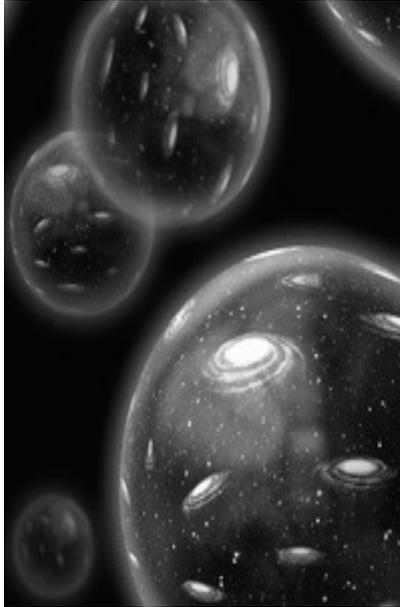


## Formal Semantics (LING 620): Syllabus



*Possible worlds*



*Interrogatives*



*Tense (and Aspect)*

Linguistics 620  
Tuesday, Thursday 10:00 - 11:15  
Room: ILC N458  
Course Instructor: Seth Cable

Course Website:  
<http://people.umass.edu/scable/LING620-SP18/>  
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### 1. General Overview

This course is a continuation of Linguistics 610. Students will receive continued, advanced introduction to various foundational issues and results in formal semantics.

This course will provide a thorough introduction to the phenomenon of ‘intensionality’ in natural language, as well as the core techniques and results of intensional (possible-world) semantics. In particular, we will examine in depth the semantics of sentential complements, the *de re* / *de dicto* distinction, and modal auxiliaries. We will then employ the analytic tools gained from these studies to explore the semantics of interrogative clauses and tense/aspect morphology.

Students will gain exposure to primary literature in the field of semantics through (i) key course readings, (ii) a series of in-class presentations, and (iii) a final individualized research project.

## 2. Course Requirements

### 2.1 Problem Sets

There will be approximately 6 problem sets, assigned during the first half of the course. These problems sets will be assigned on a Thursday, and due the following Thursday. In addition, each problem set will be discussed on the Thursday on which it is due.

### 2.2 In-Class Presentations

Each student will be required to present one of the following papers in class. Each of these papers can be found on the course Moodle.

- Pearson, Hazel (2015) “The Interpretation of the Logophoric Pronoun in Ewe.” *Natural Language Semantics* 23: 77-118
  - To be presented after the unit on the *de re / de dicto* distinction

Summary:

Some languages contain so-called ‘logophoric pronouns’, which are restricted to propositional attitude complements and must refer to the holder of the attitude. Based upon original, in-depth semantic fieldwork, Pearson develops a formal analysis of such pronouns in the Ewe language. The analysis builds upon recent advances in our understanding of (i) the formal semantics of infinitival (Control) complements, and (ii) the syntax/semantics of *de re* readings.

- Keshet, Ezra (2011) “Split Intensionality: A New Scope Theory of *De Re* and *De Dicto*.” *Linguistics and Philosophy* 33: 251-283.
  - To be presented after the unit on the *de re / de dicto* distinction

Summary:

In class, we will explore problems for – and develop alternatives to – the classic ‘scope theory’ of the *de re / de dicto* ambiguity. However, Keshet (2011) provides evidence that the ‘scope theory’ may indeed be on the right track, and shows how it can be reconciled with the challenges discussed in class.

- Pearson, Hazel (2016) “The Semantics of Partial Control” *Natural Language and Linguistic Theory* 34: 691-738
  - To be presented after the unit on the *de re / de dicto* distinction

Summary:

Certain infinitival (Control) complements allow an interpretation where the implicit subject is a *superset* of the matrix subject (e.g., “John wanted to meet on Sunday”). Such structures/interpretations are called ‘Partial Control’ (PC). Such structures have long presented challenges to syntactic and semantic analyses of infinitival complements. Pearson develops an analysis of PC constructions, one that predicts a correlation between the possibility of PC and the temporal interpretation of the infinitival.

