

SPEECH COMMUNICATION
6.541J-24.968J-HST710J
Spring 2004

Lab 3

Assigned: 04/15/04

Due: 04/27/04

Prosody, timing and other sentence-level phenomena

In this laboratory, we will measure some of the acoustic properties of sentences.

1. Examples of intonation contours, duration effects, and segmental effects on fundamental frequency. Record the following two sentences.

They saw Pete today.

They saw Bob today.

Try to use the same prosody for the two sentences. Make spectrograms and F0 plots for both utterances. Look at the F0 contours for the two sentences.

- (a) What is the F0 difference from the initial vowel [e] to the end of the final vowel in **today**? Explain.
 - (b) What is the difference between the peak F0 in the vicinity of **Pete** or **Bob** and the final F0 in the sentence? Explain.
 - (c) Do you notice any differences in the detailed shape of the F0 contour in the two words **Pete** and **Bob**? What difference do you see? Can you explain the difference?
 - (d) Measure the duration of the vowel [e] in **they** and **today** for each sentence. What difference do you see? Why? Measure the duration of the first vowel in **today**.
2. Contrasting intonation contours. Design two sentences for which the word sequence is the same but by adjusting the prosody the meanings of the two sentences can be quite different. (Example: **I want the eggs benedict. I want the eggs, Benedict.**) Make spectrograms and F0 contours for the two sentences. Discuss the shapes of the different contours and the differences in segment durations.

Write a report containing a brief description of your experiments, your data, and a discussion of the data. The report should contain 3-4 pages of text, at most, plus figures.