

Double access and acquaintance

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Double access

(1) John thought that Mary **is** pregnant

the described pregnancy includes:

toy analysis

1. the time of the attitude
2. the utterance time

(2) #John thought two years ago that Mary is pregnant

First complication: mistaken time

Scenario: At 9am, John thinks it is 10am

(3) John thinks that it is 10am. (uttered at 9am)

intuition: true

prediction: John's belief is absurd

solution: the present tense refers to the time John **thinks** it is

the described event includes:

toy analysis

1. the time of the attitude
2. the utterance time

First complication: mistaken time

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(3) John thinks that it is 10am. (uttered at 9am)

intuition: true

prediction: John's belief is absurd

solution: the present tense refers to the time John **thinks** it is

the described event includes:

1. ~~the time of the attitude~~ attitude holder's now
2. the utterance time

Second complication: the role of the utterance time

(1) John thought that Mary is pregnant

the pregnancy includes:

1. ~~the time of the attitude~~ attitude holder's now
2. the utterance time

Second complication: the role of the utterance time

(1) John thought that Mary is pregnant

the **believed** pregnancy includes:

- | | | |
|--|------------------------|--------------|
| 1. the time of the attitude | attitude holder's now | <i>de se</i> |
| 2. the utterance time | but not in John's mind | <i>de re</i> |

Abusch (1994, 1997): acquaintance relations about times
Heim (1994): time concepts

'the meanings of descriptions by which an attitude holder might represent a time to herself'

functions from world-time pairs to times

Time concepts, some examples

the time concept of 'today' is a function that maps each $\langle w, t \rangle$ to the day of t

the time concept of 'the last time the lights went out' is a function that maps each $\langle w, t \rangle$ to the last $t' \prec t$ such that the lights went out at t' in w

Time concepts and double access

(1) John thought that Mary is pregnant

the believed pregnancy includes:

1. the attitude holder's now
2. the utterance time but not in John's mind

Heim/Abusch: (1) is uttered felicitously iff the context provides a time concept f that satisfies:

1. f evaluated with respect to the attitude holder's world and now (at the time of his attitude) should not follow the attitude holder's now completely
2. f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time

First example: big belly

f : the meaning of 'while the cause for her right now visible big belly lasts'

a function that maps each $\langle w, t \rangle$ to the maximal interval that includes t during which the cause of her big belly holds

(1) John thought that Mary is pregnant

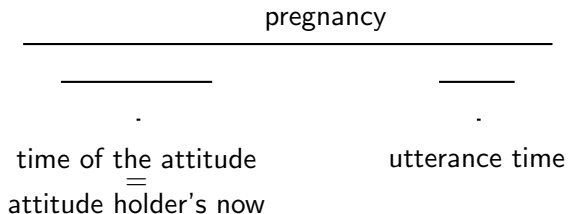
1. f evaluated with respect to the attitude holder's world and now (at the time of his attitude) should not follow the attitude holder's now completely ✓
2. f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time
iff the cause still holds at the utterance time ✓

No mistaken time

Scenario: attitude holder is not mistaken about the time

(2) #John thought two years ago that Mary is pregnant

1. f evaluated with respect to the attitude holder's world and now (at the time of his attitude) should not follow the attitude holder's now completely
2. f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time



Second case: mistaken time

Scenario:

John thinks Bill's 40th birthday is in the past and that Mary was pregnant on that day.

Bill's 40th birthday is in fact the day of John's thinking, which is today

(1) John thought that Mary is pregnant

intuition: infelicitous

f : the meaning of the description 'on Bill's 40th birthday'

1. f evaluated with respect to the attitude holder's world and now (at the time of his attitude) should not follow the attitude holder's now completely ✓
2. f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time ✓

prediction: felicitous

Proposed solution

suggestion Heim (1994, fn. 28): prohibition on temporally neutral time concepts

- ▶ too restrictive
- ▶ why?

New solution

Scenario:



John thinks Bill's 40th birthday is in the past and that Mary was pregnant on that day.

Bill's birthday is in fact the day of John's thinking, which is today

(1) John thought that Mary is pregnant (uttered today)

intuition: infelicitous

f : the meaning of the description 'on Bill's 40th birthday'

1. f evaluated with respect to the attitude holder's world and now (at the time of his attitude) **should overlap the attitude holder's now** 
2. f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time 

prediction: infelicitous

On deck

1. f evaluated with respect to the attitude holder's world and now (at the time of his attitude) **should overlap the attitude holder's now**
2. f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time

- ▶ Show how 1 & 2 follow from the meaning of the present tense, thereby deriving Double Access
- ▶ Consider consequences of 1 in light of examples that motivated Abusch's (1997) Upper Limit Constraint

Semantic constraints

English present tense demands truth at (a) & (b):

(a) the local evaluation time, e.g. the attitude holders now
(relative tense component).

