

Problems: Part 1, Part 2, Part 3

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Worked with Dylan Lewis, Corby Rosset, Lawrence Sonko

Part 1

Gricean Reasoning

a. What does B's utterance implicate and how is this derived in the Gricean framework?

- (a) A: Do you have a siamese?
B: I have a cat.
B': No, I don't.

b. Given that B's utterance does not answer A's question semantically, why would B choose to respond this way as opposed to simple "no" as in B'?

Solution:

- B's utterance implicates that B has a cat that is not a siamese cat. We can test this implicature using the cancellation test. Let S_1 = "I have a cat" and let S_2 = "B has a cat that is not a siamese cat". If we negate S_2 , we get $\neg S_2$ = "B does not have a cat that is not a siamese cat". We see that we can combine $\neg S_2$ and S_1 and not have contradictory statements, thus it is not an entailment.

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confused manner:
flouting Manner is
not a crazy thing to
say here but it would
give rise to a
different implicature
from the one that
arises via flouting
Quantity which you
have described
(namely that
Siameses are bad
examples of cats, or
somehow don't
count as cats)

Through the Maxim of Relevance, we can see that the utterer, in a normal conversation, would respond in a way that is relevant to the question asked. That is, the utterer of B would give an informative sentence about the question to obey this cooperative principle. There is no reason to believe B is flouting the Maxim of or Quality because the sentence can very well be true. However, B may be purposefully flouting the Maxim of Manner to achieve the intended effect of implication. That is, the utterer is not avoiding ambiguity on purpose in order to get across that they do not have a siamese cat without explicitly saying it. Not only this, B may also be flouting the Maxim of Quantity, by providing extra information about their cat when it does not pertain to the question. This extra information, without answering the question further implies that B does not have a siamese, leaving the hearer to come to that conclusion without ever hearing it. b

- B may choose to answer in this way for many reasons. This response not only implies an answer to the question, but it also provides extra information. That is, a conversation may continue from B where the utterer of A may ask what kind of cat, which is not a siamese, does the utterer of B have? From B' we do not know if the utterer of B' even has a cat, we just know they do not have a siamese.

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what are some possible alternatives that B could have uttered and how do they contribute to the calculation of the implicature? Exactly how is B' less informative, as you imply

Part 2

For this problem, you may use the lambda notebook (grad students must use it). Note that it does not have fully implemented presuppositions, though you can use ι (example notation: ‘ $\text{Iota } x: P(x)$ ’). So if you do this, you’ll need to describe your presuppositions separately from the formulas.

In this problem you will explore the structure of a possessive DP, as in:

- (a) Alfonso talked to **Joanna’s mother**.
- (b) Alfonso borrowed **Joanna’s book**.
- (c) Alfonso kicked **Joanna’s chair**.

- a. Warmup: calculate the truth-conditions of $[[\text{Alfonso borrowed the book}]]^c$. Use the following entry for “the”:

$$[[\text{the}]]^{c,a} = \lambda f_{\langle e,t \rangle} : (\exists! x. x \in C_c \wedge f(x) = 1). (\iota x. x \in C_c \wedge f(x) = 1)$$

$$\text{Solution: } [[[\text{borrowed [the book]}] \text{ Alfonso}]]_t = \text{Borrow}(a_e, \iota x_e. (\text{Book}(x_e) \wedge (x_e \in c_{\{e\}})))$$

- b. There are (at least) two kinds of Ns involved in possessive constructions, instantiated by “mother” and “book” above (“chair” is like “book”). $[[\text{Mother}]]$ and $[[\text{book}]]$ have different types - what are they? What do these two types of Ns respectively contribute to a possessive DP? What relationships between the possessor and the possessee are (truth-conditionally) possible?

$$\text{Solution: First let us define } [[\text{mother}]] = [[\text{mother}]]_{\langle e, \langle e, t \rangle \rangle} = \lambda x_e. \lambda z_e. \text{Child}'(x_e, z_e)$$

$[[\text{Mother}]]$ is of type $\langle e, \langle e, t \rangle \rangle$ and $[[\text{book}]]$ is of type $\langle e, t \rangle$. The $[[\text{Mother}]]$ -type of N contributes a presupposition that there exists a mother and there exists a singular entity that is the mother of x, whereas the second contributes only any non-specific book that is owned by x. With this, we have the possibility of someone who owns an object (like a book or chair) and someone’s relationship to someone (like a mother or wife).

- c. For doing compositional analysis, assume as a baseline that the DP “Joanna’s mother” has the following surface structure: (diagram)

What kind of denotation should the whole DP have (suggest both a type and a characterization of the content of that meaning)? What denotation (& semantic type) do you need to give to “s” and “book” / “mother” to get the right DP denotation, working with the surface form?

