

Self-assessment in Pronunciation Development

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Overview

- **Pronunciation Development**
 - Feedback
 - Self-assessment
- **Basic Approach**
- **Demonstrations**
- **Technical Details**

Feedback in Pronunciation Training

- Expert feedback
- Peer feedback
- Automatic feedback (Neri, Cucchiarini, and Strik, 2002)
 - Graphical (cf., Electronic Visual Feedback; Anderson-Hsieh, 1992)
 - Accuracy scores
 - Action performance

Self-Assessment in Pronunciation Training

- General effectiveness of self-assessment
 - Promotes student-centered learning
 - Encourages active learning
 - Increases insight into learning process
- Generally insufficient compared to expert feedback for pronunciation training (Dlaska and Krekeler, 2008)
- Learners cannot identify their own pronunciation problems without training (Dieling, 1992)

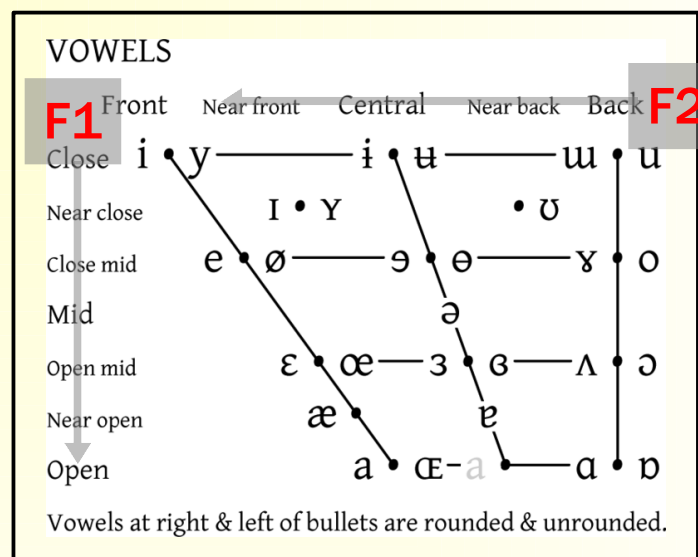
Basic Approach

- **Learners ...**
 - record their pronunciation.
 - look at graphical representations of their voice.
 - make various acoustic measurements.
 - draw conclusions about their pronunciation from the results.
- **Make learners into experts**

Example 1: Vowels

- Record a long text.
- Take several formant pair (F1, F2) measurements of each English vowel and calculate the averages.
- Plot them in a vowel space graph and compare the results to typical native speaker values.

Formant: Energy peaks in the frequency spectrum of a complex wave



Example 2: Epenthetic vowels

- Learners get sample recordings of native speech for words/phrases.
- Record the same words and phrases.
- Compare the consonant cluster locations and look for evidence of voiced or voiceless epenthetic (inserted) vowels.
 - acting → /akutiŋ/
 - Christmas → /kurisumasu/

Example 3: Rhythm and Stress

- Record a few sentences of a narrative or poem.
- Mark the text for prosodic stress (stress in content words only).
- Look at intensity contour.
 - Make sure timing between stresses is consistent.

Evaluation Target Ideas

- **Segments**
 - **Vowels**
 - Relative vowel placement in vowel space
 - Vowel duration before voiced/voiceless consonants
 - **Consonants**
 - Aspiration after stop consonants
- **Stress & Rhythm**
 - Stress timing (consistent)
 - Pace (number of stresses per minute)
- **Intonation**
 - Compared to target patterns (native, multilingual)

Self-assessment Tools

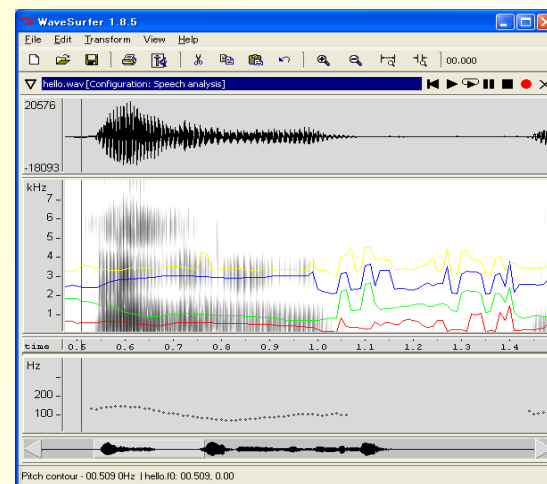
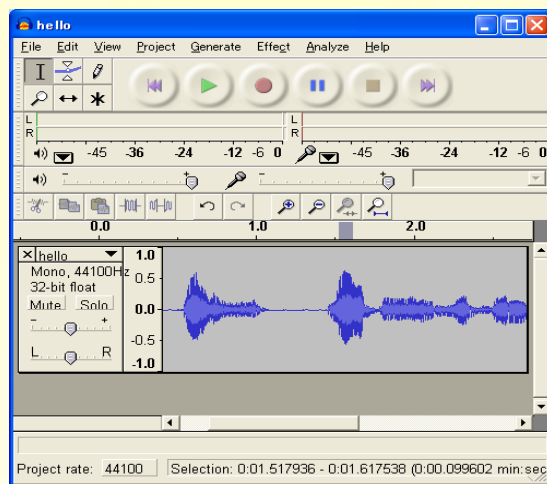
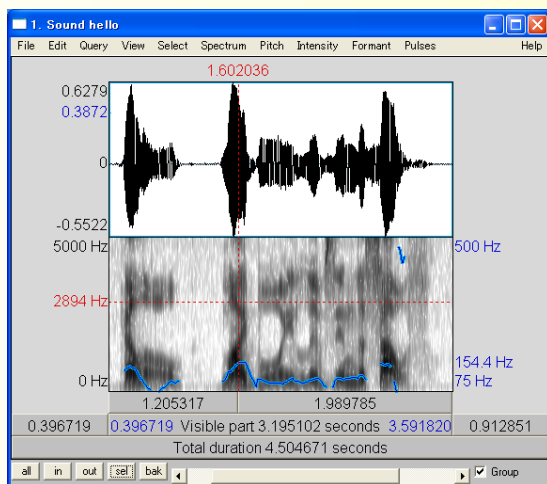
- Hardware
- Waveform and Spectrographic display applications
- Elicitation texts

Hardware

- Computer with sound capability
- Recording headset
- Some reference material on acoustic phonetics (optional, but helpful)
 - Wikipedia
 - OSU (Ohio State University) Language Files
 - Makino, 2005
 - *Lessons in English Phonetics for Japanese People.*
Tokyo: Ooshuukan (牧野武彦 (2005) 「日本人のための英語音声学レッスン」 東京:大修館書店).

Waveform and Spectrographic Display Apps

- Praat
 - <http://www.praat.org>
- Audacity
 - <http://audacity.sourceforge.net>
- WaveSurfer
 - <http://www.speech.kth.se/wavesurfer>



Elicitation Texts

- Dauer, R. M. 1993. *Accurate English: A complete course in pronunciation*. Englewood Cliffs, NJ: Regents/Prentice Hall.
- Comma gets a cure
 - <http://web.ku.edu/~idea/readings/comma.htm>
- The rainbow passage
 - <http://web.ku.edu/~idea/readings/rainbow.htm>
- Speech Accent Archive text
 - <http://accent.gmu.edu/about.php#1>
- Impromptu speech

Anecdotal Evidence of Effectiveness

- Student project: “Method to improve my pronunciation”
 - Recording 1: 
 - Recording 2: 
- English reduction patterns