

In a Word

Time: T/TH: 11:00-12:20
Location: WPH B27

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Teaching Assistants:

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The members of the human species are able to produce and comprehend the language to which they are exposed once they have reached a certain maturational stage, barring any serious impairment. One of the most fundamental working hypotheses adopted in the research program initiated by Noam Chomsky over half a century ago is that part(s) of the mind underlies this ability of ours and it is called the *language faculty*. Chomsky has maintained that we should approach the *language faculty* just as natural scientists approach their subject matters.

The specific goal of this course is two-fold. On the one hand, it aims to introduce systematic aspects of language, with regard to how words are formed, how sounds are put together to form a word, how words are combined to form a larger expression, such as a sentence, and how some aspects of the "meanings" are computed, among other issues. The other aim of the course is to introduce to the students, building on the discussion and activities pertaining to the first goal, how the *language faculty* can be studied *scientifically*.

The latter aim is directly related to how we understand the term "scientifically." We can understand the term as more or less equivalent to "systematically," in the sense of making observations, coming up with a generalization based on the observations, testing the validity of the generalization against additional observations, and stating the generalization in terms of certain concepts and relations. The activities in the first three parts of the course are related to this notion of *scientifically*.

There is another conception of *scientifically*, which focuses on what hypotheses lead to what predictions, and how the predictions can be tested experimentally. As noted above, it is hypothesized by Chomsky and others that all members of the human species, barring any serious impairment, share the core properties of the *language faculty*. According to this view, every adult speaker of a human language shares crucial properties of the *language faculty*. One can therefore ask: What kind of *hypotheses* can we put forth about properties of the *language faculty* (which is necessarily embodied in an individual)? What kind of *predictions* (about an individual) can we make based on such *hypotheses*? What kind of *experiments* can we conduct (on an individual) to test our *predictions*? How could we obtain results of our experiment (on an individual) in line with our predictions and replicate them (on any other individual)? (Given the hypothesis that all members of the human species share the core properties of the *language faculty*, experimental results on an individual should be replicable with any other individual, regardless of the "languages" they speak.)

During the course of the semester, you will be asked to participate in on-line experiments, and "Experiment Project", which is closely related to the on-line experiments, is a big part of the course. The participation in the on-line experiments is meant to provide some preliminaries for understanding our answers to the above-mentioned questions, in relation to your own *language faculty*, and the Experiment Project is meant to deepen the relevant understanding. To help you understand the nature of our experiment, we discuss a couple of things that do not seem to be related to our experiment: (i) the viewing of a 3-D image out of a (random-dot) stereogram and (ii) the detection of gravitational waves.

You will learn, perhaps to your surprise, that it is possible to study the *language faculty* in a way very close to physics.

The lectures, the Lab activities, assignments, etc. are all meant to help you understand what is intended by the preceding remarks. As a concrete “measuring stick” for your understanding, Chomsky’s essay “[The Galilean Challenge](#)” is included in the readings. At the beginning of the semester, you will most likely have only a very vague understanding of its content. But your understanding should improve as the semester goes by. By the end of the semester, you should have a fairly good understanding of the main point(s) of the essay and more.

The course is designed to help you:

- Gain a *scientific* understanding of human language as a system of complex mental computation.
- Appreciate how much you know, tacitly and unconsciously, as a native speaker of a human language.
- Understand the universal aspects of what underlies our ability to relate linguistic sounds/signs to meaning.

As a most important general point of the course, I would like to emphasize the importance of rational/scientific reasoning, which is of critical importance in order for an individual to live a life that they feel is meaningful, worthwhile, etc., and for an individual to contribute to the survival and the advancement of the human species, especially in light of what we are currently facing globally.

Course materials, assignments, and other content will be posted at Blackboard.

It is your responsibility to check Blackboard regularly.

You must make sure to receive email notification from Blackboard.

All the due dates are provided on the syllabus. **Do not** expect to receive reminders about the due dates for various assignments.