- Rullmann, Hotze, Lisa Matthewson, and Henry Davis (2008) “Modals as Distributive Indefinites.” *Natural Language Semantics*; 16: 317-357.
  - To be presented after the unit on modal auxiliaries

Summary: In class, we will develop a theory of modal auxiliaries (e.g. ‘may’, ‘can’, ‘must’) whereby their so-called ‘modal base’ is contextually determined while their ‘modal force’ is fixed in the lexicon. Rullmann *et al.* (2008) argue that in some languages the inverse of this holds: the modal base is fixed in the lexicon while the force (appears to) vary with the context. A formal semantics is developed that can capture this point of cross-linguistic semantic variation.

- Deal, Amy Rose (2011) “Modals Without Scales.” *Language* 87(3): 559-585.
  - To be presented after the unit on modal auxiliaries

Summary: **It would be best if this paper were presented after a presentation of Rullmann *et al.* (2008).** Deal shows that Nez Perce contains a modal which – like those discussed by Rullmann *et al.* (2008) – seems to function as either a strong or weak modal. However, Deal demonstrates that the modal in question is actually always a weak modal; it’s ability to be used in ‘strong contexts’ is simply due to the language’s lack of a corresponding strong modal. These results could cast doubt upon Rullmann *et al.*’s (2008) claim that the modals of some language have a context dependent modal force.

- von Fintel, Kai and Anthony Gillies (2010) “*Must...Stay...Strong!*” *Natural Language Semantics* 18: 351-383.
  - To be presented after the unit on modal auxiliaries

Summary: In class, we will develop a semantics for modal auxiliaries whereby the sentence in (i) (asymmetrically) entails the sentence in (ii).

- (i) It must be raining.
- (ii) It is raining.

However, people have sometimes voiced the intuition that the *opposite* holds; (ii) actually (asymmetrically) entails (i). This intuition has lead some to propose rather different semantics for modal auxiliaries. von Fintel & Gillies (2010) discuss these theories and the data used to motivate them. They argue, on the basis of novel data, that our in-class theory is correct – (i) *does* (asymmetrically) entail (ii) – and they explain why it might sometimes seem to us to be otherwise.

- Lassiter, Daniel (2016) “*Must, Knowledge, and (In)directness.*” *Natural Language Semantics* 24: 117-163.
  - To be presented after the unit on modal auxiliaries

Summary: **It would be best if this paper were presented after a presentation of von Fintel & Gillies (2010).** This paper is a critical response to the work of von Fintel & Gillies (2010). Lassiter argues that corpus and experimental evidence challenge the empirical claims of von Fintel & Gillies, and support a semantics whereby *must S* does not entail *S*. (*Students presenting this paper are asked only to cover up to Section 5.*)

**Please let me know by February 5<sup>th</sup> which paper you intend to present.** We will then schedule individual meetings to discuss the paper and your plans for the presentation. *I will help all students to obtain in advance the background that they will need for their chosen paper.*

### 2.3 Final Project

The third requirement for this course is a final project. The final project must be a squib-length piece of original research, incorporating novel empirical argumentation. Ideally, it will develop and defend a novel theoretical analysis. However, it would also be acceptable for the project to be a critical discussion of some other works/analyses, as long as that discussion is based upon novel data and/or arguments. **In general, the final project must have some original content as its focus; it cannot simply be a presentation/summary of a paper.**

**The final paper must be turned in to me by Friday May 11<sup>th</sup>, so that I have enough time to evaluate it before May 15<sup>th</sup> (the date that grades are due).**

**I strongly encourage students to begin meeting with me ASAP to discuss ideas for their final project.**

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### 3. Textbook and Readings

The course does not require the purchase of a textbook. The first half of the course, covering intensional semantics, will build upon the following downloadable work:

- von Fintel, Kai and Irene Heim (2011) *Intensional Semantics*. Manuscript. MIT.  
Available at: <http://mit.edu/fintel/fintel-heim-intensional.pdf>

There will also be various additional readings – both required and optional – taken from the primary literature. These readings can be found on the course Moodle.