(b) the speech time (deictic tense component).

(4) I am happy

(5) John saw a child who is crying

The key idea

- ▶ Musan 1995: tense is an existential quantifier with implicit domain restriction on the topic time (cf. Klein 1994)
- ▶ Altshuler & Schwarzschild 2013: the present tense is a universal quantifier with implicit domain restriction that is intensional
 - ▶ properties of times, not times themselves

Contributions of the present

(1) John said that Mary is pregnant.

$\lambda t_{@} \lambda t_0 \lambda w_0 : t_0 \in f(w_0, t_0) \wedge \exists t'(t' \approx s^* \wedge t' \in f(w^*, t_{@}))$

$\forall t(t \in f(w_0, t_0) \wedge \text{be.pregnant}(w_0, t, \text{mary}))$

Presuppositional constraints on f_1 :

- ▶ When evaluated at w_0, t_0 :
 f must include the local evaluation time t_0
- ▶ When evaluated at $w^*, t_{@}$:
 f must include some time t' that is at s^*

Contributions of the present

(1) John said that Mary is pregnant.

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$\forall t(t \in f(w_0, t_0) \wedge \text{be.pregnant}(w_0, t, \text{mary}))$

Assertive content:

- ▶ Mary's state of being pregnant in w_0 holds throughout the time interval t described by f in w_0 at t_0 .

Question

(1) John said that Mary is pregnant.

$$\lambda t_{@} \lambda t_0 \lambda w_0 : t_0 \in f(w_0, t_0) \wedge \exists t' (t' \approx s^* \wedge t' \in f(w^*, t_{@}))$$
$$\forall t (t \in f(w_0, t_0) \wedge \text{be.pregnant}(w_0, t, \text{mary}))$$

► What is f ?

- Should we ban temporally neutral time concepts? (Heim)
- No! They are harmless:
 - The value of f is determined relative to a given context: even in a mistaken time scenarios, temporally neutral time concepts could not be counterexamples given the proposed semantics of the present tense

How is f set?

Comparison

Abusch/Heim:

- ▶ f evaluated with respect to the attitude holder's world and now (at the time of his attitude) **should not follow the attitude holder's now completely**

Us:

- ▶ f evaluated with respect to the attitude holder's world and now (at the time of his attitude) **should overlap the attitude holder's now**

Original motivation: Upper Limit Constraint

(3) John thought that Mary was pregnant

(3) can be a report of (a) and (b) but not of (c):

- a. Mary was pregnant
- b. Mary is pregnant
- c. Mary will be pregnant

Independent explanation

(3) John thought that Mary **was** pregnant

(3) can be a report of (a) and (b) but not of (c):

- a. Mary was pregnant **meaning of past tense**
- b. Mary is pregnant **meaning of past tense**
- c. Mary will be pregnant

(See Altshuler & Schwarzschild 2013 and references therein)

Independent explanation

(3) John thought that Mary **was** pregnant

(3) can be a report of (a) and (b) but not of (c):

- a. Mary was pregnant **meaning of past tense**
- b. Mary is pregnant **meaning of past tense**
- c. Mary will be pregnant **Upper Limit Constraint? No!**

Upper Limit Constraint:

the time coordinate of a context variable c is an upper limit for the denotation of all time terms which are in its immediate scope, in the sense that these may not denote an interval which is entirely after the time of c .

(Schlenker's 2003 formulation)

Where are my bags?

- (4)
 - a. Customer: I believe you have my bags.
 - b. Employee: Who said I have your bags?
 - c. Customer: The stewardess told me you have my bags.
 - d. Employee: When did she tell you that?
 - e. Customer: On the flight.

Temporal *de re*: Violation of Upper Limit Constraint

- (4) a. Customer: I believe you have my bags.
- b. Employee: Who said I have your bags?
- c. Customer: **The stewardess told me you have my bags.**
- d. Employee: When did she tell you that?
- e. Customer: On the flight.

The customer uses the present tensed verb have in (4c) to speak about a time that is present from his and the employee's perspective, but would have been future from the stewardess' perspective

Summary

- ▶ Original constraints on acquaintance/time concept don't account for double access in particular mistaken identity cases (viz. Bill's 40th birthday scenario).
- ▶ New proposal to fix the constraint.
- ▶ Implementation of constraint in the meaning of the present tense: universal quantification with implicit domain restriction that is intensional.
- ▶ Still need to explain particular cases involving temporal *de re* which show that the Upper Limit Constraint is not sound.

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