Tutorial “Quantification and binding" and "Intensionality”

Session 6

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June 5 , 2020

Our agenda today

- Embedded tense
- **Q&A**

Any questions?

A summary of last session

Modals as operators that shift the the evaluation world with restrictions from conversational backgrounds/modal bases.

if-clause restricts a modal (covert/overt).

Tense shifts the evaluation time to **a particular time** with restrictions from either overt time frame adverbials or an index.

Embedded tense

Present under future: The evaluation time of the embedded clause is shifted together with the one of the matrix clause. Why?

(1) Tony will think that Arthur is happy.
a. Tony thinking: $t > t_i$ Arthur being happy: $t > t_i$
b. # Tony thinking: $t > t_i$ Arthur being happy: t_i

One possible explanation: Tenses under attitude predicate reflect the attitude holder's temporal perspective and not the speaker's.

Embedded tense

<u>Past under future:</u>

(2) Tony will think that Arthur was happy.

a. # Tony thinking: $t > t_i$ Arthur being happy: $t > t_i$

b. Tony thinking: $t > t_i$ Arthur being happy: $t' < t$

Situation S: *Tony never realized that the simple life at the moment is what Arthur really wants. But one day he will realize this. I'm telling my friend their situation:*

“Tony will think that Arthur was happy.”

Embedded tense

$$[\![S']\!]^i = [\![\textbf{think}]\!]^i(\lambda i'.[\![S]\!]^{i'})([\![\textbf{Tony}]\!]^i) \qquad \text{(IFA, FA)}$$

$= 1$ iff $\forall w[w$ is compatible with Tony's beliefs in w_i at $t_i \rightarrow$
$\exists t[t < t_i \wedge$ Arthur is happy in w at $t]]$

$$[\![S'']\!]^i = [\![\textbf{woll}]\!]^i(\lambda i'.[\![S']\!]^{i'}) \qquad \text{(IFA)}$$

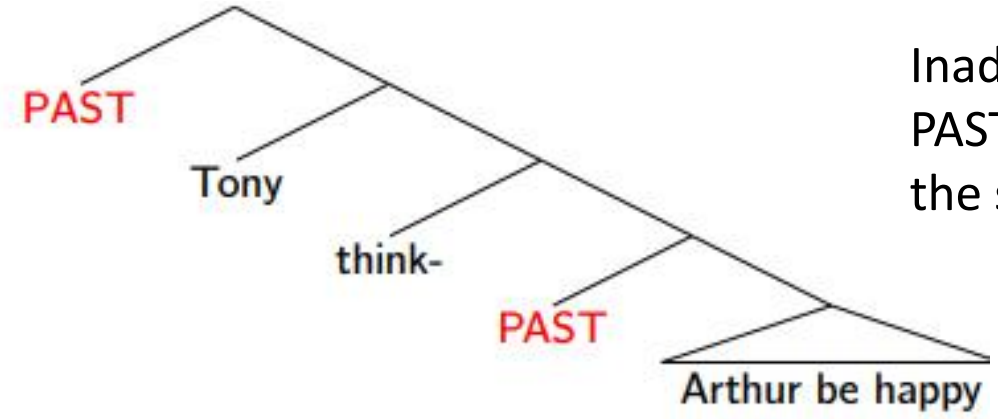
$= [\lambda p \in D_{\langle s,t\rangle} \,.\, \exists t[t_i < t \wedge p(\langle w_i, t\rangle) = 1]](\lambda i'.[\![S']\!]^{i'})$
$= 1$ iff $\exists t[t_i < t \wedge [\lambda i'.[\![S']\!]^{i'}](\langle w_i, t\rangle) = 1]$
$= 1$ iff $\exists t[t_i < t \wedge [\![S']\!]^{\langle w_i, t\rangle} = 1]$
$= 1$ iff $\exists t[t_i < t \wedge \forall w[w$ is compatible with Tony's beliefs in w_i at $t \rightarrow$
$\exists t'[t' < t \wedge$ Arthur is happy in w at $t']]]$

The sequence of tense

The SOT phenomenon:

PAST occurs immediately under another PAST, the lower and the higher PAST refers to a **simultaneous** $t<t_i$

(3) Tony thought $_t$ that Arthur was happy $_{t/t'}$.