- Assume that the possessor (‘Joanne’) in the above tree always has type e .
- Don’t forget that possessive structures are a presupposition trigger – your answer should address the question of what presupposition(s) this morpheme triggers.
- Proposing an ambiguity is fine. E.g. you might want to say that $[[\text{'s}]]$ is ambiguous in order to handle the different types of $[[\text{mother}]]$ and $[[\text{book}]]$. (There are ways of solving it without ambiguity, though)

don't use brackets with atomic types

good, but you forgot
to spell out what the
denotation for POSS
would need to be in
order to compose
with book type
nouns
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Solution: Proposing an ambiguity, we say that a DP will have type $\langle e \rangle$. “s” will have two types: $\langle \langle e, t \rangle, \langle e, e \rangle \rangle$ and $\langle \langle e, \langle e, t \rangle \rangle, \langle e, e \rangle \rangle$ for the book and the mother examples given respectively. This is because $[[\mathbf{mother}]]$ and $[[\mathbf{book}]]$ have different types and will give different types. It will have the denotation $[[\mathbf{s}]] = [[\mathbf{POSS}]]_{\langle \langle e, \langle e, t \rangle \rangle, \langle e, e \rangle \rangle} = \lambda f_{\langle e, \langle e, t \rangle \rangle} . \lambda x_e . \iota y_e . f_{\langle e, \langle e, t \rangle \rangle}(x_e)(y_e)$. Accordingly, we give book and mother separate types: $\langle e, \langle e, t \rangle \rangle$ and $\langle e, t \rangle$ where we define their denotations as $[[\mathbf{mother}]] = [[\mathbf{mother}]]_{\langle e, \langle e, t \rangle \rangle} = \lambda x_e . \lambda z_e . Child'(x_e, z_e)$ and then define $[[\mathbf{book}]] = \lambda x_e . Book'(x)$.

d. (grads / extra credit undergrads)

e. Use your account of possessives (as well as the analysis of relative clauses) to calculate the truth-conditions and presuppositions of the following sentence (showing your steps; that is, provide a lexicon and a step-by-step derivation) A doctor met Joanna's mother

Solution: $[[a]]_{\langle \langle e, t \rangle, \langle \langle e, t \rangle, t \rangle \rangle} = \lambda f_{\langle e, t \rangle} . \lambda g_{\langle e, t \rangle} . \exists x_e . (f_{\langle e, t \rangle}(x_e) \wedge g_{\langle e, t \rangle}(x_e))$

$[[\mathbf{doctor}]]_{\langle e, t \rangle} = \lambda x_e . Doctor(x_e)$

$[[\mathbf{met}]]_{\langle e, \langle e, t \rangle \rangle} = \lambda x_e . \lambda y_e . Met(y_e, x_e)$

$[[\mathbf{Joanna}]]_e = j_e$

$[[\mathbf{POSS}]]_{\langle \langle e, \langle e, t \rangle \rangle, \langle e, e \rangle \rangle} = \lambda f_{\langle e, \langle e, t \rangle \rangle} . \lambda x_e . \iota y_e . f_{\langle e, \langle e, t \rangle \rangle}(x_e)(y_e)$

$[[\mathbf{mother}]]_{\langle e, \langle e, t \rangle \rangle} = \lambda x_e . \lambda z_e . Child(x_e, z_e)$

For the query $((a * \mathbf{doctor}) * (\mathbf{met} * (\mathbf{Joanna} * (\mathbf{POSS} * \mathbf{mother}))))$.trace():

- $[[a]]_{\langle \langle e, t \rangle, \langle \langle e, t \rangle, t \rangle \rangle} * [[\mathbf{doctor}]]_{\langle e, t \rangle}$ leads to $[[[a \mathbf{doctor}]]]_{\langle \langle e, t \rangle, t \rangle} = \lambda g_{\langle e, t \rangle} . \exists x_e . (Doctor(x_e) \wedge g_{\langle e, t \rangle}(x_e))$ [by FA]
- $[[\mathbf{POSS}]]_{\langle \langle e, \langle e, t \rangle \rangle, \langle e, e \rangle \rangle} * [[\mathbf{mother}]]_{\langle e, \langle e, t \rangle \rangle}$ leads to $[[[\mathbf{POSS} \mathbf{mother}]]]_{\langle e, e \rangle} = \lambda x_e . \iota y_e . Child(x_e, y_e)$ [by FA]
- $[[[\mathbf{POSS} \mathbf{mother}]]]_{\langle e, e \rangle} * [[\mathbf{Joanna}]]_e$ leads to $[[[[\mathbf{POSS} \mathbf{mother}] \mathbf{Joanna}]]]_e = \iota y_e . Child(j_e, y_e)$ [by FA]
- $[[[\mathbf{met}]]_{\langle e, \langle e, t \rangle \rangle} * [[[[\mathbf{POSS} \mathbf{mother}] \mathbf{Joanna}]]]_e$ leads to $[[[\mathbf{met} [[\mathbf{POSS} \mathbf{mother}] \mathbf{Joanna}]]]_{\langle e, t \rangle} = \lambda y_e . Met(y_e, \iota y_e . Child(j_e, y_e))$ [by FA]
- $[[[a \mathbf{doctor}]]]_{\langle \langle e, t \rangle, t \rangle} * [[[\mathbf{met} [[\mathbf{POSS} \mathbf{mother}] \mathbf{Joanna}]]]_{\langle e, t \rangle}$ leads to $[[[[[a \mathbf{doctor}] [\mathbf{met} [[\mathbf{POSS} \mathbf{mother}] \mathbf{Joanna}]]]]_t = \exists x_e . (Doctor(x_e) \wedge Met(x_e, \iota y_e . Child(j_e, y_e)))$ [by FA]

nice
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Part 3

Expressive adjectives (semantics/pragmatics) This problem asks you to explore the meanings of expressive adjectival epithets in natural language, such as English “damn”, “fucking”, “darn”, and so on, in examples like the following: Alfonso broke the {dark/damn/fucking} computer.

