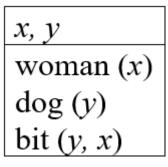
Representation of de re beliefs without external anchors

Ivan Rygaev Laboratory of computational linguistics Institute for information transmission problems RAS, Moscow irygaev@gmail.com

Actual problems of analytical philosophy, Tomsk, November 11-12, 2022

Discourse Representation Theory

- A woman was bitten by a dog
- DRS:



- DRS does not only represents a discourse
- But also propositional attitudes beliefs, desires, etc. (Kamp 1990)

De re and direct reference

- DRS is interpreted existentially
 - The language does not have individual constants
 - This corresponds to de dicto interpretation of all beliefs
- De re beliefs:
 - About specific individuals
 - Assume direct reference
 - Realize as singular propositions

External anchors

- Kamp introduces a notion of external anchor
 - To represent directly referential terms
 - They are created in particular by visual perception
- That man is a crook

```
\begin{array}{c} x \\ man (x) \\ visual\_appearance (x) \\ crook (x) \end{array}  {<x, a>}
```

• Anchors constrain the interpretation of variables to fixed individuals in the model

Problems

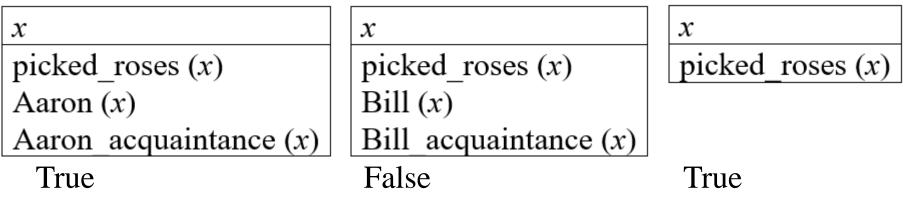
- Anchors are object of intermediate nature
- Where are they located?
 - Not in the representation (i.e. not in our mind)
 - Not in the model (i.e. not in the real world)
 - But somewhere in between (but where?)
- How can something inside the head refer to something outside the head? (Devitt 1990)

Thought experiment

- There are two twins Aaron and Bill
 - Aaron picked roses in the queen's garden
- He was witnessed by three people:
 - 1. The first saw him and understood that it is Aaron
 - 2. The second saw him and decided that it is Bill
 - 3. The third just saw a person who is stranger to him

Thought experiment

• Truth conditions (without anchors)



• In another possible world

- all happened the same way but with Bill instead of Aaron

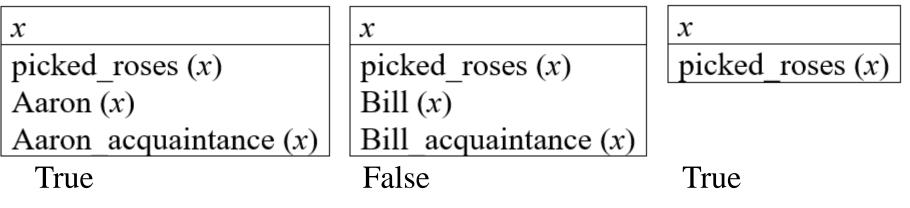
True

False

True

Thought experiment

• Truth conditions (with anchors) {<x, a>}



• In another possible world

- all happened the same way but with Bill instead of Aaron

False

False

False

Anaphora as anchor

- Referential expression serves to find an existing discourse referent
 - New information is added to it
 - And adjoined to the old information
 - Which already includes unique properties
 - Such as time and location of appearance
 - What is interpreted in the model is the whole "file card" of the discourse referent
 - That guarantees the uniqueness of the interpretation (de re)

Anaphora as anchor

• A doctor arrived

 $\frac{x}{\text{doctor } (x)}$ arrived (x)

The doctor arrived

x doctor (x) arrived (x) acquaintance (x)

- Moreover:
 - Interpretation in the model is a theoretical tool
 - The agent does not perform such an operation
 - For him the discourse referent itself is the representative of the very individual about whom he has a de re attitude

De re – de dicto continuum

- De re vs de dicto
 - No clear distinction can be made
 - The more information the more de re
 - Including descriptive information (Maier 2009)
- Mary wants to:
 - marry a sailor
 - marry a sailor with a long beard
 - marry a sailor with a long beard from the neighbor village
 - marry a sailor with a long beard from the neighbor village whom she have seen once from the distance

Conclusions

- External anchors
 - Objects of strange nature in the middle between the representation and the model
 - Lead to incorrect truth conditions
- Interpretation of attitudes as de re
 - Is provided by linking new information to existing one
 - The entire amount of information on the discourse referent provides its unique interpretation
 - The more information has contains the referent, the more tendency we have to interpret it as de re

References

- 1. Devitt, M. (1990). Meanings just ain't in the head. Meaning and method: Essays in honor of Hilary Putnam, 79-104.
- 2. Kamp, H. (1990). Prolegomena to a structural account of belief and other attitudes. Propositional attitudes: The role of content in logic, language, and mind, 27-90.
- 3. Maier, E. (2009). Proper names and indexicals trigger rigid presuppositions. Journal of semantics, 26(3), 253-315.

Thanks for your attention! Questions?

Ivan Rygaev | APAP 2022