

LING254: Topics in Linguistics; Models of Syntax Learning and Learnability Winter 2021

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Time: M/W 10:00am-12:00pm, via Zoom

Course Description

This proseminar will discuss models of early syntax acquisition from two different literatures: language acquisition/learnability models in linguistics, and statistical/distributional learning models in computational cognitive science. These literatures have historically made different assumptions about the roles of prior knowledge and mechanisms for learning from data in the early stages of acquiring a grammar. Parameter-setting and other learnability models in linguistics traditionally conceive of learning as mapping input to a rich hypothesis space of possible grammars or grammatical primitives, in order to identify a specific grammar for the language of experience. A challenge for these models is explaining how learners use their data in this process: these grammatical hypotheses make predictions at the level of abstract categories and dependencies, but learners must identify the specific expression of these categories and dependencies in their input. Distributional and statistical learning models traditionally conceive of learning as a process of gradual generalization from highly specific representations to more abstract ones. A challenge for these models is specifying the biases that allow learners to generalize in the right way in the face of indeterminate evidence, and arrive at the rich grammatical knowledge that mature speakers demonstrate.

Our goals in this course are to bring these approaches in conversation with each other, ask how they relate to empirical developmental findings, and ask how they might jointly inform our theories of grammar development. We will focus on models investigating the basic syntactic phenomena acquired very early in development: grammatical categories, word order, argument structure, phrase structure, and movement dependencies. Although syntax will be the case study, this proseminar is intended to be broadly accessible to anyone interested in bringing computational models to bear on language acquisition theories. No prior background in computation is needed; we'll discuss the relevant computational approaches as we go.

Course Website

The course schedule and readings will be made available on the course CCLE page.

Course Requirements

- For **2 credits**: class participation and paper presentation (100%)
- For **4 credits**: class participation and paper presentation (50%), final paper (50%)

Class Participation and Paper Presentation

This is a discussion-based seminar, which means you'll be asked to participate actively in class. This requires thoroughly reading and digesting the assigned readings ahead of time, and being prepared to discuss your thoughts and questions about those readings. Zoom is not an ideal medium, but we'll work together to make it a supportive environment for productive discussion. Turning on your camera whenever possible will make a huge difference to facilitate this (and will make class a more rewarding social experience!), but the chat function can also be used if that option isn't available for you. All discussion is expected to be respectful and inclusive towards the different identities, backgrounds, and perspectives of your fellow students and me.

Once during the quarter, you will also be asked to lead class discussion (alone or in pairs) on one of the assigned or optional readings. You should aim to briefly summarize for us the paper's key points and findings, and provide a few critical questions for discussion fodder.

Final Paper

Students taking the course for 4 credits will write a short paper (about 8-12 pages, double-spaced) on a topic relevant to the course. The parameters for this paper are flexible. Some possible ideas:

- Proposing a specific way to extend an existing model to account for a different linguistic phenomenon, or to test different assumptions about learning
- Implementing a mini version of an existing or new model in a particular learning domain
- Critically reviewing a body of computational literature in order to highlight what specific questions it addresses and how it bears on broader questions in language acquisition theory

A one-page proposal (a brief description of the topic you have chosen and a list of references) is due on **Feb. 10**. You are strongly encouraged to schedule appointments with me throughout the quarter to discuss topic ideas and receive feedback on your proposal or your work in progress. During the last week of class, you will give a brief presentation of your paper to the rest of the class. Final papers are due on **Mar. 17**.

Course Schedule

Here's a tentative schedule of topics and readings, subject to change and reorganization.

<i>Week</i>	<i>Date</i>	<i>Topic</i>	<i>Readings</i>
1	1/4 1/6	Introduction: learning & learnability	J.A. Fodor 1966; Gallistel 2006; Morgan 1986 Ch. 2 (optional: Chomsky & Fodor in Piatelli-Palmerini 1980)
2	1/11 1/13	Parameters	J.D. Fodor 1998; Sakas 2016 (optional: Gibson & Wexler, 1994)
3	1/18	<i>No class: MLK Day</i>	
	1/20	Parameters	Yang 2002 Ch. 2; Legate & Yang 2007
4	1/25 1/27	Semantic & syntactic bootstrapping	Pinker 1984 Ch. 2; Gleitman 1990; Abend et al. 2017 (optional: Pearl & Goldwater 2016)
5	2/1 2/3	Argument structure	Perfors, Tenenbaum & Wonnacott, 2010; Perkins, Feldman, & Lidz under review (optional: Russell & Norvig 2010, Chs. 13-14)
6	2/8 2/10	Categories	Redington, Chater, & Finch 1998; Mintz 2003 (optional: Cartwright & Brent 1997; Chemla et al. 2009)
7	2/15	<i>No class: Presidents' Day</i>	
	2/17	Prosodic bootstrapping	Christophe et al. 2008; Gutman et al. 2015
8	2/22 2/24	Phrases	Thompson & Newport 2007; Saffran 2001; selections from McCauley & Christiansen 2019
9	3/1 3/3	Dependencies	Wang, Zevin & Mintz 2019; Perkins & Lidz, under review; Stabler 1998 (optional: Perkins 2019, Ch. 5)
10	3/8 3/10	Statistical learning & UG, paper presentations	Perfors, Tenenbaum & Reiger 2011; Berwick et al. 2011 (optional: Clark & Eyraud 2006; Lidz & Gagliardi 2015)

Course Procedures and Policies

Academic Integrity

All members of the UCLA academic community are expected to maintain standards of academic honesty, specified by the [UCLA Student Conduct Code](#). It is important for you to know what constitutes improper academic conduct and the consequences for this misconduct. What academic integrity means in the context of this course: students are permitted, and indeed encouraged, to discuss course material and assignments together. However, all work you submit in this course must be written by you individually, in your own words. Ideas of other authors that we are reading in this course, or that you read on your own, must be properly cited. Any idea or information that is not cited is assumed to be your individual contribution; otherwise it is plagiarism. If you're having any trouble understanding material or are experiencing any extenuating circumstances that are affecting your ability to participate in class or keep up with assignments, please reach out to me and I will be more than happy to help.

Diversity and Self-Identification

It is my intent that students from all backgrounds and perspectives be well served by this course and that the diversity that students bring to this class be viewed as a resource and strength. I am committed to fostering a learning environment that honors your identities, including race, ethnicity, gender, sexuality, religion, national origin, age, and dis/ability. Presented materials and discussion are meant to be respectful of diversity and different identities. Your suggestions are encouraged and appreciated. Please let me know of ways to improve the effectiveness of the course for you personally or for other students or groups.

I invite you to tell us how you want to be referred to both in terms of your names and your pronouns. All aspects of your identity are your choice to disclose and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for your fellow colleagues.

Students with Disabilities

Students needing academic accommodations should contact the Center for Accessible Education (CAE) at please caeintake@saonet.ucla.edu or (310) 825-1501. When possible, students should contact the CAE within the first two weeks of the term as reasonable notice is needed to coordinate accommodations. For more information, visit www.cae.ucla.edu.

Mental Health and Student Support

Graduate school can be difficult, and many students find themselves struggling at some time or another. But you don't need to struggle alone: there are many people at this university whose job it is to help students with all kinds of circumstances. Some of these resources include [Counseling and Psychological Services \(CAPS\)](#), the [Ashe Student Health and Wellness Center](#), the [Consultation and Response Team](#), the office of [Equity, Diversity and Inclusion](#). If you are experiencing challenges that are having an impact on your participation in this course, please talk to me and we can work together to create a plan. If you're not comfortable talking to me directly, please reach out to an advisor in the department or to other support services on campus.

References

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