# Reading guide:  Moreton & Amano (1999) and Hallé et al. (1998)

Moreton, Elliott, and Shigeaki Amano.  1999.  Phonotactics in the perception of Japanese vowel length: Evidence for long-distance dependencies. *Proceedings of the 6th European Conference on Speech Communication and Technology*, Budapest.

Hallé, Pierre A., Juan Segui, Uli Frauenfelder, and Christine Meunier.  1998.  Processing of illegal consonant clusters: A case of perceptual assimilation? *Journal of Experimental Psychology:  Human Perception and Performance* 24 (2): 592-608.

## Background

   These are both papers with a focus in experimental phonetics rather than phonological theory.  Our goals in reading these two papers are (1) to understand what their crucial experimental findings are, (2) to understand what the authors think those findings mean, and (3) to think about implications the findings might have for some of the models of the phonetics-phonology interface that we have been considering in this course so far.

   *Note that both of these articles are interested in determining how well their results support different models of lexical access or word recognition (you will see terms such as TRACE, "interactive-activation model," FLMP, etc.).  You are not responsible for understanding the details of these arguments, since we have not been discussing the processing models that are being compared.*

## Questions to keep in mind while reading

I. MORETON & AMANO (1999)

Background information:  For now, you can think of *lexical strata* such as the Sino-Japanese and Foreign strata discussed here as subsets of the lexicon, each with its own constraint ranking.  (Specifically, most researchers think that lexical strata probably share a unified set of markedness constraints, but there are stratum-specific faithfulness constraints that allow each stratum to have different phonological behavior.)

(1)     What are some of the factors, cited here from earlier studies, that can influence a listener's perception of an acoustically ambiguous signal?

(2)     What is the new factor that Moreton & Amano are interested in looking at to see if it has similar effects?  What are some of the reasons why this factor is interesting to investigate?

(3)     In each experiment discussed here:
   <   What question is being asked?
   <   Very briefly, what were the results of the experiment — the answer to the question?  (Try to get a general understanding of what happened, but don't worry about the specific statistical results unless you have a background in statistics.)
   <   How do the authors interpret these results?
   <   Do you have any criticisms of their methodology or their discussion of this experiment?

(4)     What do Moreton & Amano draw as their overall conclusion?

II. HALLÉ ET AL. (1998)

Background:  Note that the term *(perceptual) assimilation* as used in the perception of non-native phonological categories is **not** referring to the phonological process of assimilation (in which one segment takes on some feature specifications of a nearby segment). Perceptual assimilation is the phenomenon according to which a non-native segment category is "heard as" a similar but non-identical native segment category.  Example: Mandarin [^] might be assimilated by an English speaker to the English [ʃ] category.

(5)    What crucial findings from prior studies do Hallé et al. present in their introduction, that either support or contradict the prediction that illicit clusters (made up of otherwise legal segments) should be perceptually assimilated?

(6)    What clusters are being examined in Hallé et al.'s study?  Hallé et al. refer to the nonexistence of these clusters in French as an "accidental gap"; why, and do you agree with this characterization?

(7)    In each experiment discussed here:
   <    What question is being asked?
   <    Very briefly, what were the results of the experiment — the answer to the question?  (Try to get a general understanding of what happened, but don't worry about the specific statistical results unless you have a background in statistics.)
   <    How do the authors interpret these results?
   <    Do you have any criticisms of their methodology or their discussion of this experiment?

•    For our purposes, it is not crucial that you understand the details of the different lexical-access and perception models that these authors discuss (TRACE, FLMP, etc.); much of their "General Discussion" section is devoted to this question.  One interesting point to note is that all these models seem to incoporate competition between information from the segmental level and information from some kind of larger or higher phonetic(?)/phonological(?) level.

•    Hallé et al. used several different experimental tasks and found different degrees of ability to identify the crucial illegal clusters.  What is their explanation for the different performance seen in the different tasks?  How do you think these factors might fit in to a phonological model?


**Some points for further thought and discussion**

•    To what extent has each of these papers demonstrated that the perception of a certain acoustic characteristic is influenced by the phonology (phonotactics) of the native-language grammar?  Do we have evidence here that phonological factors completely determine the way an acoustic signal is perceived?

- What implications do these findings have for the models of the phonology-phonetics interface that we have been considering?  For example, you could think about questions like these:

    < What does the constraint ranking look like for French clusters, or for [aː] in the Sino-Japanese stratum of Japanese?  Are these rankings a result of the P-map?  Or is the "P-map effect" (perceived similarity) a result of the constraint ranking?  How could we explore this question further?

    < What are the implications of these experimental findings for universal theories of (1) constraint-formation during language acquisition or (2) diachronic change as a consequence of "innocent misperception"?  In other words, can we assume that all speakers are going to react the same way to particular phonetic characteristics in the ambient language environment?