficient and reliable tools to reveal what kind of pronunciation is preferable to avoid communication breakdown. With such an objective in mind, several trials of several different assessments, including objective (i.e. speed) and subjective (i.e. “fluency”) evaluation have to be conducted.

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