Opacity Assignment

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1   Intro

Assignment: Kearns (chapter 7) 1, 2, 3

2   Desire and reading in the mind of Clive

(1)   Clive wants to read the book June is reading.

   Two readings

De dicto reading : June has been reading *Das Kapital* by Karl Marx and
   has been describing it in glowing terms. Everything she tells him is
   of the keenest interest to Clive. The Labor Theory of Value seems to
   capture an essential truth about human existence. June has a fabulous
   memory and a fabulous command of this difficult material and she
   has told Clive a lot about it. Two things she hasn't told him are the
   title and author of the book. She tells Clive this is because she wants
   to surprise him, but the truth is she is a little worried about what his
   reaction will be when she tells him that what she has been teaching him
   is called Marxism. For his part, Clive is very eager to learn the identity
   of the mystery author, and eager to begin reading on his own. What
   will happen next? No telling, but it appears that (1) could truthfully
   describe this situation.

De re reading : Clive wants to read *Das Kapital* by Karl Marx. He hasn't
   read any of it yet, because it is so **very** thick, but as soon as summer
   vacation rolls around, he is going to get started. Unbeknownst to Clive,
   his girlfriend June is already reading *Das Kapital*.

In the semantics below, we treat *the book June is reading* as if it were *a book June is reading*, ignoring the distinction between definites and indefinites. This doesn't affect our main point:

De re $\exists x \, [\, \text{book}(x) \, \& \, \text{read}(\text{j}, \, x) \, \& \, \text{want}(\text{c}, \text{read}(\text{c}, \, x)) \,]$
De dicto $\text{want}(\text{c}, \exists x \, [\, \text{book}(x) \, \& \, \text{read}(\text{j}, \, x) \, \& \, \text{read}(\text{c}, \, x) \,])$

The scope of an NP is the sentence it is combined with in logical form. It is clear that the difference between the two logical translations above is due to a scope ambiguity. The translation of the NP *the book June is reading* is

$$\exists x \, \text{book}(x) \, \& \, \text{read}(\text{j}, \, x)$$

In the de re reading, the scope of the NP is roughly *Clive wants [Clive reads x]]*, or

$$\text{want}(\text{c}, \text{read}(\text{c}, \, x))$$

In the de dicto reading, the scope is just *[Clive reads x]*:

$$\text{read}(\text{c}, \, x)$$

The de re scope is the translation of the entire sentence (1) [with the NP translation moved out], and the de dicto scope is the translation of the sentence following *want*: PRO *to read x* (with PRO understood as Clive) and sentence translations is what NP scopes always seem to be. So the de re/ de dicto ambiguity looks very much like a scope ambiguity. Happy day.

3   Spies up the stairs

We're discussing *existential commitments*. An "existential commitment" is fancy name for a certain kind of entailment we've been calling an existence entailment.

A dog barked entails *A dog existed* That's an existence entailment.

John bought a Buick entails *A Buick existed* Also an existence entailment.

John is looking for a sloop does not entail *A sloop exists*. No existence entailment. No existential commitment. So certain contexts seem to block existence entailments.

John believed that a dog had barked does not entail *A dog existed*. Verbs like *believe* and *seek* block existence entailments. Let's be on the lookout for such verbs.

John believed that the dog had barked Generally definites have a stronger tendency to carry existential commitments than indefinites. This sentence seems to carry an existential commitment.

Now consider:

(2)   a. Ralph thinks the man who lives upstairs is a spy.
       b. Ralph thinks a man who lives upstairs is a spy.

The story we're told is that Ralph is a little paranoid. The flat upstairs is empty. So, in fact, there is no man up the stairs. The first question is: Can (2a) be true in those circumstances? If the sentence carries an existential entailment, it can't be true if there is no man upstairs. When an entailment of a sentence is false, the sentence must be false.

The other way of putting this is: If (2a) is true in the given circumstances, then the definite NP *the man who lives upstairs* carries **no existential commitment** in this sentence. Perhaps it's blocked by the verb *thinks*. [Comment: That's a good answer to the question. Notice the answer is about **the sentence, and whether the sentence can be true or false in a given set of circumstances**. Many of you tell interesting stories in your answers but don't address the questiom of whether **the sentence** is true or false in the circumstances of the story.]

If, on other hand you think (2a) can't be true if the man is imaginary, then *thinks* is not blocking the existential commitment. Maybe *think* blocks existential commitments with indefinites as in (2b), but not with definites. That would be a good answer too.

4   Opacity

4.1   Discussion and Definitions

(3)   a. Mary hoped <u>the man she met in the book shop</u> would ring her up.
       b. <u>the man she met in the book shop</u> = <u>the notorious arms dealer</u>
       c. Mary hoped <u>the notorious arms dealer</u> would ring her up.

If the truth of (3a) and (3b) doesn't guarantee the truth of (3c), then

Mary hoped _____ would ring her up.

is an opaque context. Note it's **the context** that's opaque, not the NP.

