Lecture 7

LCD 306: Semantics & Pragmatics

C.N. Serrano Madsen II
Queens College
CUNY

Thursday 5 March 2015

Outline

1. Administrativa
   - Examination No. 1
   - Homework Packet No. 1
   - Group Project
   - Active Role in Your Education

2. Signs and Sets
   - Set Theory

Table of Contents

1. Administrativa
   - Examination No. 1
   - Homework Packet No. 1
   - Group Project
   - Active Role in Your Education

2. Signs and Sets
   - Set Theory

Table of Contents

1. Administrativa
   - Examination No. 1
   - Homework Packet No. 1
   - Group Project
   - Active Role in Your Education

2. Signs and Sets
   - Set Theory

Exam No. 1

- Exam and corrections due today
- Exam final grade to be distributed on Tuesday 10 March
- Statistical item analysis will be completed
- Exam statistics and class ranking will distributed if there is interest

Exam

- **Exam 1 Grade**: exam 1 grade plus the extra credit for resubmission
    - Calculating grade (G_{E1}) for exam:
      $$G_{E1} = (\frac{68 - d}{68} + \frac{r}{d} \times 0.1) \times 100$$
    - d = points deduced; r = points revised and resubmitted
- **Overall Grade**: Exam 1 worth 20% of overall grade
    - Calculating impact on overall grade (I_{FG}):
      $$I_{FG} = 100 - \frac{G_{E1}}{100} \times 20$$

Table of Contents

Homework

- Homework Packet no. 1 will be returned on Tuesday 10 March
- You will be allowed to re-submit the homework packet with corrections on Thursday 12 March

- Small amount of points deducted for formatting issues

- All written assignments must be typed using 12 pt Times New Roman or 11 pt Arial font with 1 margins
- All assignments must be send in one of the following formats: .doc, .docx, .txt, .tex, .pdf, .rtf, .odt, .dot.
- Remember to cite all sources and use APA guidelines
- Homework must also include your name, class, date, and assignment.

- characters must be correctly formatted.
- No handwriting on the assignments is allowed.
- written assignments must be on 8.5x11 paper (no scratch paper)
- Stapled
- Homework that is not typed, not stapled, and/or difficult to read will not be accepted

Homework Policy

- To ensure that I can assess class on on-going basis
- We are going to change the homework policy
- Homework must be submitted via email by 15:15 on due date
- Submission will be confirmed after each exam
- Still graded for credit/no-credit
- Homework will be posted by 8:00AM day after class
- Only very small assignments if only given a day and a half to complete

Table of Contents

Group Project

- Timeline will change
  - New Presentation date: Thursday 2 April
- We will focus on the research proposal currently

Research Proposal

- Worth 20% of the Project no. 1 grade
- Must submit the proposal twice
- First submission not graded
- Final submission due Tuesday 17 March

Experiment

- Replication only
- Don't focus on the concepts but on what they did
- It is likely that you may encounter topics you don't understand
  - Ask me for clarification
  - Read Wikipedia
  - Look in textbooks
  - Do outside research

Table of Contents

Ask Questions

- If something (e.g. homework question, topics covered, definition, guidelines) it is up to you to ask
- I don't know what you do and don't know
- It is up to you to tell me where you stand
- The assumption is that if you don't say anything you understand

Table of Contents

Table of Contents

Set Theory

- Fundamental concept in mathematics
- Give that it is a mathematical primative and ill-defined, we have to just take it for granted
- "A set is a collection of objects which are called the *members* or *elements* of that set.
- If we have a set we say that some objects *belong* (or *do not belong*) to this set, *are* (or *are not*) in the set.
- We say also that sets **consist** of their elements" (Partee, 2005)

Set Theory

- Sets can consist of elements of any type
  - people
  - physical objects
  - numbers
  - signs
  - other sets
  - et cetera
- A set is abstract
- A set's members do not have to physically be collected

Set Membership

- The membership criteria for a set must in principle be well-defined, and not vague.
- If we have a set and an object, it is possible that we do not know whether this object belongs to the set or not, because of our lack of information or knowledge.
  - e.g. "The set of students in this room over the age of 21": a well-defined set but we may not know who is in it.

Set Membership

- But the answer should exist, at any rate in principle.
- It could be unknown, but it should not be vague.
- If the answer is vague for some collection, we cannot consider that collection as a set.

Set Membership

- If we have a set, then for any two elements of it, x and y, it should not be vague whether $x = y$, or they are different.
- If they are identical, then they are not actually "two" elements of it
- The issue really arises when we have two descriptions of elements, and we want to know whether those descriptions describe the same element, or two different elements.

More about Sets

- Sets can be *finite* or *infinite*.
- There is exactly one set, the *empty set*, or *null set*, which has no members at all.
- A set with only one member is called a *singleton* or a *singleton set* ("Singleton of a")

Set Notation

- Majuscule for sets: A, B, C
- Miniscule for members: a, b, c, x, y, z
- empty set: $\emptyset$

Set Notation

- b belongs to A: $b \in A$
- Both A and B are sets and B is a member of A: $B \in A$

- c does not belong to A: $c \notin A$

Set Notation

- A is a subset of B: $A \subset B$
- C is not a subset of B: $C \not\subset B$

- B is a superset of A: $B \supset A$
- B is not a superset of C: $B \not\supset C$

Homework no. 6

Exercise 10.1

List all the subsets of the following sets:

1. {a, b, c}
2. {a, {b, c}}
3. {a}
4. {a, b, { }, c}

Homework no. 6

Exercise 10.2

What is the relation (if any) between the sets $\mathfrak{A}$ and $\mathfrak{B}$ in each of these examples?

1. $\mathfrak{A}$ ={a, b, c}; $\mathfrak{B}$ ={a, b, c, d}
2. $\mathfrak{A}$ ={a, b, { }}; $\mathfrak{B}$ ={a, b}
3. $\mathfrak{A}$ ={a, b, c}; $\mathfrak{B}$ ={a, {b, c}}

Reference

- Denotation
- Selection/Formation of a set of real world objects that share some property
- The individual object have some abstract property in common
- The individual objects have in common that they are in the same set.
- A set which contains one object is still a set

$$[[A]] = \{\aleph, \beth, \gimel\}$$

- The phrase "A" picks out a set of objects *aleph*, *beth*, and *gimel*.

Reference

[[dogs]] ={Virgil, Sundae, Fudgie, Dalmie,...}

- The phrase "the dogs" picks out a set which contains all the real world dogs.

[[The president of the Unites States in 2014]]={Barack Obama}

- The phrase "the president of the United States in 2014" picks out a set which contain Barack Obama.