

## Class Intro: How do semanticists think?<sup>1</sup>

### 1 On Monday ...

- Semantics is the branch of linguistics devoted to the investigation of linguistic/literal meaning, i.e, the interpretation of expressions in a language system.
- Logic is very useful and powerful in modeling semantics. But, the study of semantics is much more complex than “translating natural language expressions to logical symbols”.
  1. Semantics is much more complex than logic.
  2. Semantics interacts with other components of the language system.
  3. Semantics investigates not only what the meaning of an expression is, but also how it is derived and principled. Semantics tries to find out the *finite* means for the meanings of the *infinite* set of sentences of any natural language.
- Schedule and requirements (see syllabus)

- **Questionnaire**

Send Yimei an email ([yxiang@fas.harvard.edu](mailto:yxiang@fas.harvard.edu)) with the following information by Friday:

- (1)
  - a. What is your previous exposure to semantics and logic?
  - b. What is your previous exposure to linguistics outside of semantics?
  - c. How would you rate the level of your interests in learning symbolic models? (1 for extremely uninterested, 7 for extremely interested)
  - d. How would you rate your current ability of using/learning symbols models? (1 for extremely bad, 7 for extremely good)
  - e. What do you hope to learn in this class?
  - f. Do you have any concerns/questions about this class?

- **Sectioning**

On Friday night, there will be an email asking you to fill the sectioning form! Fill it by Sunday. Sectioning is hard, plz check ALL your available time slots!

---

<sup>1</sup>Concepts/terms encountered today, if not introduced later, will not be tested.

## 2 How do semanticists think?

- Semanticists try to explain chaotic semantic facts based on a finite number of logical rules. But, in many cases, it is hard to tell whether a linguistics fact is primarily restricted by syntactic or semantic constraints.

The following examples illustrate the differences between semanticists and syntacticians w.r.t. their ways of thinking and choices of methodologies. (Note that the analyses have been greatly simplified for the sake of this class.)

### 2.1 Conjunctions

- What and what expressions can be coordinated?
  - (2) a. Andy is [a good linguist and very hard-working]. NP and AdjP
  - b. Sue walked [slowly and with great care]. AdvP and PP
  - c. I am [hoping for an invitation and optimistic about my chances]. VP and AdjP
- What do syntacticians think?
  - the conjuncts have the same external dependency relation. (Hudson 1984, 2003)  
E.g.: slowly and with great care are both dependent on walked.
  - the conjuncts must have a certain range of syntactic features (e.g., PREDICTIVE) in common. (Sag et al. 1985.)
- What do semanticists think?
  - The conjuncts need to be of the same **semantic type**. (Munn 1993, 2000)  
E.g.: (a) good linguist and very hard-working are both one-place predicates (of type  $\langle e, t \rangle$ ).<sup>2</sup>
  - (3) a.  $\llbracket \text{a good linguist} \rrbracket(x) = x$  is a good linguist
  - b.  $\llbracket \text{very hard-working} \rrbracket(x) = x$  is very hard-working
  - c.  $\llbracket \text{a good linguist and very hard-working} \rrbracket(x) = x$  is a good linguist and  $x$  is very hard-working

E.g.: slowly and with great care are both modifiers of one-place predicates (of type  $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$ ).

---

<sup>2</sup>A one-place predicate is a function that maps an *entity* to a *truth value* (the type of a sentence).

## 2.2 Short answers

- A *short answer* spells out only the constituent that provides only the new information.

(4) Who did John vote for?

a. Mary.

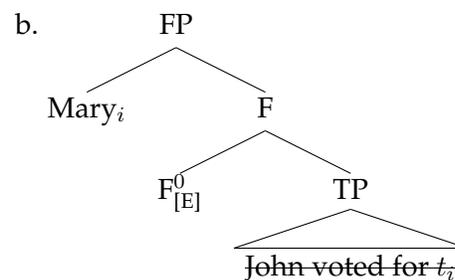
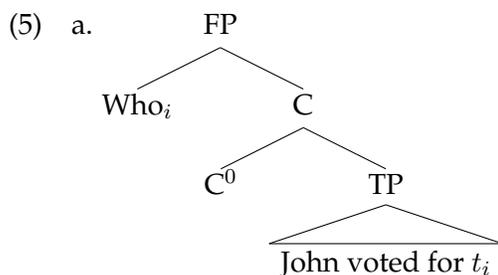
(short answer)

b. John voted for Mary.

(full answer)

- What do syntacticians think?

