

LING 499
Special Topics: Experimental Syntax
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GSF 301T

Course description

Once they have reached a certain maturational stage, every member of the human species is able to produce and comprehend the language to which s/he is exposed, barring any serious impairment. Underlying this ability of ours to relate linguistic sounds/signs and meaning is the *language faculty*: this is one of the most fundamental working hypotheses adopted in the research program initiated by Noam Chomsky over half a century ago. This course is an introduction to the study of the language faculty. One of the distinctive features of this course is its emphasis on the importance of experiments. We follow the spirit of Richard Feynman's "Experiment is the sole judge of scientific truth." At the beginning of the semester, the students will participate in an on-line experiment as informants, before they learn anything about what is behind the experiment. They will then learn what hypotheses have given rise to what predictions and how the experiment has been designed.

Because the language faculty is internal to the mind of an individual member of the species, our hypotheses are about *individual* speakers. The students will learn how it is possible to make *definite* predictions about *individual* speakers of a particular language and obtain experimental results precisely in accordance with such predictions. They will learn (1), among other things.

- (1) a. what predictions are tested in the on-line Experiments
- b. what hypotheses have given rise to those predictions.

They do so in relation to the actual experiments in which they will have participated as an informant. They study their own judgments in those experiments, and analyze them in accordance with the methodology they have learned. Several on-line assignments (Assignments 1-3 and 9-10) will be given to help the students understand the crucial concepts introduced in class.

After having done the above, the students will conduct in-person experiments with their friends and family members, as their assignments (Experiment Project), and report their results in class. We will consider what follow-up experiments might be needed for (some of) their informants and they will conduct the follow-up experiments on them if applicable. The students will learn what the language faculty scientist must do in order to design an experiment to find out about the properties of the language faculty that we can study by the basic scientific method. During the course of the semester, the students will learn how we can accumulate our knowledge about the language faculty by following the basic scientific method: Making hypotheses, deducing definite predictions, and comparing the predictions with experimental results.

Assignments 1-3 and 9-10 contain multiple-choice questions; the students can submit answers more than once. Assignments 4-6 give the students the chance to check experimental results in accordance with the methodology they have learned. In Assignment 7, the students design their own experiment off-line. In Assignment 8, they design their own experiment on-line.

One of the main goals of the course is to introduce to the students the thesis that we can study the language faculty (as an exact science) very much as in physics; more precisely, there are aspects of the language faculty that can be studied by the basic scientific method. Language faculty science deals with what is internal to the individual member of the species, and hence what is internal to each student in the context of this course. And each student will have the chance to evaluate the predictions made by the hypotheses under discussion against their own linguistic intuitions and try to modify aspects of the experiments in light of their own intuitions and the intuitions of their informants. In other words, the students will have the chance to experience doing an exact science themselves.

Our experiments mainly deal with English. But if there are speakers of other languages in class, we

will try to discuss how experiments should be designed dealing with those languages as well.

Weekly schedule

| Weeks | Topic | Readings, Assignments, etc. |
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| Part One: The Basic Scientific Method and Language Faculty Science | | |
| 1a | The basic scientific method, "Experiment as the sole judge of scientific truth," "Guess-Compute-Compare." | Feynman videos ("Guess-Compute-Compare") Feynman excerpt(s) on the general principle of science |
| 1b | The basic scientific method, continued. | |
| 2a | Experiments in language faculty science | Handouts |
| 2b | Experiments in language faculty science, continued. | |
| 3a | Actual Experiments: an initial discussion; Definite predictions in language faculty science. | Experiment-participation Assignment #1 due. |
| 3b | Comprehension and factual knowledge. | Einstein's Foreword to Galileo's <i>Dialogue</i> |
| Part Two: Hypotheses and Experiments in Language Faculty Science | | |
| 4a | The Computational System of the language faculty, Merge, c-command, the immediate goal of the language faculty scientist. | Chomsky's essay ("The Galilean Challenge"), Lasnik reading. Assignment 1 (C-command exercise) |
| 4b | What goes on when we judge the acceptability of a sentence under a specified dependency interpretation? | Excerpts from Hoji 2015 Submit a report on what you have learned so far and what you are having difficulty with. (Initial Report) |
| 5a | The deduction of definite predictions and the experimental design in language faculty science. | Handouts, excerpts from Hoji 2015: Glossary. Assignment 2 (Prediction-deduction exercise) |
| 5b | Universal and language-particular hypotheses. | Experiment-participation Assignment #2 due. |
| 6a | Analyzing experimental results (I) | Experiment result charts. |
| 6b | Additional hypotheses and a modified experimental design | Feynman excerpt(s) on the effectiveness of the experimental device. |
| 7a | The designer-informant experiment, a non-designer-informant experiment, and a multiple-non-researcher-informant experiment | Handouts, excerpts from Hoji 2015: Glossary. |
| 7b | Experiments vs. demonstrations | Crease reading "Experiments and Demonstrations." Assignment 3 (The designer-informant and the non-designer-informant experiments) |
| 8a | Main- and Sub-Experiments | Assignment 4 (Checking the experimental results) |
| Part Three: Experiment Projects | | |
| 8b | Experiment projects | |
| 9a | Analyzing experimental results (II) | Report in class on the result of the Experiment Project. |
| 9b | Hypotheses to account for unexpected experimental results and a modified | |

