Phonetics & Phonology: Homework 4
Part 1: Mapping vowel systems

The assignment is to map pronunciations of the English vowels, looking at the first two formants. Record yourself reading the words below. Then map your vowels, following the instructions below on the provided grid. Then comment on your vowel space. (e.g. How do the relative positions of the vowels match up to the canonical vowel chart of English? Did anything surprise you? etc.)

⇒You will need an external microphone of reasonable quality (it's usually the case that an internal microphone will pick up too much background/interal computer noise, making it more difficult to see the formants clearly). Be sure to allow adequate time for this assignment, in case you need to ask a friend to borrow a microphone or go to the Media Center in SWEM to do your recording.

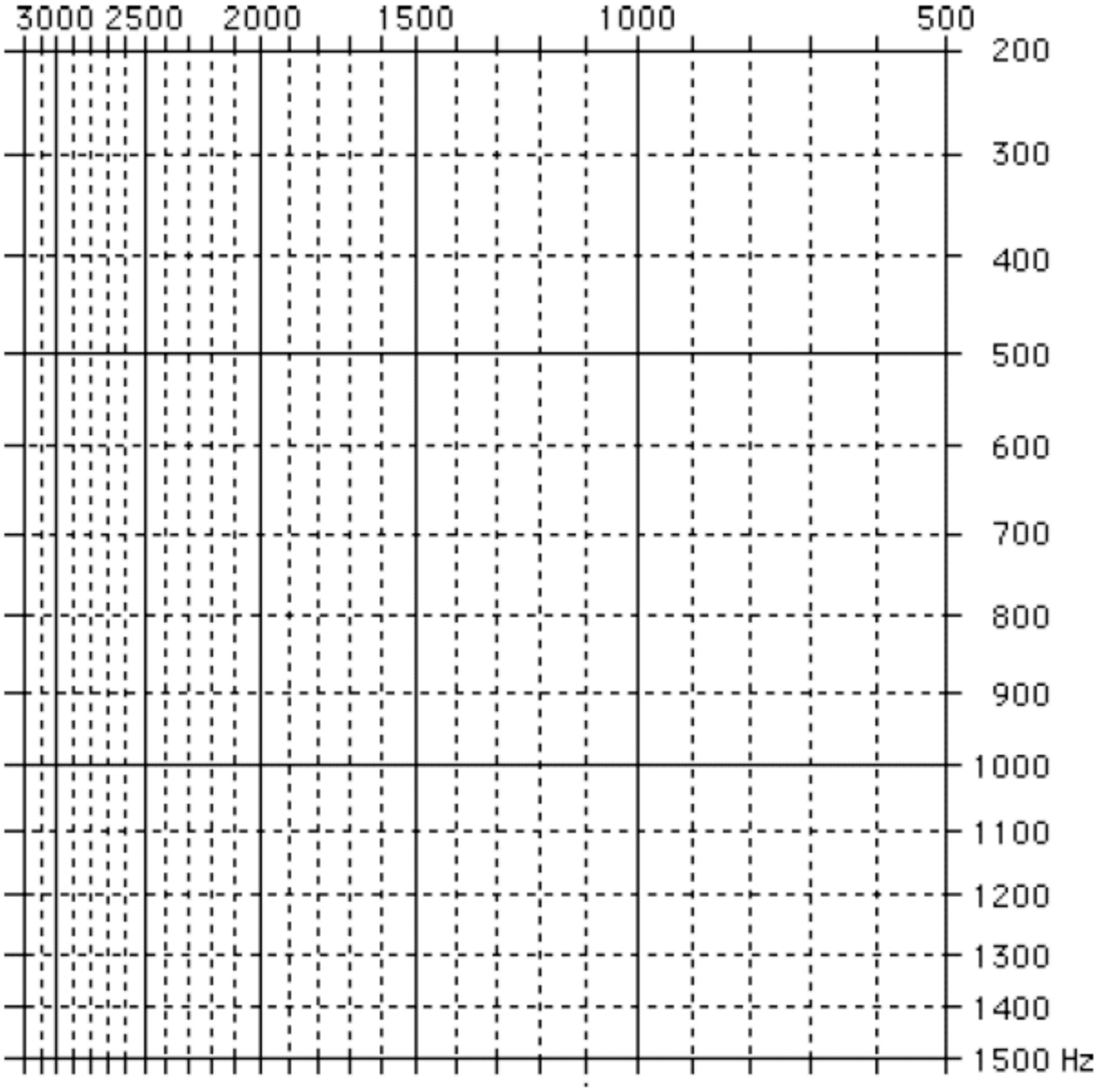
Open Praat. Go to 'New', then 'Record mono sound'. Then click 'Record' and say the following words (you might put in a dummy first and last word):

(1) American English vowels

[bit]	'beet'
[bɪt]	'bit'
[but]	'boot'
[pʊt]	'put'
[beɪt]	'bait'
[bɛt]	'bet'
[bʌt]	'but'
[boʊt]	'boat'
[bɔt]	'bought'
[bæt]	'bat'
[pat]	'pot'
[baɪt]	'bite'
[baʊt]	'bout'
[bɔɪ]	'boy'

Then press 'Stop' and 'Save to list'. Then in the objects window click on the sound that appeared and then on 'Edit'. A window will open with your sound file. Select the leftmost blob and under the window's 'View' menu go to 'Zoom to selection' (or click the "sel" button along the lower left of the spectrogram window). You will now be able to see the spectrogram for [bit] ('beet'). Note that the grid provided has F1 on the y-axis and F2 on the x-axis, and both run highest (at the zero crossing) to lowest. Referring to the intro to spectrogram handout, the book, and Tuesday's class, proceed to mapping your vowels, where the lowest dark bar is F1 and second lowest is F2 (note when F1 is high, there's a fuzzy black band below it that is F0). Use the scroll bar on the sound window to move to the next spectrogram (of [bɪt] ('bit')) and so forth. Note that you will need to make two measurements for diphthongs: One a bit in from the beginning, the second a bit in from the end. Map the two points and draw an arrow connecting the first to the second.

While your vowel space won't look exactly like a canonical vowel chart, the *relative* positions of the sounds should be the same. So if a vowel comes out with an unexpected relative position, it is advisable to remeasure it. (Sometimes it turns out that it's somewhere rather unexpected, but it's good to double-check.) **Write a brief statement about your vowel space, for example, what looks more or less like we'd expect it to? Is anything surprising?**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