If we make any changes to the due dates and other parts of the syllabus, that will be announced at

Readings

Reading assignments for each week are listed in the schedule given below. The relevant reading materials will be available in advance on Blackboard (Content>Readings).

Course requirements and Grades

- Three Tests. They are “open-book”; you can consult with your notes during the test. The use of electronic devices, however, is not allowed. Each Test counts 10 points for the course grade. Total: 30 points.
- Three Assignments. These assignments correspond to the three Tests and they serve a review purpose for each Test. Each assignment counts 10 points for the course grade. **The assignments are due 11:00 am on the day of the Review Session**, as stated on the syllabus. You must submit your answers at Bb by the deadline. **Having written down the answers elsewhere by the deadline will not earn you points for the assignment. The scores for each assignment will be visible shortly after the review session.** Total: 30 points.
- You will be required to participate twice in on-line Experiments. The FULL participation each time will count 5 points for the course grade. If you do not follow the instructions fully, including the experiment-registration, you will not get the full points. Among the instructions is that you **should not participate in the on-line experiments during the time period of the lecture or the lab session** unless otherwise instructed. When you register for the Experiments, make sure to **use your name as it appears at Blackboard (i.e., your name that appears at the top-right corner of your screen)**. The deadline for the Experiment-participation assignments are stated on the syllabus. Total: 10 points.
- There will be Experiment Project. You will learn how to carry it out in lectures and Labs, and you must submit your Experiment Project report at the end of the semester. The deadline for the submission will be announced later. Total 30 point.

$$30+30+10+30=100$$

—For the Assignments, make sure that you press the 'Submit' button when you are ready to submit your answers . If you do not see the page with the 'Submit' button, you must contact your TA immediately. For each Assignment (but not for the Experiment-participation assignments), you will see your score shortly after their due dates. If you do not see your score by the end of the following day, and if you think that is an error, you should contact your TA. If you do not receive our reply to your email, assume that your email has not reached us, and you should try to contact us again.

—If the Blackboard does not receive your answers for an assignment as required, your score will be zero for that assignment.

—Toward the end of the semester, you will begin to see your interim % score for the course by clicking “All” (instead of “Graded”) at “My Grades.” The information that you see by clicking “All” at “My Grades” may contain information from previous semesters. If that happens, you should just check the interim score that is accompanied by the correct information about LING110 this semester.

Course grades will be determined based on the following scale.

- A 94 or higher
- A- 90 or higher and lower than 94
- B+ 87 or higher and lower than 90
- B 84 or higher and lower than 87
- B- 80 or higher and lower than 84
- C+ 77 or higher and lower than 80
- C 74 or higher and lower than 77
- C- 70 or higher and lower than 74
- D+ 67 or higher and lower than 70
- D 64 or higher and lower than 67
- D- 60 or higher and lower than 64
- F 59 and below
- C- or higher counts as Pass for Pass/Non Pass.

The cut-off points above may be adjusted, depending upon the overall scores of students.

Important Clarification regarding what you see under Grade Center at Blackboard:

The figure given under "Possible Points" for each column at the Grade Center at Blackboard is **not necessarily the same** as the percentage point given above for each task. For example, the percentage points for each Review Assignment is 4 points for the course grade, but you may see a different figure under "Possible Points" for the column for a Review Assignment. Suppose that "Possible Points" for "Review-HW-1 is 11. This means that the maximum points you can get for the first Review-Assignment is 11, which would translate to 4 points for the course grade. If you get 8 out of 11 in the first Review-Assignment, you will get $4 \times (8/11) = 2.91$ points for the course grade. When you begin to see an interim course grade in the middle of the semester, the figure is based on the points for the course grade, not based on the "actual points" you got in various tasks. You sometimes have to convert the "actual points" to the percentage points for the course grade, as explained above.

