

# LIGN214 THE PRODUCTION AND PERCEPTION OF SPEECH RHYTHM

*Spring Quarter 2009*

**Class meetings:** Monday-Wednesday 10:00-11:50, AP&M 4218.

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**Office hours:** Wednesday 2:30-4:30, or by appointment

## **Brief description**

The goal of this seminar is to review the phonetic, phonological and psychological literature on rhythm (in speech and other modalities), and to guide students towards a more nuanced understanding of the phenomenon. Course coverage is both theoretical and practical: we will be reviewing various models of rhythm but we will also be testing experimentally specific hypotheses that stem from the existing literature.

This is because the views of rhythm expressed in phonetic, phonological and psychological literature are quite divergent and often mutually incompatible. Yet rhythm in speech is now considered crucial for language acquisition and speech processing, so developing models of rhythm that are psychologically plausible and applicable to speakers of all languages is crucial (and currently lacking).

The main aims of this seminar are: (i) to gain an understanding of the diverging views on speech rhythm, and of how rhythm relates to other prosodic phenomena, such as stress and timing (with which it is often confounded); (ii) to provide hands-on experience doing research on rhythm in the laboratory.

The seminar will be based on a series of readings. Each student is expected to present papers and participate in discussions on a regular basis. In addition, students are expected to complete a short paper that will be either experimental in nature (involving a small scale experiment or at least some instrumentally backed observations) or an extensive critical review of the literature on a specific aspect of rhythm research. Paper topics will be defined by the students in collaboration with the instructor.

## **Requirements and grading**

- Class presentations (40%)
- A final research paper to be completed by the end of exam week (60%)

## **Readings**

Most readings are available on line through the library or the LLBA database. Those with an asterisk in front of them will be available at <http://idiom.ucsd.edu/~arvaniti/214readings.htm> or as photocopies

## TOPICS AND READINGS WEEK BY WEEK

WEEK	DATE	TOPIC and READINGS
Wk 1	Mon 3/31	<b>Introduction: what is rhythm and why is it worth studying it? Organization of the seminar</b>
Wk 1	Wed 4/1	<p><b>Rhythm Classes</b></p> <p>* Reflections on the dichotomy "stress" vs. "syllable-timing", Bertinetto, Pier Marco, <i>Revue de Phonetique Appliquée</i>, 1989, 91-92-93, 99-130.</p> <p>Meter and Speech, Port, Robert F, <i>Journal of Phonetics</i>, 2003, 31, 3-4, 599-611</p>
Wk 2	Mon 4/6	<p><b>Bob Port's visit // discussion of his work</b></p> <p>Effects of Timing Regularity and Metrical Expectancy on Spoken-Word Perception, Quené, H; Port, R, <i>Phonetica</i>, 2005, 62, 1, Aug, 1-13</p> <p>* Speech rhythm in English and Japanese, Tajima, Keiichi &amp; Robert F. Port. 2003. <i>Phonetic Interpretation: Papers in Laboratory Phonology VI</i>, ed. by John Local, Richard Ogden &amp; Rosalind Temple, 322-339. Cambridge: Cambridge University Press.</p>
Wk 2	Wed 4/8	<p><b>Dauer's contribution</b></p> <p>* Stress-Timing and Syllable-Timing Reanalyzed, Dauer, R M, <i>Journal of Phonetics</i>, 1983, 11, 1, 51-62</p> <p>* Phonetic and phonological components of language rhythm, Dauer, Rebecca M. 1987. <i>Proceedings of the XI<sup>th</sup> International Congress of Phonetic Sciences.</i>, 447-449.</p>
Wk 3	Mon 4/13	<p><b>Rhythm metrics</b></p> <p>Correlates of Linguistic Rhythm in the Speech Signal, Ramus, Franck; Nespor, Marina; Mehler, Jacques, <i>Cognition</i>, 1999, 73, 3, 265-292</p> <p>* Durational Variability in Speech and the Rhythm Class Hypothesis, Grabe, E. and Low, E.L. (2002). <i>Papers in Laboratory Phonology 7</i>, Mouton.</p>
Wk 3	Wed 4/15	<p><b>Applying rhythm metrics</b></p> <p>Rhythmic Characteristics of Colloquial and Formal Tamil, Keane, Elinor, <i>Language and Speech</i>, 2006, 49, 3, 299-332</p> <p>* Mandarin Rhythm: An Acoustic Study, Lin, Hua; Wang, Qian, <i>Journal of Chinese Language and Computing</i>, 2007, 17, 3, 127-140</p>
Wk 4	Mon 4/20	<p><b>Criticism of metrics and rhythm classes</b></p> <p>* Perceptual Isochrony in English and in French, Scott, Donia R; Isard, S D; de Boysson-Bardies, Benedicte, <i>Journal of Phonetics</i>, 1985, 13, 2, 155-162</p> <p>Cross-language similarities and differences in spontaneous speech patterns, Barry, William; Andreeva, Bistra, <i>Journal of the International Phonetic Association</i>, 2001, 31, 1, 51-66</p> <p>Rhythm, timing and the timing of rhythm, Arvaniti, Amalia, <i>Phonetica</i>, 2009, 66.</p>
Wk 4	Wed 4/22	<p><b>Rhythm and acquisition</b></p> <p>Perception and Acquisition of Linguistic Rhythm by Infants, Nazzi, Thierry; Ramus, Franck, <i>Speech Communication</i>, 2003, 41, 1, 233-243</p> <p>Language Discrimination by Newborns: Teasing Apart Phonotactic, Rhythmic, and Intonational Cues, Ramus, F., <i>Annual Review of Language Acquisition</i>, 2002, 2, 85-115</p>
Wk 5	Mon 4/27	<p><b>Alternatives views on acquisition</b></p> <p>Patterns of Timing in the Acquisition, Perception, and Production of Speech, Kello, Christopher T, <i>Journal of Phonetics</i>, 2003, 31, 3-4, 619-626</p> <p>Prosody in production at the onset of word use: A cross-linguistic study, Depaolis, Rory A; Vihman, Marilyn M; Kunnari, Sari, <i>Journal of Phonetics</i>, 2008, 36, 2, 406-422</p>