- a. What (informally) does an epithet contribute to the DP / sentence it appears in? What is the role of the context of utterance in determining the contribution of an epithet?
- Feel free to explore other examples besides the one I have given above, and especially other syntactic environments you might use such an epithet in, but do stick to these particular adjectives.
 - You may focus on any one of the three if you prefer.

Solution: Informally, the epithet adds emotion to the utterers sentence, adding a pragmatics to the DP / sentence it appears in. Specifically the adjectival epithet contributes a categorization to the subject it describes. That is, we get a sense of value of the DP, relative to the utterer. The context is very important for understanding the epithets mood. For example, “that fucking guy!” can have a happy context when remembering the antics of a beloved friend but it can also have a angry context when talking about a guy that one does not particularly like. In the question’s example, “Alfonso broke the fucking computer” we can have a frustrated mood, such that the utterer is mad that Alfonso broke the computer and adds frustration to the sentence. However, we can also see a neutral mood when blame is being cast on Alfonso (with emphasis on Alfonso and not the computer). Further, it is also important to know the intent of the utterer and the pre-existing knowledge of the situation to fully understand the meaning of the epithet. For example, if the intent Its meaning is not fully encoded in the wording. In this way, it is very much conversational.

- b. Is this contribution a conversational implicature, an at-issue entailment, a presupposition, or something else? (Give arguments and data that support your conclusion, and in particular, give data on the behavior of the contribution in embedded contexts.)

Solution: This contribution is something else. It is a pragmatic contribution. I have come to this conclusion because it is certainly not a presupposition (there is nothing we must presuppose with this adjective). It is not an at-issue entailment because we do not gain much objective information (or any truth statement entailed from using this epithet). It is not a conversational implicature because we do not imply any truth about the computer. Instead, we get the emotional responses.

- c. Propose an analysis of adjectival epithets, up to the limits of our formal tools: what is their type? Give at least one sample full denotation to illustrate your analysis. Prove a derivation (not just types) of $[[\text{the ADJ computer}]]^c$ for one of the adjectives.

- If you are unable to adequately formalize any parts of the meaning given the tools we have, note what those are. your answer doesn't address this

Solution: The type of adjectival epithets is $\langle\langle e, t \rangle, \langle e, t \rangle\rangle$. This is a handy type, as we can chain many adjectives as we parse a tree and end up with the same type after every adjective function. We give a sample denotation for $[[\text{fucking}]] = \lambda f_{\langle e, t \rangle}. \lambda x_e. f(x) \wedge \text{Fucking}'(x)$. Thus

what you've proposed here (essentially an intersective adjective) is on the right track, but you should note that it doesn't compositionally account for the way that whatever meaning ADJ contributes projects beyond the DP to colour the meaning of the whole utterance

our derivation for our sentence (the *(fucking * computer)) is the following:

$$\begin{aligned}
\llbracket \text{the} \rrbracket_{\langle \langle e, t \rangle, e \rangle} &= \lambda f_{\langle e, t \rangle} . \iota x_e . (f_{\langle e, t \rangle}(x_e) \wedge (x_e \in c_{\{e\}})) \\
\llbracket \text{fucking} \rrbracket_{\langle \langle e, t \rangle, \langle e, t \rangle \rangle} &= \lambda f_{\langle e, t \rangle} . \lambda x_e . (f_{\langle e, t \rangle}(x_e) \wedge \text{Fucking}(x_e)) \\
\llbracket \text{computer} \rrbracket_{\langle e, t \rangle} &= \lambda x_e . \text{Computer}(x_e) \\
\llbracket \text{fucking} \rrbracket_{\langle \langle e, t \rangle, \langle e, t \rangle \rangle} * \llbracket \text{computer} \rrbracket_{\langle e, t \rangle} &\text{ leads to } \llbracket [\text{fucking computer}] \rrbracket_{\langle e, t \rangle} = \lambda x_e . (\text{Computer}(x_e) \wedge \\
&\text{Fucking}(x_e)) \text{ [by FA]} \\
\llbracket \text{the} \rrbracket_{\langle \langle e, t \rangle, e \rangle} * \llbracket [\text{fucking computer}] \rrbracket_{\langle e, t \rangle} &\text{ leads to } \llbracket [\text{the } [\text{fucking computer}]] \rrbracket_e = \iota x_e . ((\text{Computer}(x_e) \wedge \\
&\text{Fucking}(x_e)) \wedge (x_e \in c_{\{e\}})) \text{ [by FA]}
\end{aligned}$$

d. (grads / extra credit undergrad)