Discussion/Lab Sections

Discussion/Lab sections meet weekly at the time specified in your class schedule. They are mostly devoted to various Lab activities that will supplement the lectures. But, the main points of the entire course will be emphasized throughout the semester in the Discussion/Lab sections.

If your Lab meets on Fridays, the first Lab section will be on January 20 (Fri). If your Lab meets on Mondays, your first Lab will be the following Monday (January 23).

Homework and Assignments

All of the Assignments and Experiment-Participation must be turned in or completed by the due date/time. All the due dates/time are specified on the syllabus. Late assignments are not accepted without a very good reason (e.g. demonstrable illness or a life-changing event).

Important: If you know that you need to turn in or complete your assignment late or if you know you will have to miss a Test, you must talk to the instructor **well ahead of time** and obtain the permission to complete the relevant task (including the taking of a Test) later than the scheduled date/time. **You must have a very good reason for this (e.g. demonstrable illness or a life-changing event).** Your reason for the late submission must be accepted by the instructor as a very good reason.

Your continuing to be registered for the course will be regarded as indicating that you have read this syllabus **carefully and **have agreed to the policies** stated above regarding grading, make-ups, etc. Any deviation from what is stated on the syllabus will be clearly stated and posted at Blackboard. I.e., unless clearly stated and posted at Blackboard, you should assume that we follow what is stated on the syllabus.**

Academic Integrity

We expect that all students will uphold the USC Student Conduct Code. Because violations of the code harm every other student in the class, the instructors will aggressively prosecute any student who cheats on a test/quiz or homework/assignment or who allows others to cheat on a test/quiz or homework/assignment.

- Please Note: SCampus 2020-2021 ("Class Notes Policy" under "Academic Policies"): "Notes or recordings made by students based on a university class or lecture may only be made for purposes of individual or group study, or for other usual non-commercial purposes that reasonably arise from the student's membership in the class or attendance at the university. This restriction also applies to any information distributed, disseminated or in any way displayed for use in relationship to the class, whether obtained in class, via email or otherwise on the internet, or via any other medium. Actions in violation of this policy constitute a violation of the Student Conduct Code, and may subject an individual or entity to university discipline and/or legal proceedings."

Students with Disabilities

Students who need to request accommodations based on a disability are **required to register each semester** with the Office of Student Accessibility Services (OSAS). In addition, a letter of verification to the instructor from OSAS is needed. Please make sure that the letter is delivered to me or the TA **as early in the semester as possible**. The phone number for OSAS is (213) 740-0776.

The Student Resources page is found at:

<https://sites.google.com/view/uscpdongroup/usc-support>

Schedule¹

Week	Date	Lecture and Readings
Week 1	1/10	Course introduction: syllabus and the main points of the course Readings: <i>Introducing Chomsky</i> , pp. 3-19; Chomsky, " The Galilean Challenge "
	1/12	An Introduction to language faculty science Readings: <i>Introducing Chomsky</i> , pp. 3-19; <i>The Language Instinct</i> , pp. 15-24; Chomsky, " The Galilean Challenge "
Week 2	1/16 (Mon)	Holiday
	1/17	Film "Colorless Green Ideas" Readings: <i>Introducing Chomsky</i> , pp. 3-19; <i>The Language Instinct</i> , pp. 15-24; Chomsky, " The Galilean Challenge "
	1/19	Morphology (I): Word-internal structure, derivational morphology: <i>unlockable</i> and <i>unhappiness</i> ; Table 4.11 of the reading; the notion of "head"; roots and stems; bound and free morphemes; affixes, suffixes, prefixes. Reading: "Morphology: The Study of Word Structure," ODA Ch. 4, pp. 111-136, 143-146.
Week 3	1/24	Morphology (II): Inflectional morphology: allophones, productivity. Reading: "Morphology: The Study of Word Structure," ODA Ch. 4, pp. 111-136, 143-146.
	1/26	Morphology (III): Compounds: productivity, compounds vs. phrases. Reading: "Morphology: The Study of Word Structure," ODA Ch. 4, pp. 111-136, 143-146.
Week 4	1/31	Morphology (IV): Content words and function words, language acquisition Reading: "Morphology: The Study of Word Structure," ODA Ch. 4, pp. 111-136, 143-146.
	2/2	Review (Assignment 1 Due: 11:00am)
Week 5	2/6(Mon)	Deadline for First Experiment-Participation: 7am

¹ I reserve the right to make necessary changes to this schedule. Changes will be announced in class and/or on Blackboard.

