

Linguistics 555 - Spring 2012
Seminar in Phonetics: Hearing & Speech Perception
M/W 3:00 - 4:15 in HRG 125

Instructor:	Dr. Kevin B. McGowan	Office Hours:	Tuesday 2:30 - 3:30pm
	kmcgowan@rice.edu		Friday 10:00 - 11:00am
	208 Herring Hall		or by appointment

Course Description and Goals

Experimental speech perception, which spans a period of more than 60 years, investigates how listeners extract a linguistic message from the input acoustic signal. From the discipline's earliest years, researchers recognized that the acoustic signal is highly variable and that perceptual processing is more complex (and interesting!) than a simple one-to-one mapping between acoustic property and linguistic percept. Thus, much of the research in speech perception has been guided by the fundamental question of how listeners "cope" with acoustic variability to achieve perceptual constancy.

How does speech perception differ from other types of auditory processing? What is the relation between speech production and perception? Are the primitives of speech perception auditory or articulatory? Do perceptual primitives associate with smaller (features, phonemes) or larger (syllables, words) linguistic units? How do listeners form perceptual categories from variable input, and what is the nature of the categories, or mental representations, that are formed? How is perception reorganized developmentally due to a child's experience with a particular phonological system? And in turn, how does perception influence phonological systems and phonological change?

This course is a hybrid advanced course/seminar treatment of the relationship between acoustic signals and mental representations. We will begin by concentrating on the structure of the human ear and psychoacoustics. This will lead into a survey of the primary theories of speech perception. Finally, we will treat as many topics of special interest as we can before we run out of time and are forced to part.

Course Requirements

- 1. Quizzes** 15%
- 2. Preparation, in-class presentations, participation, and questions** 45%
- 3. Project/Paper** 40%
The paper should be modeled on published research papers in speech perception and include: an introduction that situates your study within the relevant literature and outlines its theoretical grounding; the methods to be used in the proposed experiment; and a description of possible results and their implications.

Tentative Course Schedule

MONDAY		WEDNESDAY	
Jan 9th Introduction & What is Phonology? no reading	1	11th Anatomy; Transduction Yost 6-7	2
16th		18th Peripheral Auditory Nervous System Yost 8-9 *Quiz 1*	3
23rd Tuning Curves, encoding fq, intensity & time Yost Appendix D	4	25th Thresholds; intensity resolution/loudness Yost 10, 13 *Quiz 2*	5
30th Thresholds; intensity resolution/loudness	6	Feb 1st Masking, fq resolution, temporal resolution Yost 11 *Quiz 3*	7
6th Localization, sound source segregation Yost 12, 14	8	8th Localization, sound source segregation *Quiz 4*	9
13th Speech Perception: setting the stage Lieberman (1996) *Quiz 5*	10	15th Diehl, Lotto, & Holt (2004)	11
20th Motor Theory of Speech Perception Lieberman et al. (1957) Lieberman et al. (1967)	12	22nd Lieberman & Mattingly (1985) Galantucci et al. (2006)	13
27th		29th	
Mar 5th Direct Realism Fowler (1986) Best (1995)	14	7th Ohala (1996) Fowler (1996) optional: McGurk & McDonald (1976)	15
12th Auditory Theories Diehl & Kluender (1989) Fowler (1989) Kingston & Diehl (1994) optional: Diehl & Kluender (1989b)	16	14th Holt, Stephens, & Lotto (2005) Lotto & Holt (2006) Paper topic due	17

MONDAY		WEDNESDAY	
19th	18	21st	19
Quantal Theory/Acoustic Landmarks Stevens (1989) optional: Diehl (2008) Stevens (2002) (resched for: 3-30)		Exemplar Models Johnson (1997)	
26th	20	28th	21
NO MEETING		Johnson (2006)	
Apr 2nd	22	4th	23
Pierrehumbert (2001) [Evgeniya] optional: Bybee (2006) References due		Listener as the source of Sound Change Ohala (1981) [Philipp] Beddor (2009)	
9th	24	11th	25
Socioindexical Perception Niedzielski (1999) Hay & Drager (2010) [Claire]		Staum Casasanto (2009a) [Sarah]	
16th	26	18th	27
Eye Tracking Dahan (2001) [John] Beddor Et. Al (2012)		Double-Weak Theory Nearey (1997) [Ling] optional: Nearey (1992)	

5-2 Final Paper Due