- A short answer is **covertly clausal**. It is an **elliptical** form of the corresponding full answer and interpreted as a proposition.
- Merchant (2005): the focused constituent moves to a left-peripheral position; next, licensed by a linguistic antecedent provided by the *wh*-question, the rest of the clause gets elided.



- What do (some) semanticists think?

- A short answer is a **bare nominal** constituent.
- A matrix question denotes a function. Short answers are possible **arguments** of this function. (Groenendijk & Stokhof 1984, Ginzburg & Sag 2000, Jacobson 2016)

(6) a.  $\llbracket \text{who did John vote for?} \rrbracket (x) = \text{John voted for } x$

b.  $\llbracket \text{who did John vote for?} \rrbracket (\llbracket \text{Mary} \rrbracket) = \text{John voted for Mary}$

## 2.3 Neg-raising (NR)

- In (7), cf. (8), the negative on the matrix clause is intuitively interpreted within the embedded clause.

- (7) John doesn't believe that Suzi won the race.
- a.  $\approx$  John believes that Suzi didn't win the race. NR reading
- b.  $\not\approx$  It is not the case that John believes that Suzi won the race. non-NR reading
- (8) John didn't say that Suzi won the race.
- a.  $\not\approx$  John said that Suzi didn't win the race.
- b.  $\approx$  It is not the case that John said that Suzi won the race.

- What do syntacticians think?

Neg-raising predicates (e.g., *think*, *believe*) allow negation to be raised cross them; but negation is interpreted at the original position. (Fillmore 1963, Ross 1973, Prince 1976)

- (9) John PRES \_\_\_ believe [that Suzi did not win the race].
- ↑ \_\_\_\_\_ √ \_\_\_\_\_ |

- (10) John PAST \_\_\_ say [that Suzi did not win the race].
- ↑ \_\_\_\_\_ × \_\_\_\_\_ |

- What do semanticists think?

- Semantic analysis 1 (Bartsch 1973, Gajewski 2007) :

NR predicates trigger a presupposition that the agent is opinionated about the truth/falsehood of the embedded clause. The NR reading is a **logical** consequence of this presupposition and the non-NR reading.

- (11) John doesn't believe *p*.
- Either John believes *p*, or John believes not-*p** Opinionated presupposition
- It is false that John believes *p*.* non-NR reading
- $\therefore$  *John believes not-*p*.* NR reading

- Semantic analysis 2 (Romoli 2014):

One choses to say (7) only if this sentence is true and is stronger than any other relevant true sentences. The unopinionated condition *John isn't opinionated at *p** is stronger than (7) but not stated, leaving only the possibility that this condition is false.

- (12) John doesn't believe *p*.
- It is false that [John neither believes *p* nor believes not-*p*]* not unopinioanted
- $\therefore$  *Either John believes *p*, or John believes not-*p** Opinionated
- It is false that John believes *p*.* Non-NR reading
- $\therefore$  *John believes not-*p*.* NR reading

## 2.4 Negative islands of degree questions

- In this example, we see a seemingly “syntacticity” fact which however cannot be accounted for syntactically.

- (13) a. How fast did John run?  
b. \* How fast didn't John run?

- A potential syntactic analysis (but no one seriously pursued due to clear flaws) for the ungrammaticality of (13b): negation blocks the movement of the *wh*-phrase *how fast*, and making (13b) ungrammatical.

- (14) \_\_\_\_\_ John didn't run how fast?  
          ↑ \_\_\_\_\_ × \_\_\_\_\_ |

Why is this syntactic analysis problematic? Consider:

- (15) a. Who did John see?  
b. Who didn't John see?

- What do semanticists think?
    - A question is defined only if it has a strongest true answer, i.e., the answer that provides exactly all the true information. (Dayal 1996)
    - (13b) is ungrammatical because it can never have a strongest true answer. (Fox & Hackl 2007)
- (16) Assume that John ran *a*-fast, then for any  $n \in (a, +\infty)$ , it is true that John didn't run *n*-fast. The strongest true answer of (13b) is based on the **smallest** *n* s.t. John didn't run *n*-fast. But such smallest *n* doesn't exist.  
∴ (13b) never has a strongest true answer.

## 2.5 Too many to mention ...

Licensing of negative polarity items,

Identity condition on ellipsis,

Focus association,

Modal Concord,

Binding,

Weak Crossover,

Quantifier raising,

Reconstruction,

Plural,

Formation of restrictive relative clause,

... (Many thanks to my Facebook linguist friends for their contributions to this discussion!)