Logic in Linguistics

Linguistics 97a, Spring 2016

Instructor: Teodora Mihoc
Contact: tmihoc@fas.harvard.edu
Office hours: by appointment

Class time: Tue 3-5 pm
Class location: Boylston 105
Website: https://canvas.harvard.edu/courses/9887

Course description

This course will explore some ways in which logic is used in linguistics, particularly, in semantics.

The course has two main goals.

(1) To acquaint students with some of the tools of formal logic, especially as they are used in linguistics. Thus, the course will provide practice not only in the form of assignments but also in the classroom.

(2) To encourage students to reflect on the relation between logic(s) and linguistics; an individual project will provide room for such reflection.

Prerequisites

An introductory course in linguistics.

Requirements and grading

Students are expected to prepare before each class by doing the assigned readings; to attend every class; to solve 4 problem sets assigned in weeks 1-4 / to solve 3 problem sets and give a presentation on certain topics assigned by the instructor; and to work on an individual project where they explore further uses of logic in linguistics. The grade breakdown is as follows:

10%	Attendance and class participation; doing the readings (see Readings column below).
60%	Four problem sets, 15% each. Late submissions will be accepted up to 24 hs after the due date but will be penalized 50%. There is an option to replace one problem set with a presentation on certain topics - contact instructor for details.
15%	Presentation of individual project.
15%	Short paper summarizing findings of individual project.

Tentative schedule

Week	Date	Topic	Readings	Other
1	TBD	Sets, relations, and functions	[3, chs. 2-3]	pset 1 assigned
2	TBD	Propositional logic	[3, ch. 4]	pset 1 due; pset 2 assigned
3	TBD	Extensional lambda calculus	[3, chs. 5-6]	pset 2 due; pset 3 assigned
4	TBD	Intensions	[3, ch. 7]	pset 3 due; pset 4 assigned
5	TBD	Quantifiers	[3, ch. 9]	pset 4 due
				meeting with instructor
6	TBD	Student presentations		presentation due
7	N/A	N/A	N/A	final paper due

Aside from the readings in the table, also see [1], for an older but very accessible introduction to the topic, and [2], for a classic reference. Both these resources focus mostly on the formal tools.

The folder *Perspectives* from our course website on Canvas will be hosting resources that help keep in mind that the connection between Logic and the study of meaning in natural language is and can be much richer and more interesting than it may appear from a textbook.

References

[1] Allwood, J., Andersson, L.-G., and Dahl, O. (1977). *Logic in linguistics*. Cambridge University Press.

[2] Partee, B., Ter Meulen, A., and Wall, R. (1990). *Mathematical methods in linguistics*. Springer Science & Business Media.

[3] Potts, C. (2007). Logic for linguists. Presession course, LSA Institute 2007, Stanford, July 1-3.