

Introduction to Constraint-Based Phonology

Over the previous two decades, constraint-based approaches to grammar have played a major role in phonological theory. This course is an introduction to these constraint-based models of phonology. The goal of the course is to familiarize students with these models so that they can interact successfully with current phonological literature. We will review the basic architecture of a constraint-based phonological grammar (kinds of constraints, modes of constraint evaluation, how to generate candidates, how to develop a constraint-based grammar, etc.).

Once the basics are in place, we will look at some of the most important instantiations of constraint-based models, including Optimality Theory (based on ranked constraints) and Harmonic Grammar (based on weighted constraints). We will cover both the “classic” versions of these two models that rely on discretely ranked or weighted constraints, and the stochastic/noisy versions that rely on continuously varying constraint ranks or weights.

The course will take a balanced approach to constraint-based phonology. We will evaluate the reasons for the rise in the popularity of constraint-based phonology by focusing on things that these models do well. But we will also discuss the shortcomings of constraint-based grammars, and briefly consider alternative approaches to those issues on which constraint-based grammars perform less well.

The course will be based mostly on extensive handouts. In addition to these handouts, we will read selections from the articles and books below:

- Boersma, Paul & Bruce Hayes. (2001) Empirical tests of the Gradual Learning Algorithm. *Linguistic Inquiry*, 32:45-86. [<http://www.linguistics.ucla.edu/people/hayes/GLA/gla.pdf>]
- Hayes, Bruce & Colin Wilson. (2008) A maximum entropy model of phonotactics and phonotactic learning. *Linguistic Inquiry*, 39:379-440. [<http://www.linguistics.ucla.edu/people/hayes/Papers/HayesAndWilsonPhonotactics2008.pdf>]
- Kager, René. (1999) *Optimality Theory*. Cambridge: Cambridge University Press.
- McCarthy, John J. (2008) *Doing Optimality Theory*. Malden: Wiley-Blackwell.
- McCarthy, John J. (2002) *A Thematic Guide to Optimality Theory*. Cambridge: Cambridge University Press.
- Pater, Joe. (2009) Weighted constraints in generative linguistics. *Cognitive Science*, 33:999-1035. [<http://people.umass.edu/pater/pater-cogsci-2009.pdf>]
- Pater, Joe. (to appear) Universal Grammar with weighted constraints. In John McCarthy and Joe Pater, eds. *Harmonic Grammar and Harmonic Serialism*. London: Equinox Press. [<http://people.umass.edu/pater/pater-ug-hg.pdf>]