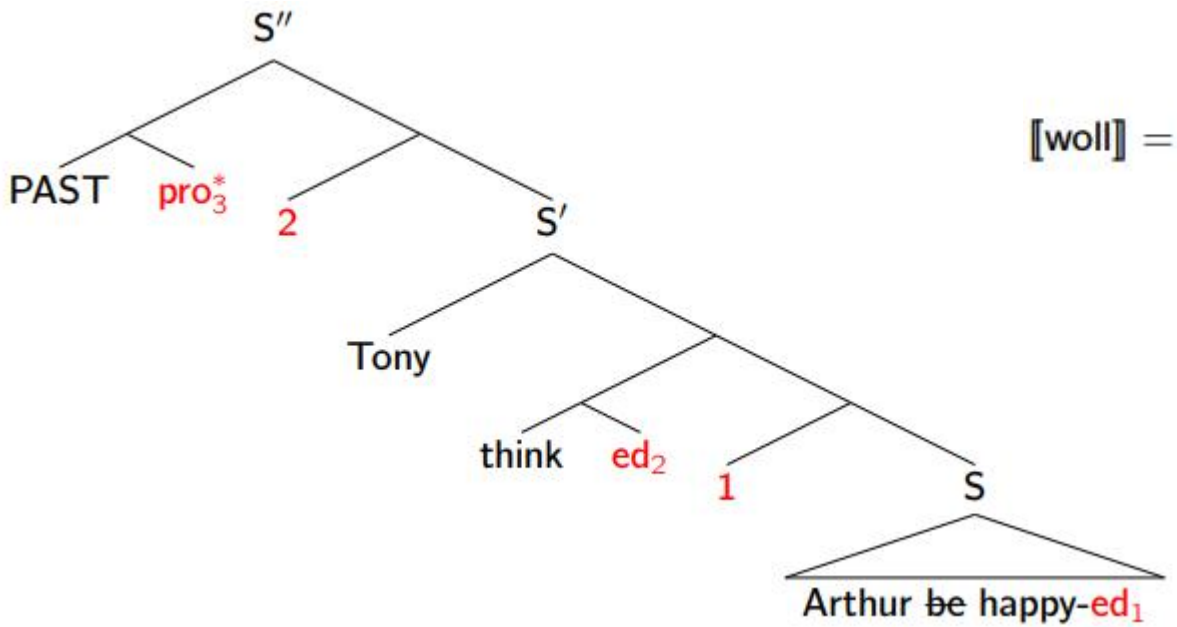
Inadequate: The LF with two PAST-operators doesn't allow the simultaneous reading.

The extensional approach

The tense operators denote now functions from $D_{\langle s,\langle\langle s,t\rangle,t\rangle\rangle}$.

$[\![\textbf{PAST}]\!] = \lambda i \in D_s \,.\, [\lambda p \in D_{\langle s,t\rangle} \,.\, \exists t[t < t_i \wedge p(\langle w_i, t\rangle) = 1]]$

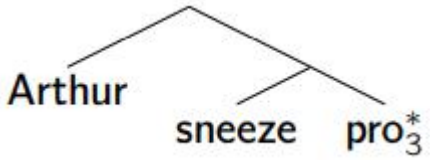
$[\![\textbf{woll}]\!] = \lambda i \in D_s \,.\, [\lambda p \in D_{\langle s,t\rangle} \,.\, \exists t[t_i < t \wedge p(\langle w_i, t) = 1]]$



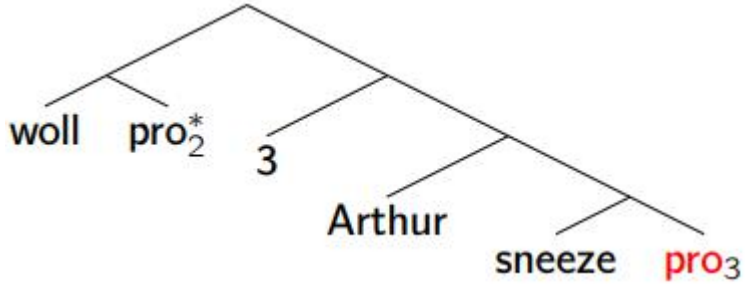
Present tense/future morphology

Recall: **PAST** is different from **-ed** on the verb. The interpretable features on -ed are checked via agreement with the uninterpretable features on PAST.

(4) Arthur sneezes. No operator PRESENT, no index, just the spell-out -*s*.



(5) Arthur will sneeze. **Woll** binds an index with no features.



Thanks and see you next week!