Session 8 – De Re / De Dicto with Intensional Verbs

1. Data and Terminology

• Ambiguity:

The class of intensional or opaque verbs allows for an ambiguous interpretation of their NP-complements:

(1) a. Max is looking for a toy.
   i. There is a (specific) toy that Max is looking for (e.g. his favourite toy)  
   → transparent (de re)
   ii. Max is looking for some toy or other.  → opaque (de dicto)

   i. There is a specific book Martha wants for Christmas.  → transparent (de re)
   ii. Martha wants just some book for Christmas, (she does not care which one).
   → opaque (de dicto)

• Transparent verbs like buy are unambiguous and only have a transparent reading.

(2) John bought a book for Christmas

• The same ambiguity is found with NP-expressions that are embedded in the complement clause of intensional verbs:

(3) Julia wants to marry a Norwegian.  i. He is tall and blond. (TR, de re)
    ii. Hopefully, she will meet one soon. (OP, de dicto)

• De re/ de dicto-Ambiguities also show up with definite NPs

(4) John is seeking the boss.
   i. John is seeking the unique person that is the boss.
   ii. There is a particular person that John is looking for (without realizing that this person is the boss)

(5) John is looking for the mole in the department.
   → True if John is looking for Ortcutt without being aware of Ortcutt being the mole.

• Opaque/De Dicto-readings come without existential entailment:

(6) a. #Caroline caught a unicorn.
    b. Caroline seeks a unicorn.
   → (6b) OK on opaque/de dicto construal: Caroline seeks something with the unicorn property
   → transparent verbs like catch entail the existence of their NP-denotation: #(6a)

• Opaque/Intensional verbs block the substitution of extensionally equivalent NPs:

(7) a. John is looking for the mole in the department. <=/=> b. John is looking for Ortcutt.

2. A Syntactic Account: Decomposition and Quantifying In (Quine-Montague)

• Observation: Intensional transitive verbs have propositional counterparts:

(8) a. Caroline is seeking a neighing unicorn.
    b. Caroline is trying to find a neighing unicorn.
Intensional transitive verbs like *seek* can be lexically decomposed into *try to find* (Quine 1960); alternatively, decomposition can be achieved by means of meaning postulates (Montague 1973).

(8b’) \(\text{try' }_i(\text{caroline}, [\lambda_j. \exists y [\text{unicorn' }_j(y) \land \text{neigh'}_j(y) \land \text{find'}_j(\text{caroline}, y)]])\)

= Caroline is trying to make that proposition true that consists of all worlds in which there exists a unicorn that neighs and is found by her, Caroline.

\(\text{try}\) denotes a relation between individuals and propositions

- Intensional transitive verbs select for intensionalized quantifiers

(9) **Opacity (Quine 1960):**

The referentially opaque verb *seek* can be decomposed into a propositional attitude (\(\text{try}\)) and a binary relation among individuals (\(\text{find}\)).

\(\text{seek}\) denotes a certain (decomposable) relation between an individual (= the subject denotation) and an intensional quantifier (= the object denotation).

it is essential that the object denote a quantifier, for otherwise it would not get the narrow scope for the opaque reading (Zimmermann 1993).

(10) \([\text{[seek]}] = \lambda Q \in D_{\text{ss}, \langle \text{ss}, \langle \text{ss}, \text{et}, \rangle, \text{t} \rangle}, \lambda x \in D_{\text{e}} \text{. try'}_i(x, [\lambda j \in D_{\text{e}}. Q(\lambda k \in D_{\text{e}}, \lambda y \in D_{\text{e}}. \text{find'}_k(x, y))])\]

the intensional character of opaque verbs, such as *seek*, follows from the presence of an attitude expression (here: *try*) in their (decomposed) lexical meaning

- Accounting for the ambiguity: Quantifying in (cf. Montague 1973)

(11) John seeks a unicorn:

i. \([\text{John [seeks [ a unicorn]]]}\)

\(\text{object NP directly combines with transitive verb}\)
\(\text{object NP takes scope under opaque verb:}\)
\(\text{de dicto: John seeks an entity with the property of being a unicorn}\)
\(\text{try'}_i(\text{john'}, [\lambda j \in D_{\text{e}}. \exists y (\text{unicorn' }_j(y) \land \text{find'}_j(\text{john'}, y))])\)

ii. \([\text{a unicorn}]_1 [\text{John [seeks } t_1]]\)

\(\text{object NP is quantified in after QR has applied}\)
\(\text{object NP takes scope over opaque verb}\)
\(\text{de re: There is an entity with that is a unicorn such that John seeks it}\)
\(\exists y (\text{unicorn' }_i(y) \land \text{try'}_i(\text{john'}, [\lambda j \in D_{\text{e}}. \text{find'}_j(\text{john'}, y))])\)

3. **Semantic Accounts: Changing the Semantic Type of the (Opaque) Verb**

A. **Zimmermann (1993)**

- **The problem of overgeneration:**

There are no opaque readings with genuine quantifying expressions, such as e.g. *every/each/most/ at most n NP* →

(12) a. Alain is seeking each comic book. \(\Rightarrow\) only de re/transparent reading
b. Alain is seeking at most five comic books. \(\Rightarrow\) only de re/transparent reading
the ambiguity only shows up with two classes of NPs: indefinite and definite NPs:

(13) a. Jones is seeking a secretary.

b. Jones is seeking the boss.

both classes of NPs can be conceived of as property denoting.