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|---|---|--|
| | experimental design | |
| 10a | Follow-up experiments | |
| 10b | Analyzing experimental results (III) | Report in class on the result of the follow-up experiments. |
| 11a | Further discussion: a continuation of the above and/or discussion of some widely accepted hypotheses in the field and the results of our Experiments. | Lasnik reading. Binding condition C/D. Assignment 5 (Analyzing and discussing various aspects of the experimental results) |
| Part 4: Experiments dealing with languages other than English | | |
| 11b | Sample: Experiments dealing with Japanese (I); Testing the universal hypotheses. | Hoji 2015 excerpts. |
| 12a | Sample: Experiments dealing with Japanese (II); the design and the results of the Experiments. | Assignment 6 (Checking the results of Experiments in Japanese) |
| 12b | Experiments dealing with your own language if it is a language other than English. | The contents of 12b-14b will very much depend upon what we get to discuss in these weeks. |
| 13a | Experimental design | Assignment 7 (The submission of the experimental design) |
| 13b | Designing an on-line experiment. | Assignment 8 (Designing an on-line experiment) |
| 14a | Experimental results | Discussing the initial results of the experiment. |
| 14b | Discussion and further perspectives. | |
| 15a | Conceptual and methodological summary. | Assignment 9 (Testing your understanding) |
| 15b | Empirical and experimental summary. | Assignment 10 (Testing your understanding) |
| 16 | Final Report due May 9, 2019 | |

End-of-the-semester Report:

The report due at the end of the semester can deal with *any* of the topics in (2):

- (2)
- a. Your Experiment Project, including the follow-up experiments.
 - b. Your experiment dealing with your own language other than English.
 - c. What you have learned about experiments in language faculty science, as compared to experiments in physics.

Course Requirements and Grades

The course grades will be based on the assignments and reports as specified in the syllabus. The contribution of the Assignments and the Reports to the final course grade is as indicated below:

| | |
|--------------------------|------|
| Experiment-participation | 10% |
| Assignments | 60% |
| Initial Report | 5% |
| In-class Reports | 10% |
| Final Report | 15% |
| Total: | 100% |

For the Experiment-participation Assignments, the students will get full points as long as they follow all the instructions.

The same holds for Assignments 4, 7 and 8.

Assignments 1-3, 5-6, and 9-10 are on-line assignments and the questions are multiple-choice questions. The students are allowed to submit their answers more than once.

Readings

The relevant readings will be made available at Bb.

Chomsky excerpts

Chomsky's "The Galilean Challenge"

Crease "Interlude: Experiments and Demonstrations"

Einstein 1936, Sections 1 and 2

Einstein's Foreword to Galileo's *Dialogue*

Feynman excerpts

Hoji 2015 excerpts

Lasnik 1990

References

Chomsky, Noam. 1975. *Reflections on Language*. Pantheon, New York.

Chomsky, Noam. 2004. *The Generative Enterprise Revisited*, Mouton de Gruyter, Berlin.

Chomsky, Noam. 2012. *The Science of Language: Interview with James McGilvray*, Cambridge University Press, Cambridge.

Chomsky, N. 2017. "[The Galilean Challenge](#)," *Inference: International Review of Science*, Vol. 3. Issue 1.

Crease, Robert P. 2003. *The Prism and the Pendulum: The Ten Most Beautiful Experiments in Science*, Random House, New York.

Einstein, A., 1936. Physics and Reality. *The Journal of the Franklin Institute*; Reprinted in: *Ideas and Opinions*. 1955. Crown Publishers, New York. (The page references are to the 1982 edition, Crown Trade Paper Backs.) The paper is available at: http://www.kostic.niu.edu/physics_and_reality-albert_einstein.pdf.

Einstein, A., Foreword to *Dialogue Concerning the Two Chief World Systems—Ptolemaic & Copernican* by Galileo Galilei, translated by Stillman Drake, 1967, University of California Press. (The assigned reading is pp. xvii-xix.)

Feynman, Richard. 1963. *Six Easy Pieces*, Basic Books, New York.

Feynman, Richard. 1965/1994. *The character of physical law*, The Modern Library, New York. (The page references are to the 1994 edition.)

Feynman, Richard. 1999. *The Pleasure of Finding Things Out*, Basic Books, New York.

Hoji, Hajime. 2015. *Language Faculty Science*. Cambridge University Press. (The assigned readings are pp. 1-8 and pp. 313-318.)

Lasnik, Howard. 1990. "Syntax," in D. N. Osherson and H. Lasnik eds., *Language: An Invitation to Cognitive Science Volume 1*, A Bradford Book, The MIT Press, Cambridge, pp. 5-21.

Ueyama, Ayumi. 2010. "Model of judgment making and hypotheses in generative grammar," In: Iwasaki, Shoichi; Hoji, Hajime; Clancy, Patricia; and Sohn, Sung-Ock (eds.), *Japanese/Korean Linguistics 17*, CSLI, Stanford, CA: 27-47. (Available at: <http://www.gges.org/hoji/research/hp-Ayumi.cgi>).

Students with Disabilities

Students who need to request accommodations based on a disability are required to register each

semester with the Disability Services and Programs. In addition, a letter of verification to the instructor from Disability Services and Programs is needed. Please be sure the letter is delivered to me or the TA as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Student Health Counseling Services - (213) 740-7711 – 24/7 on call

engemannshc.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call

suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call

engemannshc.usc.edu/rsvp

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) / Title IX - (213) 740-5086

equity.usc.edu, titleix.usc.edu

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421

studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776

dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

studentaffairs.usc.edu/ssa

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.