

Review for midterm 2

LING 200: Introduction to the Study of Language

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March 2016

Outline

- 1 Logistics
- 2 A brief review
 - Syntax
 - Semantics
 - Writing systems & the mental lexicon

A reminder

Midterm 2!

- The second midterm will be **Wednesday, March 16th** (that is, in two days!).
- The logistics for this exam are the same as for the previous one.
- The midterm will be held in this room.
- The midterm will involve written answers (not scantrons)
- ➡ So, make sure to bring some pens!
 - We will not consider regrades of exams that were written in pencil or corrected with white-out.

A reminder

Logistics:

- To speed things along, we will ask that you **bring your student ID** with you and submit it to us before the quiz starts.
 - You will be able to pick up your ID when you submit your quiz.
- **We will keep time** and make notes on the board (30, 20, 10, 5, 2 min).
- We will ask you to **leave all your belongings at the front of the classroom**.
 - Nothing other than pens and food/water can be near you.
 - In particular, if we see papers or any electronic devices near you, that will be cause for an immediate 0 on the midterm.
- As much as possible, we will try to keep one seat empty between each two students.
 - This means that we may ask you to move seats.
 - **Arriving early** will help us with these logistics and make sure that you have the full 50 minutes for the quiz.

A reminder

Materials for the midterm

- The midterm will cover material from Weeks 5-9.
 - Syntax
 - Semantics & pragmatics
 - Writing systems
 - The mental lexicon
- You are not responsible for terms, topics or issues discussed in the readings that were not also covered in class.
- The converse is *not* true. You are responsible for all topics stressed in class lectures, even if they were not stressed in the readings.
- So if you missed a class here and there, check the lecture notes on MyCourses and get class notes from classmates.

A reminder

Materials for the midterm

- Expect problems and questions of the same general type as those you tackled in conferences and in your problem sets.
 - In addition, there will be a few multiple choice questions.
- So, if there is any type of problem from one of the problem sets that you do not feel comfortable with, be sure to ask us for help.
- ➡ **My office hours:** Monday 15:00-16:30.
Extra office hours: Wednesday 11:00-12:00.
Linguistics, room 101 (see details in syllabus).
- **TA office hours:** Monday 16:30-17:30, Linguistics, room 204.
- (The rest of the slides today give an overview—but it's NOT enough to study just what's in them!)

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Word classes

Parts of speech / word class

Words can be categorized into **parts of speech**:

- **Noun (N)**: cat, happiness, realization, ...
 - **Pronoun**: I, she, mine, himself, ...
 - **Proper name**: Hadas, Colin, Don, Francesco, ...
- **Verb (V)**: laugh, realize, climb, ...
 - **Auxiliary Verb (Aux)**: helping verbs that come before the main verb in English (I **have** gone, I **will** go)
- **Adjective (ADJ)**: tall, unfortunate, furry, ...
- **Adverb (ADV)**: quickly, very, happily, ...
- **Preposition (P)**: on, under, between, ...
- **Determiner (Det)**: a, the, this, every, two, ...
- **Conjunction (Conj)**: and, but, or, ...

Word classes

Tests for word class membership

Words can be categorized into **parts of speech**:

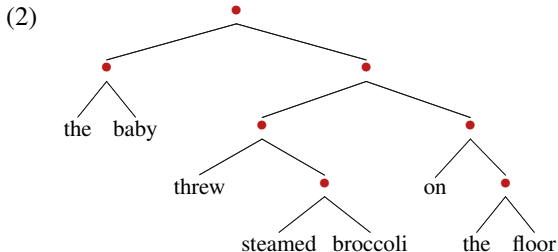
- A **morphological** test: affixes only attach to certain word classes.
- For example, any word that can take plural -s is a noun:
 - businesses, dogs, teachers, theories, ...
- A **syntactic** test: **syntactic frames**.
- For example, only nouns fit in the frame: I have a _____.
- Warning: failing a test does **not** teach us anything. If that happens, you should try another test.
 - alumni (*alumnuses), oxen (*oxes)
 - *I have a water

Phrase structure

- Sentences are made up of smaller **constituents**:

(1) The baby threw steamed broccoli on the floor.

➡ Constituents are always *nested*



➡ Every **node** (= •) in the tree represents a constituent

Phrase structure

Rules

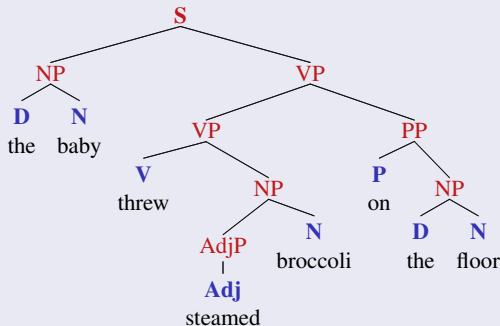
- The content of constituents can be described using **Phrase Structure Rules** (*aka* “rewrite rules”).
- Phrases have **heads**; heads give categories to their phrases. V is the head of VP, N is the head of NP...

