

**Homework 4.** Due February 20, 2008 at the beginning of class.

1. **Complete your linguistic interviews** and fill out a spreadsheet for each speaker. The spreadsheet and instructions for coding can be downloaded from <http://www.ling.upenn.edu/~mpak/short-a.html>. Submit your spreadsheets via the LIN120 Blackboard page by 7pm Wednesday, 2/20. (3 points)

**Note:** For the remaining exercises in Homework 4, you are encouraged (but not required) to submit a **joint write-up** with one or two other students. In other words, you may work in groups of two or three and submit one paper with both/all of your names on it. You will all receive the same grade.

2. (2 points) As we mentioned in class, a velar nasal consonant is often pronounced as an alveolar nasal in English words like playing, swimming, etc. (a phenomenon sometimes referred to as ‘g-dropping’, and another well-studied case of variation). Interestingly, ‘g-dropping’ doesn’t apply to just any sequence of phonemes /ɪŋ/, but instead only seems to apply when the suffix *-ing* is involved. For example, un-suffixed words like *cling*, *bring*, and *string* **never** undergo ‘g-dropping’.

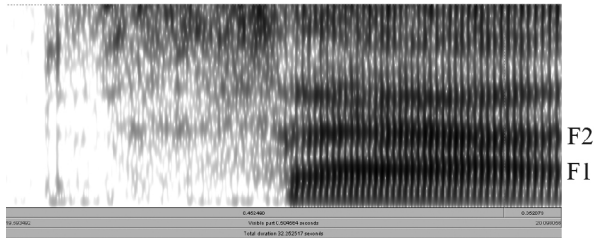
Download the spreadsheet at [www.ling.upenn.edu/~mpak/ING.xls](http://www.ling.upenn.edu/~mpak/ING.xls). This spreadsheet contains data that two of my colleagues and I collected in sociolinguistic interviews in Philadelphia in 2002.

- Each row is a phrase containing a word with *ing*.
  - Column B shows how the *ing* was pronounced:
    - 1: with a velar nasal
    - 0: with an alveolar nasal
    - 0\*: with an alveolar nasal along with reduction or deletion of the preceding /ɪ/ vowel (as in *going to* → *gonna*) (\*0)
  - Column D shows the grammatical category (part of speech) of the word containing *ing*:
    - n: noun
    - p: participle in a **progressive** construction with *be* ( e.g. *I’m taking linguistics*).
    - v: participle used as an adverb or with a verb other than *be*
    - s: ‘stative’ participle used as an adjective preceding a noun
    - f: participle of *go* used to indicate future tense (*be going to*)
    - t: instance of *something* or *nothing*
  - Column C indicates the style of speech and Column E indicates the following segment; you don’t need to worry about those codes for this assignment.
- a) Using the Excel methods we went over in class (Sort, Sum, CountIf, SumIf, etc.), **calculate the frequency of ‘g-dropping’** in progressive constructions (p) versus nouns (n). Report the basic result and specific numbers in the table below. Cells A-D should contain raw numbers, not percentages. Cells E-F should contain percentages – e.g., E should be A divided by the total.

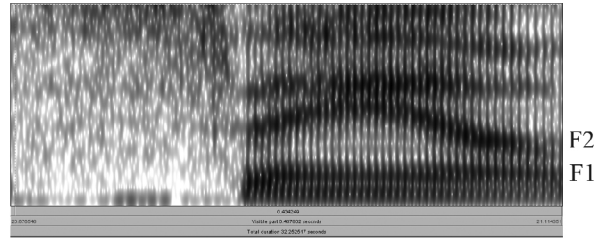
	progressives	nouns
alveolar nasal	A.	B.
velar nasal	C.	D.
frequency of ‘g-dropping’	E.	F.

- b) Write down the formula(s) you used to calculate the value for **each** of the cells A-F (number them A-F for clarity).

Spectrogram 1



Spectrogram 2



3. (2 points) These spectrograms show me saying the words **sad** and **Sam** – not necessarily in that order! – with the final consonant (/d/ or /m/) cut off. The F1 and F2 are labeled for you. I have already told you that I have the ‘nasal system’ for /æ/-tensing. Think about what that means the vowel will sound like for me in each of these words (tense or lax). Then do the following:
- In each spectrogram, draw a vertical line that shows where the /s/ stops and the vowel begins.
  - Look at the portion of each spectrogram to the right of the vertical line you just drew, focusing in particular on the shape of the first and second formants (F1 and F2). Write 2-4 sentences in which you (i) describe the differences in formant shape between the two spectrograms, and (ii) explain what you expect the corresponding differences in vowel quality to be.
  - Based on your answer to (b) and what you already know about /æ/-tensing in the ‘nasal system,’ label each spectrogram as **one** of the following:
    - sad (tense /æ/)
    - sad (lax /æ/)
    - Sam (tense /æ/)
    - Sam (lax /æ/)
4. (3 points) Look at Figure 5 on page 354 of the Labov (2007) paper 'Transmission and Diffusion' ([www.ling.upenn.edu/~mpak/120-labov.pdf](http://www.ling.upenn.edu/~mpak/120-labov.pdf)). This is a chart of American English consonant phonemes. It is organized slightly differently from the one in your Week 1 handout, but the general layout is the same (place of articulation in columns, manner of articulation in rows). A box is drawn around those consonants that trigger /æ/-tensing in New York City when they appear in syllable coda position following /æ/.
- Copy the consonant chart in Figure 5 on your own paper, then **label each column and each row with an appropriate heading**.
  - Circle those consonants that also trigger /æ/-tensing in closed syllables in **Philadelphia**. (Refer to the top of page 5 of your Week 2 handout for a reminder.)
  - Look at Figure 6 on p. 355 and circle the correct option for each of the underlined phrases below:  
 The dark triangles / empty squares in this graph represent words that are expected to undergo /æ/-tensing for a NYC speaker (based on Figure 5). The dark triangles are clustered in the upper-left portion of the graph, meaning that these words have a higher/lower F1 frequency and a higher/lower F2 frequency (in Hertz) than the words with empty squares. The empty squares therefore correspond to words with a higher/lower and backer/fronter vowel nucleus than (most) of the words with dark triangles.

**Extra credit:** (up to 3 points) Select and read **one** of the case studies in sections 3.1-3.4 of Labov (2007). Don't try to understand all the technical points in the section you choose, but write brief responses (1-2 sentences each) to the following questions, and be prepared to talk about them in class on 2/20:

- What is the history of migration/contact between NYC and this community? (if discussed)
- What are the primary differences between the /æ/-tensing system in this community and in NYC?
- Compare the ‘Short-a system’ graph given in your excerpt (Figure 8, 10, 11 or 13) to the NYC graph in Figure 6, and explain what differences between the two dialects are being represented.