Our study of interrogatives and tense/aspect will be based strictly upon selected primary literature. These have also been posted to the course Moodle.

## 4. Schedule of Topics

### 4.1 Review of Extensional Semantics

We'll begin in the first week by briskly reviewing the essentials of extensional semantics. These lectures will mainly be focused upon various foundational concepts, especially (i) the distinction between 'extension' and 'intension', and (ii) how a system that computes 'extensions' can (in principle) deliver a theory of natural language meaning. The purpose of these review lectures is two-fold:

- (i) Students will be introduced to the specific formalism that we will employ throughout the semester (based upon Heim & Kratzer 1998)
- (ii) Foundational assumptions will be presented in a way that facilitates our introduction to intensional semantics in the second week.

### 4.2 Intensionality and Intensional Semantics

With the essentials of extensional semantics fresh in our minds, we will spend the first half of the course exploring areas where extensions are *not* enough for a semantic theory of natural language. We'll follow von Stechow & Heim (2011) in their tour of the following areas:

#### 4.2.1 Propositional Attitude Verbs

The semantics of verbs such as *believe*, *say* and *know* provide some very basic puzzles that will motivate our development of a theory of intensional semantics.

#### 4.2.2 The *De Re* / *De Dicto* Ambiguity

Sentences in which nominal expressions lie within the scope of intensional operators have long been known to exhibit a key ambiguity, classically referred to as the *de re* / *de dicto* ambiguity. We will examine this ambiguity, and we will see how certain facts lead us to a view where 'possible world variables' are an explicit part of natural language syntax.

#### 4.2.3 Modal Auxiliaries and Conditionals

The analysis of modal auxiliaries in languages like English (e.g. *may*, *might*, *can*, *must*) has been a major force in the development of semantic theory. We will develop three major aspects of what remains a widely-adopted approach to their meaning:

- a. Modal auxiliaries as quantifiers over possible worlds.
- b. The 'modal base' as a contextually-defined parameter of the meaning of modals
- c. The 'ordering source' as a second contextually defined parameter of meaning.

We will also see how this treatment of modal auxiliaries lays the groundwork for a highly influential theory of the syntax/semantics of conditional constructions.

### 4.3 The Semantics of Tense and Aspect

In languages with tense systems, verbal morphology serves to indicate whether a given event occurs within the past, present, or future of the time of speaking. We will explore the ways in which formal semantic theory can analyze these morphemes. As we will see, the path towards an understanding of these morphemes truly begins with a treatment of the way in which *embedded* tenses operate (e.g., ‘Mary said that Bill *was/is* dancing.’).

In addition to tense, many languages also exhibit a system of (grammatical) aspect, which interacts with tense in crucial ways. Roughly speaking, aspect indicates whether an event is on-going, completed, initiated, *etc.*, with respect to a particular topical time (or ‘Topic Time’). We will explore the ways in which formal semantic theory can analyze such aspectual systems, and the ways in which they interact with tense.

### 4.4 The Semantics of Interrogatives

Our semantic theory has been developed largely to handle declarative sentences like “Mary smokes.” But, declaratives are of course not the only meaningful type of sentence in natural language. For example, interrogatives like “Does Mary smoke?” or “Who smokes?” also have a meaning that we should want our semantic theory to accurately model and predict. However, given that interrogatives do not have truth-values, they therefore also do not have truth-conditions, and so it is not trivial to incorporate them into our semantic theory.

In this unit of the course, we will explore the ways in which interrogatives have been approached by formal semantic theory. As we will see, the path towards such a theory again begins with the way in which *embedded* interrogatives (e.g. *Bill knows who smokes; Bill knows whether Mary smokes*) affect the truth-conditions of larger, declarative sentences.

## 5. Specific Dates of Interest or Importance

<b>February 5:</b>	Decide on paper for class presentation
<b>March 12 – 16:</b>	No Class (Spring Break)
<b>April 17:</b>	No Class (Monday Schedule)
<b>May 1:</b>	Last Day of Class
<b>May 11:</b>	Final Papers Due
<b>May 15:</b>	Final Grades Due