• The PROPERTY-BASED account:

Opaque verbs denote relations between individuals and properties

(14) \[
\begin{align*}
\text{[[seek]]} &= \lambda P \in D_{\text{prop}}. \lambda w. \lambda x \in D_e. (\text{seek}_w(x, P))
\end{align*}
\]

Advantages of the analysis:

i. The absence of an individual-type object argument (P is just a property) accounts for the lack of existential entailment and the failure of substitutivity (different properties are typically not coreferent across different indices)

ii. Opaque verbs do not have to be decomposed into an attitude verb and a relation between individuals.

iii. Quantificational complement NPs of opaque verbs cannot be opaque as they cannot directly combine with the verb and must scope out by some alternative semantic mechanism.

• Additional consequence:

As in the syntactic analysis, the opaque (de dicto) reading is basic and the transparent (de re) reading is semantically derived from it by semantic inferencing

This predicts that whenever there is an opaque reading, there should also be a corresponding transparent reading (systematic ambiguity)

B. McNally & van Geenhoven (2005): Generalizing the Property-Account

• Problems with Zimmermann’s account

i. Bare plural NPs, which can also be perceived of as property-denoting (in some contexts), do give rise to existential entailments with transparent verbs:

(15) Bill caught rabbits behind the house. (==> there is s.th. Bill caught)

Transparent transitive verbs (optionally) denote relations between individuals and properties as well, in which case they give rise to a non-specific interpretation of the object NP.

ii. Certain types of non-quantificational NPs only give rise to opaque readings, pace Zimmermann’s prediction.

(16) Bill is looking for books on Danish cooking.

i. Max tries to find books on Danish cooking.

ii. #There are books on Danish cooking such that Max tries to find them.

iii. Cross-linguistic evidence: Certain types of verbs in West Greenlandic only give rise to opaque readings, pace Zimmermann’s prediction:
   V.ABS bike-FUT-look.for-IND-[+tr]-3SG  
   i. ‘Vittus is looking for just any bike.’  
   ii. # ‘There is/are bike(s) such that Vittus is looking for it/them.’

   b. Juuna-p atuagaq ujar-p-a-a. (Bittner, p.c.)  
   J.-ERG book.ABS.SG look.for-IND-[+tr]-3SG.3SG  
   i. ‘Juuna is looking for the book.’ (preferred reading)  
   ii. ‘Juuna is looking for a specific book.’ (OK with context)

→ Transitive verbs can be lexically specified as [+/- opaque]
→ Detransitivizing the extensionally transparent verb *ujar* in (17b) by means of the antipassive morpheme, makes the verb opaque again:

(18) Juuna atuakka-mik ujar-lir-p-u-q. (Bittner, p.c.)  
   J.ABS book-INST.SG look.for-AP-IND-[+tr]-3SG  
   ‘Juuna is looking for any book.’ (preferred reading)

→ From a morphological perspective, the transparent use of *ujar* is the more basic one.

• *The alternative account:*
  
  i. In principle, any transitive verb can denote relations between individuals and properties.  
     *Lexical Ambiguity (by general Type Shifting Rules)*
  
  → The property nature of the object complement is not the sole determining factor for the origin of opaque readings
  
  ii. Only transitive verbs that additionally have a modal component in their lexical meaning give rise to opaque readings.

• *Application:*

(15) Bill caught rabbits behind the house.  
     **TRANSPARENT, NON-SPECIFIC** → (19b)

(19) a. [[catch\_1]] = λw.λy∈D.λx∈D. (catch\_w(x,y))

   b. [[catch\_2]] = λP∈D\_{<s,<et>>}λw.λx∈D. ∃y (catch\_w(x,y) ∧ P\_w(y))

→ The existential force associated with the object argument is contributed by the verb
→ An analogous lexical ambiguity must be assumed for *look for* (transparent), cf. (20a) and *look for* (opaque), cf. (20b).