		<b>The role of rhythm classes in perception</b>
Wk 5	Wed 4/29	Perceptual Tests of Rhythmic Similarity: I. Mora Rhythm, Murty, Lalita; Otake, Takashi; Cutler, Anne, Language and Speech, 2007, 50, 1, 77-99 Rhythmic Categories in Spoken-Word Recognition, Cutler, Anne; Otake, Takashi Journal of Memory and Language, 2002, 46, 2, 296-322
		<b>Alternative views of rhythm and its role in perception</b>
Wk 6	Mon 5/4	Distinguishing Samples of Spoken Korean from Rhythmic and Regional Competitors, Bond, Z S; Stockmal, Verna, Language Sciences, 2002, 24, 2, 175-185 How Do Syllables Contribute to the Perception of Spoken English? Insight from the Migration Paradigm, Mattys, Sven L; Melhorn, James F, Language and Speech, 2005, 48, 2, 223-25
		<b>The perception of rhythm</b>
Wk 6	Wed 5/6	Perception of rhythmic grouping: Testing the iambic/trochaic law Hay, Jessica S F; Diehl, Randy L, Perception & Psychophysics, 2007, 69, 1, 113-122
		<b>Psychological views of rhythm</b>
Wk 7	Mon 5/11	* Rhythm and tempo. Fraisse, Paul. 1982. The Psychology of Music, ed. by Diana Deutsch, 149-180. New York: Academic Press. * Rhythm and timing in music. Clarke, Eric F. 1999. The Psychology of Music, ed. by Diana Deutsch, 473-500. New York: Academic Press.
Wk 7	Wed 5/13	<b>No assigned reading – catching up day</b>
		<b>The phonological view of rhythm</b>
Wk 8	Mon 5/18	* Metrical Stress Theory, Chap. 9 (Phrasal Stress). Bruce Hayes. 1995. The University of Chicago Press.
		<b>The role of pitch and intonation</b>
Wk 8	Wed 5/20	Distal prosodic context affects word segmentation and lexical processing, Dilley, Laura C; McAuley, J Devin, Journal of Memory and Language, 2008, 59, 3, 294-311 The Perception of Prominence Patterns, Kohler, Klaus J., Phonetica, 2008, 65:257-269
Wk 9	Mon 5/25	<b>Memorial Day – NO CLASS</b>
		<b>Music and rhythm</b>
Wk 9	Wed 5/27	An Empirical Comparison of Rhythm in Language and Music, Patel, Aniruddh D; Daniele, Joseph R, Cognition, 2003, 87, 1, Feb, B35-B45
		<b>Rhythm as entrainment</b>
Wk 10	Mon 6/1	Practice and Performance in Speech Produced Synchronously, Cummins, Fred, Journal of Phonetics, 2003, 31, 2, 139-148 What Marks the Beat of Speech?, Kochanski, Greg; Orphanidou, Christina, The Journal of the Acoustical Society of America, 2008, 123, 5, May, 2780-2791
Wk 10	Wed 6/3	<b>Presentation of class projects</b>
Exam week	Thu 6/11	<b>Submission of class papers</b>