- (3)
- a. $NP \rightarrow (D) (AdjP) N (PP)$
 - b. $VP \rightarrow (AdvP) V (NP) (PP)$
 - c. $PP \rightarrow P NP$
 - d. $S \rightarrow NP VP$

Representing constituents using trees

- The level just above the words represents **word classes**.
- At higher levels we form **phrases**.

(4)



Constituency tests

- We can provide empirical evidence for the intuitions we have that some words in a sentence “go together” more than others do.

Replacement

- Some constituents can be replaced by other words without radically changing the meaning:
 - (5) a. Sophie threw her steamed broccoli on the floor.
 - b. Sophie threw it on the floor.
- Non-constituents cannot
 - (6) a. Sophie threw her steamed broccoli on the floor.
 - b. * Sophie threw her steamed it floor.

Constituency tests

Fragment

- If words can stand alone in response to a question, they are probably a constituent.
 - (7) a. What did Sophie throw on the floor?
b. Her steamed broccoli.
 - (8) a. Where did Sophie throw her broccoli?
b. On the floor.
- Non-constituents cannot
 - (9) a. ...???
 - b. Broccoli on the.
 - c. Sophie throw on.

Constituency tests

Movement (clefting, pseudo-clefting)

- Some constituents can move as units

- (10) a. Sophie threw her steamed broccoli on the floor.
b. Her steamed broccoli *is what* Sophie threw ___ on the floor.
c. *It was* her steamed broccoli *that* Sophie threw ___ on the floor.

- Non-constituents cannot

- (11) a. Sophie threw her steamed broccoli on the floor.
b. * Broccoli on the *is what* Sophie threw her steamed ___ floor.
c. * *It was* broccoli on the *that* Sophie threw her steamed ___ floor.

Constituency tests

Coordination

- Some constituents can be coordinated with like constituents

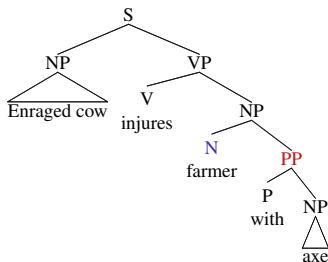
- (12)
- a. Sophie threw [her steamed broccoli and the water] on the floor.
 - b. Sophie threw her steamed broccoli [on the floor and in the garbage].
 - c. Sophie [threw her steamed broccoli on the floor and screamed].

➡ Be careful! Not all constituents will pass all of these tests, and not all *non*-constituents will fail them!

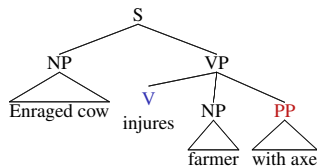
Syntactic ambiguities

➡ We can represent syntactic ambiguities with trees:

(13)



(14)



Principle of modification:

If an **XP** (a phrase) modifies some head **Y**, then **XP** must be a sister to **Y**.

Syntactic ambiguities

► We can also represent syntactic ambiguities with square brackets:

(15) The young men and women built the house.

- [The young [men and women]] built the house.
 - [[The young men] and [women]] built the house.
- Different structures make different predictions about *constituency*:
constituency tests can be used to test the structures we propose

Syntax

Best advice

- Know how to draw trees for English sentences.
- Know how to paraphrase readings of ambiguous sentences and illustrate them with brackets and with trees.
- Know how to use constituency tests.
- Know how to classify sentence by syntactic function (subject vs. predicate) and by obligatoriness (arguments vs. adjunct)

Semantic relations

Grice's conversational maxims

- “Rules” that speakers and listeners assume are being followed in order to make inferences

Entailment, presupposition, implicature...

- **Entailment:** Whenever **A** is true, **B** must also be true
 - **Equivalence:** **A** entails **B** and **B** entails **A**
 - **Contradiction:** **A** and **B** are never true at the same time.
If **A** is true, **B** must be false. If **A** is false, **B** must be true.
 - **Presupposition:** Assumed background information
 - **Implicature:** information you infer that is not necessarily said
- ➡ Know how to distinguish these!

Semantic relations

Entailment

- A necessity relation: sentence **A** entails sentence **B** if whenever **A** is true, **B** is also true.
- Entailments disappear under negation.

Presupposition

- Presuppositions are the background assumptions we make about the “common ground” shared between conversation participants.
- Presuppositions survive (project past) negation.

Implicature

- Content that is implied and depends on the context.
- Implicatures are cancellable or **defeasible**.

Compositionality

Principle of compositionality:

The meaning of a sentence is determined by the meanings of the words it contains and the way they are syntactically combined.

Compositionality is at the heart of the ambiguities we've been discussing:

- (16) Dr. Ruth discussed sex with newspaper editors. *syntactic ambiguity*
- a. Dr. Ruth [discussed [sex with newspaper editors]].
 - b. Dr. Ruth [[discussed sex] [with newspaper editors]].
- (17) Dave bought a bat. *semantic ambiguity*

Truth conditions

Truth conditions

What it would take for a sentence to be true or false; what the world would need to be like in order for the sentence to be true or false.

