

## Homework assignment #2: Natural classes and phoneme analysis

Due **Thursday, September 14**

This version of HW #2 is for anyone who has never had a phonology course. (If you have previously taken LING 200/undergrad phonology, you may choose this version or the other version.)

Please submit your assignment on paper (use a separate sheet!) at the beginning of class. HW assignments may be handwritten or typed. If you prefer to type, note that IPA symbols and Japanese characters can be copied from course PDFs or web pages and pasted into your documents.

- (1) Some hiragana symbols have a diacritic called *dakuten*, which looks like a double quotation mark ( ` ). (If you don't read Japanese, use the online kana charts to help you answer this question.)
- (a) Give a kunrei transliteration (romanized spelling) for the **consonant** represented in each of the following hiragana symbols with dakuten: と き せ
  - (b) Now give a kunrei 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 *phonetic transcriptions* as well (for these particular hiragana symbols). Given this, what difference in sound properties 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 わ. These are also symbols whose transliterations are a good match for their pronunciations. Use **phonetic properties** to explain what the consonants represented by these symbols have in common, and why these symbols do not appear with dakuten.
  - (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 indications of the phonetic transcriptions for these symbols, explain what is **unexpected** about the sound value of ぼ, given the sound value of ば and the relationship between hiragana symbols with and without dakuten discussed in part (c).
- (2) For this question, use set (1) in the data set  
[“Alveolar/alveopalatal obstruents in Japanese, part \(I\)”](#)
- (a) Are the environments of [ç] and [s] predictable or unpredictable 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 [ç] and [s] here? If you think there are two phonemes, explain why. If you think there is one phoneme with multiple allophones, choose a mental representation for the phoneme and state a phonological rule that will produce the other allophone in the other context.
  - (d) Advanced/optional question: *This is encouraged especially for people who have had LING 200, “Phonology”, but it will not affect your HW grade negatively, and all are welcome to try it.*  
 Consider the analysis we proposed for set (2) of this same data set in class. Can a single, general analysis with more-general rules be proposed that covers both set (1) and set (2)? (Hint: Using sound properties will make this question more interesting.)