(20) a. [[look for\_1]] = λw.λy∈D.λx∈D. look\_for\_w(x,y)  
     → **TRANSPARENT READING**

   where look\_for\_w(x,y) = 1 iff in the world of evaluation w there is an individual x and an individual y such that x is trying in w to bring it about that, in some world w’, x finds y in w’

   b. [[look for\_2]] = λP∈D\_{<s,<et>>}λw.λx∈D. look\_for\_w(x,P)  
     → **OPAQUE READING**

   where look\_for\_w(x,y) = 1 iff in the world of evaluation w an individual x is trying in w to bring about that there is an individual y in world w’ which x finds in w’ and which has property P in w’.

→ In West Greenlandic, the two meanings are lexicalized in form of two different verbal stems: *ujar* vs. *siur*
• **Conclusion:**

The transparent/opaque ambiguity with opaque verbs follows from a lexical ambiguity in the meaning of the verb itself.

Montague/Quine: *Structural Ambiguity* (construable as syntactic ambiguity)

Zimmermann: *Semantic Ambiguity*, where the two readings are related by general inferencing procedures.

McNally & van Geenoven: *Lexical ambiguity* in the verb (individual or property object argument) + QR with QP-objects with obligatory de dicto interpretation

The latter two approaches assume a special semantic type for the transitive verb and a *type shift* from <et,t> (or <e>) to <et> with indefinite and definite NPs

5. **Another Approach to De Re/ De Dicto with definite descriptions: Manipulating world or situation variables**

(Elbourne 2005 following Bäuerle (1983) and many others)

• **Basic Assumptions:**

i. World variables are represented as syntactic entities

ii. Each predicate (verb, noun, adjective, preposition) has an argument place for a possible world variable.

iii. The world-binders in the syntax (\(\lambda\)-operators) are interpreted by means of *intensional abstraction*, which ensures that the predicates will be evaluated with respect to a particular world index \(w\).

iv. There is a special variable \(w_0\) that is referential and picks out the actual world.

• **Deriving the Ambiguities in situ**

The existence of world variables and the possibility of intensional abstraction allows for the derivation of both the *de re* (transparent) and the *de dicto* (opaque) reading for definite DPs of type <e> in situ → *no movement*

(21) Mary believes that her neighbor is a spy.

i. *de re:* Mary believes of a particular individual (who also happens to be her neighbor, possibly unbeknownst to her) that he is a spy.

ii. *de dicto:* Mary believes that there is somebody who is her neighbor and a spy.

(22) *de re:*

a. \([\lambda w_1 \text{ Mary believes } w_1 [\lambda w_2 [[\text{her neighbor } w_0]] [\text{ is a spy } w_2]]]]\]

b. The proposition true of world \(w_0\) iff all worlds compatible with Mary’s beliefs in \(w_0\) are members of the set of worlds \(w_2\) such that the unique \(x\) such that \(x\) is Mary’s neighbor in \(w_0\) is a spy in \(w_2\).

(23) *de dicto:*

a. \([\lambda w_1 \text{ Mary believes } w_1 [\lambda w_2 [[\text{her neighbor } w_2]] [\text{ is a spy } w_2]]]]\]
b. The proposition true of world $w_0$ iff all worlds compatible with Mary’s beliefs in $w_0$ are members of the set of worlds $w_2$ such that the unique $x$ such that $x$ is Mary’s neighbor in $w_2$ is a spy in $w_2$.

→ The only difference between the two readings is whether the definite NP her neighbor is evaluated at world $w_0$ (de re) or at world $w_2$ (de dicto).

• Another argument against syntactic scoping (and pro world variables) (due to Bäuerle 1983, see also Elbourn 2005)

(24) can accurately describe the scenario in (25):

(24) George believes that a Mancunian woman loves all the Manchester United players.

(25) George sees some men on a bus in Manchester who happen to constitute the current ManU football team. George does not know who they are; that identification is provided by the speaker. George forms the belief that there is at least one Mancunian woman who loves all of these men without believing of any particular woman that she does.

→ indefinite NP a Mancunian woman: opaque → does not scope out
→ universally quantified DP all the ManU players: transparent → scopes out
→ prediction: the universally quantified DP should take scope over the existential indefinite NP

(26) #For each ManU player $y$, George believes there is a Mancunian woman who loves $y$.

(27) [$\lambda w. \text{George believes } w [\lambda w'. \text{a Mancunian woman } w' \text{ loves } w' \text{ all the ManU players } w_0]$]

• Transparent readings from within syntactic islands

(28) a. Someone thinks that there’s champagne in those glasses and that everyone drinking water is getting drunk. ($\exists > \forall$, $^* \forall > \exists$)

b. John believes that there’s vodka in that glass and that the man drinking water is getting drunk.

6. Overall Conclusion

There are some arguments against a movement account for the de re/ de dicto ambiguity that is found with indefinite and definite DPs in the presence of opaque verbs.

→ We can derive the relevant readings in situ by assuming transitive verbs to denote relations between individuals and properties, or – at least with definite DPs – by assuming world variables in the syntax that can be bound by the actual world (de re) or by another possible world (de dicto).