

# LSA.311: Lecture 9

Kai von Fintel

Massachusetts Institute of Technology

July 25, 2005

## Where We Were

- Intensional semantics
- Two kinds of parameters of evaluation
  - utterance context parameters
    - world, time, speaker at a minimum
  - index of evaluation parameters
    - world, time
- Only the index parameters are shifted away by operators

# Notation

- $[[\phi]]^{c,i}$ 
  - $c = \langle w_c, t_c, s_c \rangle$
  - $i = \langle w_i, t_i \rangle$
- The intension of  $\phi$ :
  - $[[\phi]]_{\mathfrak{C}} = \lambda c, i. [[\phi]]^{c,i}$

## Truth of an utterance

- An utterance of a sentence  $\phi$  by  $s$  in world  $w$  at  $t$  is true if  $\llbracket \phi \rrbracket_{\mathfrak{C}}(\langle w, t, s \rangle, \langle w, t \rangle) = 1$  and false if  $\llbracket \phi \rrbracket_{\mathfrak{C}}(\langle w, t, s \rangle, \langle w, t \rangle) = 0$ .
- Note:
  - initially both world parameters and both time parameters are set to the utterance values
  - it is only when modal/temporal operators appear that the index parameters get shifted away

## Empirical questions

- which features of the context do we need “deep memory” for
- can we make do with world-time-speaker triples?
- can something else, like a concrete utterance situation, play the context role?
- which parameters can be shifted?
- what kind of shifting operators are there?

# Conspicuous Absence

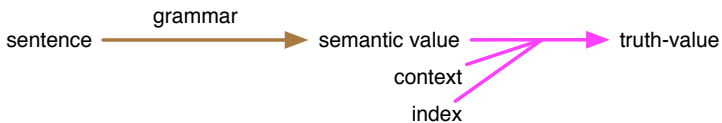
- Could there be operators that shift the “utterance parameters”?
- Technically: yes
  - Nothing prevents us from shifting the  $s$  parameter, for example
  - It’s all a matter of constructing an operator that does it.
  - $\llbracket \text{REVERSE} \rrbracket^{c,i} = \lambda \phi. \phi(\langle w_c, t_c, a \rangle, i) = 1$ , where  $a$  is the person that  $s_c$  is addressing in  $w_c$  at  $t_c$ .
  - REVERSE I am an idiot
  - = You are an idiot
- Monstrosity!

# Today

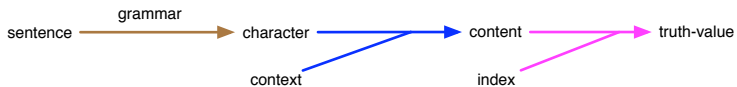
- The Kaplanian Two-Step
- Why?
  - Absence of monsters
  - The need for propositions

# The Simple Double-Indexing Picture

•



# The Kaplanian Two-Step



## Two Semantic Values

- The character of  $\phi$ ,  $\llbracket \phi \rrbracket_{\mathcal{X}}$ 
  - $\lambda c. [\lambda i. \llbracket \phi \rrbracket^{c,i}]$
- The content of  $\phi$  at context  $c$ ,  $\llbracket \phi \rrbracket_{\mathcal{C}}^c$ 
  - $\lambda i. \llbracket \phi \rrbracket^{c,i}$
- Technically, this is just a **currying** or **schönfinkelization** of the simple system

## Lewis

- “Asked to choose between our two options, you may well suspect that we have a distinction without a difference. Given a grammar that assigns semantic values according to one option, it is perfectly automatic to convert it into one of the other sort.” [“Index, Context, and Content”]
- “Given the ease of conversion, how could anything of importance possibly turn on the choice between our options?”

# Composition in the Simple System

- Extensional Functional Application
  - $\llbracket \alpha\beta \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{c,i}(\llbracket \beta \rrbracket^{c,i})$
- Intensional Functional Application
  - $\llbracket \alpha\beta \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{c,i}(\lambda c, i. \llbracket \beta \rrbracket^{c,i})$
- But the latter allows monsters

# Composition in the Two Step System

- Extensional Functional Application
  - $\llbracket \alpha\beta \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{c,i}(\llbracket \beta \rrbracket^{c,i})$
- Intensional Functional Application
  - $\llbracket \alpha\beta \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{c,i}(\lambda i. \llbracket \beta \rrbracket^{c,i})$
  - Context parameter remains inaccessible

# Monstrous Functional Application

- $\llbracket \alpha\beta \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{c,i}(\lambda c.(\lambda i. \llbracket \beta \rrbracket^{c,i}))$
- The claim that there are no monsters reduces to the claim that MFA is not part of the system of natural language semantics.

