24.973 Advanced Semantics
Spring 2009

Speaking of Qualities

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The classical ambiguity

indefinites in intensional contexts: well-known ambiguity

(1)   **Adrian wants to find a jacket like Malte's.**

   a.   *there is a particular jacket which is like Malte's and
          Adrian is looking for that particular thing*   specific
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specific/unspecific: "is there a particular individual that is being targeted?"

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independent issue: **like Malte's** has to be resolved contextually to 'same brand'/'looks similar'/'suitable for similar purposes'/...

(2) **I've just bought a jacket like Malte's.**

The classical solution (Quine 1960, Montague PTQ)

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specific: ∃ > **want**

(3)   ∃x[jacket(x) & like Malte's jacket(x) & Adrian wants that he finds x]

unspecific: **want** > ∃

(4)   **Adrian wants that ∃x[jacket(x) & like Malte's jacket(x) & he finds x]**

Problem for the classical analysis in terms of scope

Fodor (1970) observes a third reading:

(5)   **Adrian wants to buy a jacket like Malte's.**

$\exists > $ want *there is a particular jacket sitting in the
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Reading 3   *what Adrian has in mind: "buy something like this:"*

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Reading 3 *Malte has a green 'Bench'-jacket. Adrian doesn't know this, but we do. Adrian is looking for a green Bench jacket.*   unspecific, transparent

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- evaluation of the restrictor at the actual world makes wrong predictions
- classical analysis as *de qualitate* (higher order *de re*, Cresswell & von Stechow 1982)
- three different cases of "Reading 3"
- a uniform *de qualitate* analysis

Free world variable indexation (standard solution)

- natural language possesses the expressive power of overt quantification over world variables (Cresswell 1990)
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- constraints on coindexing: Percus (2000), Keshet (2008), Romoli & Sudo (2008)

Worry: Attitudes w.r.t. particular worlds (1)

- ascription of propositions about particular individuals give rise to double vision problems (cf. Quine 1956)
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for exemplification: Hintikka-style **want** as truth at all bouletic alternatives (ignoring *de se*):

(7) $[\![\textbf{want}]\!]^{c,g} = \lambda w \lambda p \lambda x. \forall w' \in Boul_w(x)[p(w')]$

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- unnaturally fine-grained

  $w_1 \approx w_2$ *modulo*. . . :

  w_1: Adrian buys green Bench jacket a,
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  ➽ w_1, but not w_2 is a bouletic alternative
     <u>but:</u> Adrian has no means to distinguish w_1 and w_2/a and b

Worry: Attitudes w.r.t. particular worlds (2)

> *Malte's jacket is a green Bench jacket; Adrian does not know what jackets Malte has; Adrian wants to buy a green Bench jacket.* Adrian wants to buy a jacket like Malte's.

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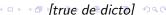- unnaturally fine-grained

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  @: *a* is a green Bench jacket (like Malte's)

  ➡ truth conditions are compatible with w_3 being a bouletic alternative for Adrian

  (8)　　**Adrian wants to buy a green Bench jacket.**

  [true de dicto]

The Burj Dubai-Problem (1)

scenario: Mary is looking at the Burj Dubai, which has 191 floors and is currently the highest building in the world. Also, no other building has more floors. Mary doesn't know this. She also doesn't know how many floors Burj Dubai has. She thinks: "Wow, I want to buy a building that's even one floor higher!"

The Burj Dubai. Courtesy of orbit_77 on Flickr.

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Mary wants to buy a building with at least 192 floors

The Burj Dubai. Courtesy of orbit_77 on Flickr.

The Burj Dubai-Problem (2)

free world variable analysis:

(9) $\llbracket$**Mary wants $w_@$ [λw' [to PRO buy w' [a [building with 192 floors $w_@$]]]]** $\rrbracket^{g,c} = 1$ iff
$\forall w \in Boul_@(\text{Mary})$
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<u>but:</u> $[\![$**building with 192 floors**$]\!](@) = \emptyset$.