<b>Presenter</b>	<b>Paper</b>
	Reflections on the dichotomy "stress" vs. "syllable-timing", Bertinetto, Pier Marco
	Meter and Speech, Port, Robert F, Journal of Phonetics
	Effects of Timing Regularity and Metrical Expectancy on Spoken-Word Perception, Quené, H; Port, R
	Speech rhythm in English and Japanese, Tajima, Keiichi & Robert F. Port. 2003
	Stress-Timing and Syllable-Timing Reanalyzed, Dauer, R M, Journal of Phonetics, 1983
	Phonetic and phonological components of language rhythm, Dauer, Rebecca M.1987.
	Correlates of Linguistic Rhythm in the Speech Signal, Ramus, Franck et al. 1999
	Durational Variability in Speech and the Rhythm Class Hypothesis, Grabe, E. and Low,
	Rhythmic Characteristics of Colloquial and Formal Tamil, Keane, Elinor,
	Mandarin Rhythm: An Acoustic Study, Lin, Hua; Wang, Qian,
	Perceptual Isochrony in English and in French, Scott, et al.
	Cross-language similarities and differences in spontaneous speech patterns, Barry, & Andreeva
	Rhythm, timing and the timing of rhythm, Arvaniti, Amalia,
	Perception and Acquisition of Linguistic Rhythm by Infants, Nazzi, Thierry; Ramus, Franck,
	Language Discrimination by Newborns: Teasing Apart Phonotactic, Rhythmic, and Intonational Cues, Ramus, F.,
	Patterns of Timing in the Acquisition, Perception, and Production of Speech, Kello, Christopher T,
	Prosody in production at the onset of word use: A cross-linguistic study, Depaolis, Rory A; Vihman, Marilyn M; Kunnari, Sari,
	Perceptual Tests of Rhythmic Similarity: I. Mora Rhythm, Murty, Lalita; Otake, Takashi; Cutler, Anne,
	Rhythmic Categories in Spoken-Word Recognition, Cutler, Anne; Otake, Takashi
	Distinguishing Samples of Spoken Korean from Rhythmic and Regional Competitors, Bond, Z S; Stockmal, Verna, 5
	How Do Syllables Contribute to the Perception of Spoken English? Insight from the Migration Paradigm, Mattys, Sven L; Melhorn, James F,
	Perception of rhythmic grouping: Testing the iambic/trochaic law Hay, Jessica S F; Diehl, Randy L,
	Rhythm and tempo. Fraise, Paul. 1982.
	Rhythm and timing in music. Clarke, Eric F. 1999.
	Metrical Stress Theory, Chap. 9 (Phrasal Stress). Bruce Hayes. 1995.
	Distal prosodic context affects word segmentation and lexical processing, Dilley, Laura C; McAuley, J Devin,
	The Perception of Prominence Patterns, Kohler, Klaus J.,
	An Empirical Comparison of Rhythm in Language and Music, Patel, & Joseph
	Practice and Performance in Speech Produced Synchronously, Cummins, Fred,
	What Marks the Beat of Speech?, Kochanski, Greg; Orphanidou, Christina,