# The Need for Propositions

- The intermediate object, Kaplan's "content", Stalnaker's "proposition", is important for understanding communication.
- Four arguments
  - three kinds of ignorance
  - common ground invariance
  - discourse relations
  - content anaphora

## Three kinds of ignorance

- don't know the language
  - can't compute the character
- don't know the context
  - can't compute content ("what is said")
- don't know the facts
  - can't determine truth

## “He’s a fool”

- Suppose you say “He is a fool” looking in the direction of Daniels and O’Leary. [Stalnaker, “Pragmatics”]
- Suppose it is clear to me that O’Leary is a fool and that Daniels is not, but I am not sure who you are talking about.
- Compare this with a situation in which you say “He is a fool” pointing unambiguously at O’Leary, but I am in doubt about whether he is one or not.
- In both cases, I am unsure about the truth of what you say, but the source of the uncertainty seems radically different. In the first example, the doubt is about what proposition was expressed, while in the second there is an uncertainty about the facts.

## Common ground invariance

- O'Leary: *Daniels is here*
- What if you don't know where O'Leary is
  - at home
  - in his office
- Compare:
  - O'Leary: *Daniels is with me*
- Common Ground Invariance
  - In felicitous communication, the proposition expressed by an utterance does not vary from one context to the next within the common ground.

## Discourse Relations

- If O'Leary says 'Are you going to the party?' and you answer, 'Yes, I'm going', your answer is appropriate because the proposition you affirm is the one expressed in his question.[Stalnaker, "Pragmatics"]
- On the simpler analysis, there is nothing to be the common content of question and answer except a truth value. The propositions are expressed from different points of reference, and according to the simpler analysis, they are different propositions. A truth value, of course, is not enough to be the common content. If O'Leary asks 'Are you going to the party?' it would be inappropriate for you to answer, 'Yes, snow is white'.

# Disagreement

- Fools
  - A: You are a fool.
  - B: I am not.
- Smarter than you
  - A: I am smarter than you.
  - B: I am smarter than you.

## Content anaphora

- A: Hi, I am calling from 32-141. John is here.
- B: That I already knew. But I am astonished that *you* are there. You normally avoid John like the plague, don't you?
- What does “that” refer to?

## A Problem

- We have seen a need for propositions.
- Propositions are functions from worlds to truth-values.
- In our system, the intermediate object isn't simply a function from worlds to truth-values
- Rather, it is a function from whatever is shiftable to truth-values
- This includes at least times
- Is that what we want?

## Do we want temporally variable propositions?

- July 25, 2005: *I am 43 years old*
- July 25, 2006: *I am 43 years old*
- Haven't I contradicted myself?

## Two Ways to Eternity

- perhaps, present tense is indexical
- or, we manufacture eternal propositions

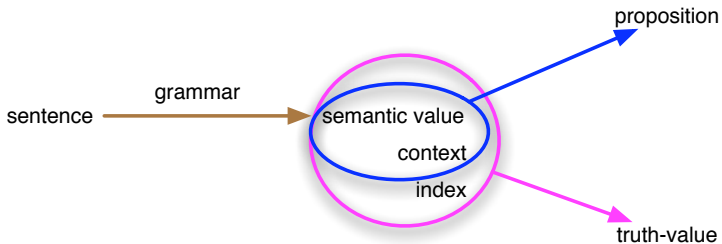
## How can we get (eternal) propositions?

- Easy
- For any sentence  $\phi$ 
  - the proposition expressed by  $\phi$  at  $c$  is definable as
  - $\lambda w. \llbracket \phi \rrbracket_x(c)(\langle w, t_c \rangle)$
- But now the two-step doesn't really matter.

## Propositions in the Simple System

- For any sentence  $\phi$ 
  - the proposition expressed by  $\phi$  at  $c$
  - $\lambda w. \llbracket \phi \rrbracket_{\mathcal{C}}(c, \langle w, t_c \rangle)$
- “[W]e [do not] need to equate the propositional content and the semantic value of a sentence in context. It is enough that the assignment of semantic values should somehow determine the assignment of propositional content.” [Lewis, “Index, Context, and Content”]

# A Picture



# The Seven Little Goats

- In the fairy tale “The Wolf and the Seven Little Goats”, the little goats are home alone when the wolf knocks on the door and says
- “Open the door, my dear little goats! I am your mother.”

# Diagonalization

- In exceptional cases (says Stalnaker), the common ground may include several candidate contexts.
  - in other words: the hearer may not know what context he is in
- In these cases, the *diagonal proposition* expressed by a sentence comes into play
- $\lambda w : w \in cg. \llbracket \phi \rrbracket^{c^w, \langle w, t_{cw} \rangle}$
- I am your mother
  - expresses the diagonal proposition:
  - The person speaking is the addressees' mother.

## More Goats

- Before the mother goat goes out, she instructs the little goats not to open the door to a stranger: “If somebody knocks, ask him to show his hoof in the window, and open the door only if you recognize the hoof as mine.” But since she doesn’t trust them, she decides to put them to the test. She returns and knocks, and the little goats open the door immediately. She chides them and says:
- “You shouldn’t have opened the door. I could have been the wolf. If I had been the wolf, I would have eaten you all by now.”

## What We'll Do

- Referential Definites
  - Indexical or not?
- Attitudes de se
- Monsters?