

## **Probabilities, Logic, and Pragmatics.**

**Benjamin Spector**

**S2**

**24 hours (2\*12)**

**Time slot:** to be determined (but not at the same time as Semantics 1, and not during the Thursday Linguae seminar)

### **Description:**

Linguistic interpretation involves many interacting factors: lexical meaning, linguistic structure and specific linguistic knowledge, hypotheses about the speaker's state of mind, assumptions about speakers' communicative goals, prior beliefs about the world. *Pragmatics* is concerned with a) the way in which interpretation depends on context, and b) all the aspects of meaning which are not grammatically encoded in linguistic forms but depend in part on a reasoning about speaker's communicative goals. There are two relatively independent approaches to *pragmatic inferences*. The formal semantics/pragmatics tradition, which uses tools from formal logic, has provided a *rich typology of linguistic inferences, and specific formal models that account for their properties*. More recently, probabilistic, decision-theoretic approaches have been developed, and have become quite influential in cognitive science. The goal of the class is to introduce students with the major literature in both traditions (which these days interact quite a lot), with a specific focus on the division of labor between semantics and pragmatics. We will present and discuss formal models of pragmatic inferences (using both logic and probabilistic modeling) and experimental psycholinguistics papers in which these models are tested.

### **Prerequisites:**

Either

- Having taken an intro class to logic or a class in formal semantics corresponding roughly to Semantics 1, and having some basic knowledge of probabilities (high-school level)

OR

- Having a relatively solid background in maths (no need to be a maths major, though!)

OR

- Talk to the instructor!

### **Syllabus/Topics (probably to be revised)**

#### **Classes 1 – 2**

Modeling pragmatic inferences with logic/formal semantics tools [main readings: Sauerland 2004, Chierchia et al. 2012]

#### **Class 3**

Classical game-theoretic approach to communication: signalling games and pragmatic inferences (Rothschild 2013)

#### **Classes 4 – 5**

The baseline *Rational Speech Act* model of pragmatics [main reading: Bergen et al. 2016, on-line textbook <https://www.problang.org/>]

**Class 6**

The role of priors in pragmatic inferences (Main reading: Degen et al. 2015, Cremers, Wilcox & Spector 2023).

**Classes 7-8**

Vagueness and Probabilistic reasoning: gradable adjectives, approximators (Readings: Lassiter & Goodman 2017, Qing and Franke 2014, Egré, Spector, Mortier, Verheyen 2023).

**Class 9**

Disjunction, lexical uncertainty, comparisons of approaches (main reading: Potts & Levy 2015)

**Classes 10-11**

Introducing the notion of 'Question under discussion', applications to metaphors and hyperboles, plural definites (main readings: Kao et al. 2014a,b, Spector 2017). Interaction of priors with questions under discussion.

**Class 12**

Presentation/Discussion of projects