➡ **Note:** we don't have to know *whether* the sentence is true or false to know its truth conditions:

(18) The average height of students in this class is 1.75cm.

The extension and intention of a sentence

- The **intension** of a sentence = its meaning = its **truth conditions**
- The **extension** of a sentence in a given situation = its **truth value** (**True** or **False**) in that situation

Predicates

Predicates

Predicates are lexical heads with their complements (if any) — VPs

- *purr, read the newspaper, study Linguistics, watch a movie*
- *be furry, be black, be intelligent, be tall*
- *be a cat, be a student of linguistics, be from Canada*

The extension and intension of predicates

- The **intension** of a predicate = its meaning = the conditions under which it applies to entities
- The **extension** of a predicate in a given situation = the set of entities it applies to in that situation

Lexical semantics

Individuals

- **Intension:** the way that the referent is referred to (**sense**).
 - The superhero who can fly and deflect bullets.
- **Extension:** a corresponding referent in the real world (**reference**).



Natural language connectives and quantifiers

Sets and Venn diagrams

- Predicates can be described as **sets of individuals**.
- Natural language **connectives** relate individuals to sets.
 - **Intersection** of two sets: an individual is a member of both sets.
 - **Union** of two sets: an individual is a member of at least one of the sets.
 - *and, or, either.. or, not, but*
- Natural language **quantifiers** express relations between sets.
 - *every, some/a, no, n(umerals)*

Modification

Adjectives, antonym pairs

- **Intersective adjectives** can be described using set intersection. They conform to an entailment pattern:
 - *Cara is a black cat* **entails**: Cara is black and Cara is a cat.
- **Non-intersective adjectives** do not conform to the entailment pattern:
 - *This is a fake diamond* **does not entail**: this is a diamond.
- **Gradable adjectives** depend on the context that they are interpreted in.
 - *A tall 5-year-old* vs. *a tall basketball player*.
- **Antonym** pairs can be **gradable** or **complementary**.
 - *tall* vs. *short*.
 - *correct* vs. *incorrect*.

Semantics

Best advice

- Determine and argue for semantic relations
 - Entailment, presupposition, implicature, contradiction, equivalence.
- Recognize semantics vs. syntactic ambiguities
 - describe in words, and using square brackets, trees.
- Intensions vs. extensions for various sentence constituents.
 - sentences, predicates, individuals.
 - truth conditions vs. truth values
- Venn diagram descriptions of connectives and quantifiers.
- Identify types of modifiers.

Writing systems & the mental lexicon

- Prepare for multiple choice questions based on the content of these lectures.
- Not including the last part of the writing systems slides (Reading and spelling), which we didn't have time to get to.

The mental lexicon

The nature of words

- The problem of language acquisition
 - Why do children parse the speech stream into words?
 - Why do we do it as adults?
 - Why is the process so uniform across languages?
- What is innate? What is learned?
- What must be stored in the lexicon?
 - Morphemes? words? idioms?
 - What information is stored for each entry?

The mental lexicon

Psycholinguistics

- The psychological reality of linguistic units
 - The Stroop effect
 - Slips of the tongue (including examples)
 - Spoonerisms
- Stages of speech production
 - Serial models
 - Interconnected models

The mental lexicon

Psycholinguistics

- Lexical decision tasks
 - words vs. non-words
 - Frequency effects
 - Pronounceable vs. unpronounceable non-words
 - Priming effects
- The structure of the mental lexicon
 - Serial models
 - Interconnected models
- The McGurk effect

Writing systems

The nature of writing

- Writing systems are a (rather new) *technology*.
- Invented independently a few times throughout humanity.
- Transmitted, adopted and adapted commonly.

Types of writing systems

Type of writing

Pictographic

Ideographic

Morphemic

Syllabic

Alphabetic

Consonantal

Meaning

Elements are pictures

Elements denote abstract ideas

Elements denote words or morphemes

Elements denote syllables

Elements denote phones (vowels and consonants)

Elements denote consonants (mostly)

Writing systems

Stages in the development of writing systems

- From pictograms to ideograms to writing
 - The rebus principle
 - The charades principle
- The history of the Roman (Latin) script.
- Examples of languages using different types of writing systems.
- Scripts and languages mentioned in lecture.
 - What is the earliest writing system we know of? When was it invented?
 - What is Linear B?
 - Is Hangul a syllabary? What language uses this writing system?
 - What type of system is the Cherokee writing system?

For next time...

- **My office hours:** Today 15:00-16:30.

Extra office hours: Wednesday (March 16) 11:00-12:00.
Linguistics, room 101.

- **TA office hours:** Today 16:30-17:30, Linguistics, room 204.
- We'll start at 12:35, so don't be late.

➡ Don't forget to bring a pen!

➡ **No conference this Friday! (March 18)**

- **For next week:** read Merrison et al., chapter 15.