➡ Mary's bouletic alternatives are empty (*contrary to intuitions*)

Repair strategy "partly transparent"? (1: *with*-PP)

other things in the actual world might have 192 floors
(beehives,. . .):

(10) $[\![\textbf{building}]\!](w) \cap [\![\textbf{with 192 floors}]\!](@) = \{x \mid x$ is a
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         building in w & x has 192 floors in the actual world @}

- cross-world identity of buildings?
- Intersective Predicate Generalization (Keshet 2008)
  modifiers (adjectives, PPs,...) and host NP have to be
  evaluated at same index (*caveat*: relative clauses):

  (11)   #**Mary thinks Peter is a [bachelor [with a wife]]**

Repair strategy "partly transparent"? (2: "192")

- transparent-specific (*de re*) w.r.t. only **192**
- problematic if embedded more deeply, e.g. German:

  (12)   **ein hundertzweiundneunzigstöckiges**
              a   192-levely
              Gebäude
              building
              'a building with 192 floors'

- Mary need not know that it is a building, by Intersective Predicate Generalization, PP has to be transparent, too

Burj Dubai. . .

. . . is a problem for evaluation at the actual world @

How actual are the Bench jackets?

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standard assumption: the truth conditions for Reading 3 of (13)
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        grandmother's.**
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Reading 3 + amount comparison:

(16)   **Adrian hopes for the company to raise the
          production of pianos like your grandmother's, so that
          they become cheaper and he can afford one.**

Intermediate Conclusion

Not all instances of Reading 3 can be treated in terms of "transparent restrictors" (extension at the actual world):

- empty extensions (Burj Dubai-problem)
- interest in jackets/pianos that haven't been produced (yet)

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- α: individual concept, Hintikka-belief:

  (17) $\exists\alpha[\alpha(@) = a \ \& \ \forall w \in Dox_@(x)[P_w(\alpha(w))]]$

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➥ can we extend this to abstract *res* (=*de qualitate*)?

Generalized de re: Cresswell & von Stechow 1982

"Classical *de qualitate*"

- Cresswell & von Stechow derive *de re* as structured propositions:

  (18)   **Attitude$_@$(x, $\langle$P, a$\rangle$)**

- <u>generalizing</u>:
  a (*res*) may be an abstract entity:

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  a (*res*) may be an abstract entity:
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- <u>required</u>:
  a suitable relation ξ that x bears uniquely to a ("an identifier")
  ξ has to reflect "cognitive contact" between x and a
  (intuitively: to be construed from what x has in mind)

Classical *de qualitate* applied to Burj Dubai

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$\mathbf{\lambda w \lambda x.has\text{-}at\text{-}least\text{-}192\text{-}floors_w(x) \rangle)}$

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Mary's identifier:

$\xi = [\lambda w.\iota Q[Q = \lambda w'\lambda x.x$ has one more floor in w' than that
building (=*pointing to the Burj Dubai*) has in w]]

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(20)   **want$_{@}$(Mary, $\langle \lambda w \lambda Q. \exists x[\text{buy}_w(\text{Mary}, x) \& Q_w(x)]$,
$\lambda w \lambda x.\text{has-at-least-192-floors}_w(x)\rangle$)**

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$\xi(@) = \lambda w \lambda x.\text{has-at-least-192-floors}_w(x)$

Identification by extension (detective case)

> A murder has occurred on campus, people with offices in the left wing of the building might have seen it. Detective CS Foyle decides: 'I want to talk to someone who has his office in the left wing of the building.' Unbeknownst to him, all offices in the left wing belong to the English department, and only professors have offices.
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> **Foyle wants to interrogate an English professor.**

(21) $\mathbf{want_@(Foyle, \langle \lambda w \lambda Q. \exists x[Q_w(x) \& interrogate_w(Foyle, x)],}$
         $\mathbf{\lambda w \lambda x.\ English\text{-}professor_w(x) \rangle)}$

<u>try:</u> $\xi = \lambda\ w.\iota Q[Q = \lambda w' \lambda x.x$ has an office in the left wing of that building in $w]$

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<u>try</u>: $\xi = \lambda\ w.\iota Q[Q = \lambda w' \lambda x.x$ has an office in the left wing of that building in $w]$

