Uncertainty in Human Language Learning and Processing
Linguistics 393 (41272)

Spring 2010
UTC 3.120
TTh 3:30-5:00 PM

Instructor

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Office hours: Wednesday 2-3:30pm Thursday 10-11:30pm or by appointment

Overview of Content

Languages are usually described using discrete tools like categories, rules, trees, word senses, truth conditions etc. Language in use, however, is a far less manageable beast. Categories are fuzzy, rules can rarely be applied in all contexts, and the relationship between the linguistic form used and the information conveyed is only ever correlative. Learning, producing and understanding language requires the speaker not to internalize and manipulate discrete symbols but to reason under uncertainty. In this course we will look at what strategies people use to deal with this uncertainty. While the focus will be on the psychology of language, learning and decision making, we will also address how we can redescribe fundamental phenomena in linguistics, from phonology to pragmatics, in terms of probabilities, and will be concerned throughout with the bigger question of what it means to call language or knowledge of language probabilistic.

Course Objectives

By the end of this course you should be equipped to read, understand, evaluate and discuss current theoretical and empirical papers concerning probabilistic approaches to language and its learning and processing.

Discussion Notes/Questions

Before noon on each class day (except during the first week) in which we are to discuss a paper you will be asked to send me (by email) a list of at least 3 questions or discussion points relating to the paper or topic to be discussed that day. This will help me to prepare and to organize the discussion around your interests. If you are unable to do this you should let me know in advance. For some meetings this will not be necessary and I will inform you in advance when this is the case.

Methods of Evaluation
10% - Class participation
10% - Submitted discussion questions (see above).
30% - Presentation of 2 readings
5%  - Outline for term paper (to be submitted on or before the first class after spring break)
45% - Term paper (approximately 10-15 pages. To be submitted on or before April 22nd)

**Extension Policy**

Homework must be turned in on the due date by the start of class. Extensions will be considered on a case-by-case basis and only if the student asks for the extension before the deadline. The greater the advance notice of a need for an extension, the greater the likelihood that it will be granted.

**Communication**

I will occasionally distribute important information concerning the class either by posting announcements on Blackboard, or by sending email. You should both read your email and consult Blackboard regularly.

**Plagiarism Policy**

All work submitted should be your own. Any plagiarism will result in your receiving a zero for the assignment in question. Please see this website for important guidelines on what constitutes plagiarism and how you can avoid it: http://deanofstudents.utexas.edu/sjs/scholdis.php

**Religious Holy Days**

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.

**Documented Disability Statement**

Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone). Faculty are not required to provide accommodations without an official accommodation letter from SSD.

**Tentative Course Schedule:** **This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance learning opportunities for the class. Such changes, communicated clearly, are not unusual and should be expected. Other readings will be assigned throughout the semester.**
Week 1

Jan 19th  Introduction to the course
Jan 21st  Introduction to probability
          Reading: John Goldsmith (2007), Probability for Linguists.

Week 2

Jan 26th  Introduction to information theory
          Reading: Excerpt from Dretske, F. (1981) Knowledge and the Flow of
          Information (MIT Press)
Jan 28th  Introduction to decision-making
          Reading: TBD

Week 3

Feb 2    Uncertainty and word recognition
          Reading: David Howes (1957). On the relation between the intelligibility
          and frequency of occurrence of English words. Journal of the Acoustical
          Society of America 29:296–305.
          optimal Bayesian decision process. Psychological Review, 113(2), 327-
          357
Feb 4    Uncertainty and morphology
          Reading: Moscoso del Prado Martín, F., Kostić, A., & Baayen, R.H.
          (2004). Putting the bits together: An information-theoretical perspective

Week 4

Feb 9    Uncertainty and the lexicon
          Reading: M. Baroni. 2009. Distributions in text. In Anke Lüdeling and
          Merja Kytö (eds.), Corpus linguistics: An international handbook Steven
          T. Piantadosi, Harry Tily, Ted Gibson. The communicative lexicon
Feb 11   Uncertainty and the sentence
          reveal the on-line computation of lexical probabilities. Psychological
          Science, 14, 648-652.

Week 5

Feb 16th Uncertainty and speech production


Mar 11  Uncertainty and meaning

Week 9 – SPRING BREAK

Week 10

Mar 23  Uncertainty and pragmatics
Excerpt from Prashant Parikh, The Use of Language (CSLI Publications)

Mar 25  Uncertainty and pragmatics

Week 11

Mar 30  Are speakers really rational?

April 1  Uncertainty and the learner

Week 12

Apr 6  Uncertainty and the learner
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