	2/7	Test 1
	2/9	The Sound of Words: Phonetic: places of articulation (bi-labial, labio-dental, inter-dental, alveolar, palatal, velar), manner of articulation (stops, fricatives, affricates, nasals), voicing, distinct dimensions of vowel articulation.
Week 6	2/14	The Meaning of Words (I): Semantic competence and semantic relations Reading: Fromkin et al. (Ch. 7 pp.371-379) (The site will be open for the Second Experiment-Participation.)
	2/16	The Meaning of Words (II): Entailments, Quantifiers and Set Theory Reading: Fromkin et al. (Ch. 7 pp.371-379)
Week 7	2/20 (M)	Holiday
	2/21	The Meaning of Words (III): Entailments, Quantifiers and Set Theory (continued) Basically for the preparation for the discussion of the deduction and the contrapositive in Part 4. I will have to think about this. Reading: Fromkin et al. (Ch. 7 pp.371-379) + something additional??
	2/23	The Meaning of Words (IV): Meanings of Pronouns; Structures and Communication
	2/23	Deadline for Second Experiment-Participation: 7am
Week 8	2/28	Review (Assignment 2 Due: 11:00am)
	3/2	Test 2
Week 9	3/7	What is checked in the on-line experiments. Reading: List of Experiments and Sentences,
	3/9	What would be checked in “follow-up” experiments.
Spring Recess	3/14	No Class
	3/16	No Class
Week 10	3/21	Re-introduction to language faculty science. The language faculty and the basic scientific method, definite predictions and definite experimental results. Readings: Feynman <i>The character of physical law</i> (pp. 150-153) , Hoji and Plesniak 2022 “Language Faculty Science and Physics” Section 1.2 (pp. 3889-37)

	3/23	What is behind the experiments: Hypotheses about the language faculty of an individual, Merge, purely hierarchical mental representations, and the structural relation of c-command. Readings: Chomsky “The Galilean Challenge,” Hoji “Galileo’s Other Challenge”. Optional readings: Lasnik 1990, <i>Syntax</i> , pp. 5-17
Week 11 ²	3/28	Toward the detection of c-command effects and an initial illustration of experimental results; experiments being about an individual. how to read the result graphs and the result charts . Readings: List of Experiments and Sentences, Experimental results (in Excel).
	3/30	Experiment Project, explained. Experimental results: Correlations of judgments and Sub-preliminary experiments. Readings: Experimental results. Feynman <i>The character of physical law</i> (pp. 150-153), Feynman <i>The Pleasure of Finding Things Out</i> (pp. 22-23).
Week 12	4/4	Experiment Project: Reports and Discussion.
	4/6	Experiment Project: Reports and Discussion.
Week 13	4/11	Predictions about an individual and experimental replication in language faculty science; experiments in other languages; native vs. non-native speakers; factual knowledge and comprehension, experiment and demonstration. Readings: Einstein “Physics and Reality”, Einstein “Foreword” Optional readings: Hoji “Galileo’s Other Challenge,” Hoji 2015 <i>Language Faculty Science</i> , pp. 313-318. Plesniak 2022 “ Building the Linguistic Telescope ” (pptx).
	4/13	Various factors affecting speaker judgments.
Week 14	4/18	Experiment Project: Reports and Discussion.
	4/20	Experiment Project: Reports and Discussion.
Week 15	4/25	Review Session (Assignment 3 due 11:00am).
	4/27	Last Lecture: Review of the main points of the course and discussion. Detection of gravitational waves and detection of c-command effects; language faculty science and the brain. Readings: Penrose 2004: Section 1.4.