$\xi(@)$: at each world w', 'has an office in the left wing of the building in w'' $(\neq \lambda w \lambda x.\text{English-prof}_w(x))$

Identification by extension (detective case)

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>
> **Foyle wants to interrogate an English professor.**

intuitively: about the extension $\Rightarrow$ could be treated via evaluation at @:

(21)   **Foyle wants to interrogate one of the English professors.**

reported property(@) $\subseteq$ reporting property(@)

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Detective case type

evaluation in actual world after all (but: subset)
de qualitate in terms of Cresswell & von Stechow: inapplicable to
detective-case type

The jacket example (1)

identification via extension is incorrect:

(21) **Adrian wants to buy a jacket like Malte's.**

$\not\approx$ . . . buy one of the jackets like Malte's, i.e. one of the actual green Bench jackets

$\approx$ . . . buy a jacket of the kind Malte's jacket instantiates.

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but: no identification of the reporting property either

(22)   **want$_{@}$(Adrian, $\langle \lambda w \lambda Q. \exists x[Q_w(x) \& buy_w(Malte, x)]$,
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from green Bench jacket we can't construe a ξ that

- picks out jacket like Malte's (at the actual world), and
- characterizes Adrian's bouletic alternatives (Adrian is in the *buy one of*-relation to $\xi(w')$ at all his bouletic alternatives w')

The jacket example (2)

- Adrian does not stand in any appropriate cognitive contact to the property of *being a jacket like Malte's*

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jacket like-sentences

Not about extension (vs. detective).
The reporting property identifies the reported property (vs. classical *de qualitate*-contexts like Burj Dubai)

The jacket example (3): *de specie*?

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  (24)   *Adrian wants to buy a Burberry jacket or a Boss jacket, he has not yet made up his mind.* **Adrian wants to buy an expensive jacket.**

  (25)   **Adrian wants to buy a Burberry jacket or a Boss jacket. #Malte wants to buy such a jacket, too.**

➡ Reading 3: ok; kind anaphora: out.

Towards a uniform version of *de qualitate*

"Uniform *de qualitate*"
reconsider the relation between reported property and reporting
property:

> failure i   pick out the same set of individuals at attitude
> worlds and at actual world
> (Burj Dubai: empty extensions)

> failure ii   the subject has an identifier for the reporting
> property w.r.t. which the attitude holds
> (*jacket like*: unidentified property; detective: only
> extension matters)

de qualitate reconsidered

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  1. the actual world
  2. actual worlds is not enough if the extension is empty:
     intuitively, we cannot describe the Burj Dubai situation by (26)

     (26)　　**Mary wants to buy a unicorn.**

de qualitate reconsidered

- for reporting of attitudes, replacing of reported property by reported property is okay if
  reporting and reported property are extensionally equivalent at "all relevant worlds"
  - the actual world
  - actual worlds is not enough if the extension is empty: intuitively, we cannot describe the Burj Dubai situation by (26)

    (26)   **Mary wants to buy a unicorn.**

▶ we need to take into account worlds at which the extension is non-empty

Extensionally equivalent at all relevant worlds

Attitude$_w(\mathbf{x}, \langle \mathcal{P}, \mathbf{Q} \rangle)$ iff there is a Q' s.t. at the w-closest worlds w' where $Q'(w') \neq \emptyset$:

1. $Q'(w') \subseteq Q(w')$
2. **PropAttitude**$_w(x, \lambda w'.\mathcal{P}_{w'}(Q'))$

Each world is closest to itself.

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- <u>worry</u>: what if at closest possible world the Burj Dubai is lower (instead of there being higher buildings)?
  compare counterfactual conditionals:

  (27)   **If there was a building that was one floor higher than the Burj Dubai, that building would have 192 floors.**

  Counterfactuals are context dependent; Reading 3, too (I think).

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- uniform *de qualitate*: evaluation of reporting property at the actual (or closest possible) world does not pick out the reported property itself, but merely imposes an requirement on what the latter could be
- uniform *de qualitate*: even if the extension is non-empty, the attitude is about a property (and not about the actual extension)

Conclusions and related matters

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- develop and test alternatives to unified *de qualitate*