

**Assignment #2: Natural classes and phonological distribution**

Due Tuesday, September 6

- (1) (If you don't read Japanese, use the online kana charts to help you answer this question.)  
Some hiragana symbols have a diacritic called *dakuten*, which looks like a double quotation mark ( ` ).
- (a) Give a transliteration (romanized spelling) for the **consonant** represented in each of the following hiragana symbols with dakuten: ど き ぜ
  - (b) Now give a transliteration for the **consonant** represented in each of the corresponding basic hiragana symbols (with no dakuten): と き せ
  - (c) The *transliterations* you just gave happen to be appropriate *phonological transcriptions* as well (for these particular hiragana symbols). Given this, what phonological difference is represented by the addition of the dakuten mark to the symbols in (b)?
  - (d) The following hiragana symbols never take dakuten: ま ね り ゆ わ. Why not?
  - (e) Here is another hiragana symbol that does take dakuten: ぼ. The corresponding basic hiragana symbol is ば. Again assuming that the transliterations are good estimates of the phonetic transcriptions for these symbols, is there anything unexpected about this particular pair of symbols? Explain.
- (2) Some speakers of Japanese, especially older speakers in particular districts of Tokyo, have the following distribution of the sounds [ŋ] and [g]. (Data from Vance 2008 and JDIC.)
- |                           |                    |              |                |
|---------------------------|--------------------|--------------|----------------|
| [ a <sup>h</sup> tswaŋe ] | 'thick fried tofu' | [ naŋai ]    | 'long'         |
| [ so:ŋu: ]                | 'encounter'        | [ tamanɛŋi ] | 'onion'        |
| [ kaŋi ]                  | 'key'              | [ ko:ŋyo:]   | 'industry'     |
| [ yu:rikaŋo ]             | 'cradle'           | [ ɕiŋe ]     | 'beard'        |
| [ ɸaŋɕu ]                 | 'pufferfish'       | [ giri ]     | 'obligation'   |
| [ gak:o: ]                | 'school'           | [ geta ]     | 'wooden clogs' |
| [ gohan ]                 | 'cooked rice'      | [ gu:zen ]   | 'coincidence'  |
- (a) Are [ŋ] and [g] in complementary or contrastive distribution in this data set?
  - (b) Provide evidence for your claim in (a) by describing the environments in which the sounds occur. Be systematic — make use of sound properties and natural classes.
  - (c) How many distinct phonemes are represented by [ŋ] and [g] here? If you think there are two phonemes, explain why. If you think there is one phoneme with multiple allophones, choose a "name" for the phoneme and state the circumstances under which the other allophone appears: what changes, in what context?

- (3) For this question, use the data in the handout “Alveolar/alveo-palatal obstruents, part (I),” available from the daily syllabus page on the course web site.
- (a) Consider the distribution of [ç] versus [s] in data set (2). You should find that the distribution is complementary.
- Assign a “name” to the phoneme that has allophones [ç] and [s], and state how to generate the other allophone in the appropriate environment. What changes, in what context?
- (b) Now consider the distribution of [t], [tç], and [ts] in data set (3). Again, you should find that the distribution is complementary.
- Again, assign a “name” to the phoneme that has allophones [t], [tç], and [ts], and state how to generate the other allophones in the appropriate environments.

- If you have taken LING 200 or 523 (Phonology), **go on to part (c)**.
- If you have never taken a phonology course, **you may stop here**. Part (c) of this question is not required for you. You are welcome to try it if you like; if you do, I will give you feedback on it, but I won’t count it as part of your grade for this assignment.

**\*\* Be sure to state on your assignment which of these two groups you are in. \*\***

- (c) Consider the rules you have written in parts (a) and (b). Do you see any commonalities between the [ç]~[s] rule and any of the [t]~[tç]~[ts] rules that would allow you to state a more general, inclusive rule? If so, attempt this, and discuss any difficulties or questions that arise. If not, explain why not.

Hint: It may help if you look for alternative ways of conceptualizing the [t]~[tç]~[ts] case, using natural classes as much as possible. The most concise analysis still requires two rules, but what are the *best* or *most insightful* two rules?