Consider the following story. Mary was rather charmed by the soft-spoken man in the bookstore. She gave him her phone number and hopes he will call her. Unbeknownst to Mary, the man in the bookshop is a notorious arms dealer. Mary would never want to talk to a notorious arms dealer.

So based on this set of facts, we have:

    True   Mary hoped <u>the man she met in the book shop</u> would ring her up.
    True   <u>the man she met in the book shop</u>= <u>the notorious arms dealer</u>
    False   Mary hoped <u>the notorious arms dealer</u> would ring her up.

So (c) can be false, even while (a) and (b) are true. This means substitutivity has failed. You cannot substitute an expression that refers to the same entity for <u>the man she met in the book shop</u> and preserve truth value.[1]

Conclusion: Truth is not preserved in this context when expressions that refer to the same entity are interchanged. We say **truth is not preserved under substitution of identicals**. Therefore, this context is **opaque**.

Discussion: Based on the discussion in Section 3 and this one, existential commitment and opacity are **two different semantic properties**, and there are two different tests for them. Make sure you understand that. Review the previous discussion until that is clear. Having said that, the two semantic properties often go together. Consider the verb *hope*. We just showed that *Mary hoped _____* is an opaque context. Are existential commitments also suspended in the context *Mary hoped _____*? Consider *Mary hopes a unicorn will approach her*. Does that entail the existence of a unicorn?

4.2 Example a.

(4)   Marcia hopes <u>the winner of the competion</u> will talk to her.

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[1] You can see where this all is headed. The fast-talking Interpol agent who has been tailing the arms dealer talks Mary into helping him get the goods on the arms dealer, Mary falls in love with the Interpol agent, and off into the sunset they waltz. In a darker more interesting version made on a much lower budget, she falls in love with the arms dealer, double crosses the Interpol agent, and ends up fencing diamonds in Aruba.

Facts: Marcia is a reporter for a great metropolitan TV news team. She used to cover the crime beat and, after budget cuts and significant reorganization, is now reduced to covering high school sporting events. She has nevertheless resolved to put on a good face and do a job and she hopes the winner of today's competition will talk to her and give good sound bites. Unbeknownst to her, the winner of the competition will be her high school boy friend, who dumped her, and whom she never wants to see again, let alone talk to.

Truth: True   Marcia hopes <u>the winner of the competion</u> will talk to her.
             True   <u>the winner of the competion</u> = <u>her high school boyfriend</u>
             False Marcia hopes <u>her high school boyfriend</u> will talk to her.

Conclusion: Truth is not preserved under subsitution of identicals. Therefore, this context is **opaque**.

4.3   Example d.

(5)   Then Bob said, "<u>Your husband</u> has had an accident."

Facts: Bob said exactly these words to Marcia. "Your husband has had an accident." Marcia's husband is Fred, but Bob did not say: "Fred has had an accident."

Truth: True   Then Bob said, "<u>Your husband</u> has had an accident."
             True   <u>Your husband</u> = <u>Fred</u>
             False Then Bob said, "<u>Fred</u> has had an accident."

Conclusion: Truth is not preserved under subsitution of identicals. Therefore, this context is **opaque**.

4.4   Example e.

(6)   They needed a signature from <u>Clive's wife</u>.

Facts: It's World War I and Clive Smedlap's wife is Mata Hari (whose real name is Margaretha Geertruida Zelle McLeod). Clive has just died (under mysterious circumstances, of course). They need a signature from his wife in order to pay out the insurance money. The papers need to be signed "Mrs. Clive Smedlap", or no money gets paid.

Truth: True   They needed a signature from <u>Clive's wife</u>.
        True   <u>Clive's wife</u> = <u>Mata Hari</u>
        False   They needed a signature from <u>Mata Hari</u>.

Conclusion: Truth is not preserved under subsitution of identicals. Therefore, this context is **opaque**.

Discussion: *Need* seems to create an opaque context. Think of other examples with *need*. Also think about existential commitment with *need*.

4.5   Example g.

(7)   Clive told <u>my brother</u> to shove off.

Facts: My brother was Kim Philby, a high ranking member of British intelligence who worked as a spy for the Soviet Union. Clive was totally unaware of this. Nevertheless, Clive said to my brother, "Shove off, mate!"

Truth: True   Clive told <u>my brother</u> to shove off.
        True   <u>my brother</u> = <u>the Soviet spy</u>
        True   Clive told <u>the Soviet spy</u> to shove off.

Conclusion: Truth **is** preserved under substitution of identicals. Therefore, this context is **transparent**.

Discussion: Whether he knew my brother was the Soviet spy or not, he still told the Soviet spy to shove off. Most contexts are transparent. Under the facts given, *My brother stumbled down the stairs* entails *The Soviet spy stumbled down the stairs.* Think about what kind of contexts introduce opacity.