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) \rightarrow transparent (de re)
 - ii. Max is looking for some toy or other. \rightarrow *opaque (de dicto)*
 - b. Martha wants a book for Christmas.
 - i. There is a specific book Martha wants for Christmas. \rightarrow *transparent (de re)*
 - ii. Martha wants just some book for Christmas, (she does not care which one). \rightarrow 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.
- \rightarrow 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
- \rightarrow 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') try'_i (caroline, $[\lambda_j \exists y [unicorn'_i(y) \land neigh'_i(y) \land find'_i(caroline, y)]])$
 - = 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.
- \rightarrow 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 (= try) and a binary relation among individuals (= find).
- \rightarrow seek denotes a certain (decomposable) relation between an individual (= the subject denotation) and an intensional quantifier (= the object denotation).
- \rightarrow 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) $[[\text{seek}]] = \lambda Q \in D_{\langle s, \langle \langle s, \langle et \rangle \rangle, t \rangle \rangle}. \quad \lambda x \in D_e. \text{ try'}_i(x, [\lambda j \in D_s. Q_j(\lambda k \in D_s. \lambda y \in D_e. \text{ find'}_k(x, y))])]$
- \rightarrow 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. [John [seeks [a unicorn]]]
 - \rightarrow object NP directly combines with transitive verb
 - \rightarrow object NP takes scope under opaque verb:
 - \rightarrow *de dicto:* John seeks an entity with the property of being a unicorn

try'_i(john', $[\lambda j \in D_s$. $\exists y (unicorn'_j(y) \land find'_j(john', y))])$

- ii. [a unicorn] 1 [John [seeks t₁]]
 - \rightarrow object NP is quantified in after QR has applied
 - \rightarrow object NP takes scope over opaque verb
 - \rightarrow *de re:* There is an entity with that is a unicorn such that John seeks it

 $\exists y (unicorn'_i(y) \land try'_i(john', [\lambda j \in D_s. find'_j(john', y))])]$

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 \rightarrow

(12) a. Alain is seeking each comic book. → only de re/transparent reading
b. Alain is seeking at most five comic books. → only de re/transparent reading

- \rightarrow 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.

- \rightarrow both classes of NPs can be conceived of as property denoting.
- The PROPERTY-BASED account:

Opaque verbs denote relations between individuals and properties

- (14) [[seek]] = $\lambda P \in D_{\langle s, \langle e, t \rangle \rangle}$. $\lambda w. \lambda x \in D_e.$ (seek_w(x,P))
- \rightarrow 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:

- (17) a. Vittu cykili-ssar-**siur**-p-u-q.
 - 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)
- \rightarrow Transitive verbs can be lexically specified as [+/- opaque]
- \rightarrow 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)
- \rightarrow 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 \rightarrow (19b)

(19) a. $[[\operatorname{catch}_1]] = \lambda w.\lambda y \in D.\lambda x \in D. (\operatorname{catch}_w(x,y))$

b. [[catch₂]] = $\lambda P \in D_{\langle s, \langle et \rangle \rangle}$. $\lambda w. \lambda x \in D$. $\exists y (catch_w(x,y) \land P_w(y))$

- \rightarrow 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]] = $\lambda w.\lambda y \in D.\lambda x \in D$. look for_w(x,y)) \rightarrow 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]] = $\lambda P \in D_{\langle s, \langle et \rangle \rangle}$. $\lambda w. \lambda x \in D$. look for_w(x,P)) \rightarrow 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:	<i>Semantic Ambiguity</i> , where the two readings are related by general inferencing procedures.
McNally & van Geenoven:	<i>Lexical ambiguity</i> 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 (λ -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 \rightarrow 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. $[\lambda w_1 \text{ Mary believes } w_1 [\lambda w_2 [[her neighbor w_0]] [is a spy w_2]]]]$
 - 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. $[\lambda w_1 \text{ Mary believes } w_1 [\lambda w_2 [[her neighbor w_2]] [is a spy w_2]]]]$

- 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 Elbounre 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.
- \rightarrow indefinite NP *a Mancunian woman*: *opaque* \rightarrow does not scope out
- \rightarrow universally quantified DP all the ManU players : transparent \rightarrow 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) [λw . George believes w [that λw '. a Mancunian woman w' loves w' 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. (∃>∀, *∀>∃)
 - 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).