² The reading materials for Weeks 11-13 and their order might be slightly altered later.

References

The relevant parts of each of the following will be posted at Blackboard or available on-line as specified.

- Anderson, S. 2010. "How Many Languages Are There In The World, Linguistic Society of America." (Review Assignment #1 will make reference to this.)
- Chomsky, N. 2017. "[The Galilean Challenge](#)," *Inference: International Review of Science*, Vol. 3. Issue 1.
- Einstein, A., 1936. *Physics and Reality*. The Journal of the Franklin Institute; Reprinted in: *Ideas and Opinions*. 1955. Crown Publishers, New York. (The assigned reading is pp. 293-295.)
- Einstein, A., 1953/1967. "Foreword to the English translation of Galileo's Dialogue Concerning the Two Chief World Systems, University of California Press. (The assigned reading is pp. xvii-xix)
- Feynman, R. 1965/1994. *The character of physical law*. New York: The Modern Library. (The Feynman lectures based on which this book was prepared can be viewed on-line. If you Google "Feynman Messenger Lectures," you will find the seven lectures. The assigned reading is pp. 150-153, which is part of his seventh lecture ("Seeking New Laws") available at: http://www.youtube.com/watch?v=MIN_-Flswy0 (last accessed on 1/7/2016). The content of pp. 150-151 starts around 14:40 of that video.)
- Feynman, R. 1999. *The Pleasure of Finding Things Out*, Basic Books, New York. (The assigned readings are pp. 22-23 and pp. 108-109. What is in pp. 22-23 can be viewed at: <http://www.youtube.com/watch?v=IaO69CF5mbY> (last accessed on 1/7/2016).)
- Fromkin, V. (Editor) 2000. *Linguistics: An Introduction to Linguistic Theory*. Blackwell Publishers Inc. Malden, MA. (The assigned reading is pp. 371-379.)
- Hoji, H. 2015. *Language Faculty Science*. Cambridge University Press. (The assigned reading (optional) is pp. 313-318.)
- Hoji, H.. 2017. "[Galileo's Other Challenge](#)." *Inference: International Review of Science*, Vol. 3. Issue 2.
- Hoji, H. and D. Plesniak. 2022. "Language Faculty Science and Physics", in *The Theory and Practice of Language Faculty Science*, H. Hoji, D. Plesniak, Y. Takubo (eds.) De Gruyter Mouton.
- Justice, P. *Relevant Linguistics*. Chicago: Chicago University Press. Relevant parts on Blackboard. (The assigned readings are pp. 13-24, pp. 34-42, and pp. 46-47.)
- Lasnik, H. 1990. Syntax, in *Language: An Invitation to Cognitive Science Volume 1* (D. N. Osherson and H. Lasnik (eds.)), A Bradford Book, The MIT Press. (The assigned reading (optional) is pp. 5-17.)
- Maher, J. and J. Groves. 1998. *Introducing Chomsky*. Totem Books. (The assigned reading is pp. 3-19.)

- O'Grady, W., M. Dobrovolsky, and M. Aronoff, *Contemporary Linguistics: An Introduction*, 2nd edition. New York: St. Martin's Press (ODA). (The assigned readings are pp. 111-136 and pp. 143-146.)
- Penrose, R. 2004. *The Road to Reality: A Complete Guide to the Laws of the Universe*, Jonathan Cape. (The assigned reading is Chapter 1: Section 1.4, but you will find it useful to read the rest of the chapter.)
- Pinker, S. *The Language Instinct*. New York: William Morrow and Company. (The assigned reading is pp. 15-24.)
- Plesniak, D. 2022. "[Building the Linguistic Telescope](#)". February 2022. Talk given at the Second Annual Workshop on Language Faculty Science. Online.