

1. Gricean Reasoning
[a] B chose to respond this way because he wanted to make it clear that, though he does have a cat, it is not a siamese one. Simply answering "no" as in B' would not tell A if B has a cat, but it is not Siamese or if B simply does not have a cat. B uses an implicature to make this clear. 1915

B's utterance violates the maxim of quantity because it does specify whether or not the cat that B has is siamese or not, which was the question. Because the speaker could have said the stronger sentence "I have a siamese cat." but didn't, by gricean reasoning, this must be false. Therefore, the implicature is that though B has a cat, it is not a siamese cat.

2.
[a]
[[Alfonso]] = Alfonso_e
[[borrowed]] = lambda obj.e: lambda subj.e: borrowed_<(e,e),t>(obj,subj)
[[the]] = lambda f_<e,t>: Iota x: InC(x) & f(x)
[[book]] = lambda x.e: book_<e,t>(x)
so "Alfonso borrowed the book":
borrowed_<(e,e),t>(Iota x.e:(InC(x,e) and book_<e,t>(x,e)),Alfonso_e)

[b]
Mother is of type <e,<e,t>> and book is of type <e,t>. or rather there is a book, and there are two entities who stand in the mother-child relation to each other
Mother contributes the truth that the DP has a mother relationship with Joanna, and book contributes simply that the DP is a book. Their can either be an ownership of the possessor over the possessee, or some kind of relative relationship.

[c]
[[Joanna]] = Joanna_e
[[possessive]] = lambda possessee_<e,<e,t>>: lambda possessor_e: Iota x.e: possessee(x)(possessor)
[[possessive2]] = lambda possessee_<e,t>: lambda possessor_e: Iota x.e: owns_<(e,e),t>(x, possessor) & possessee(x) I see what you're going for here but first note that the ownership relation is not the only one that this should be able to express; what about if Joanna wrote the book?
[[mother]] = lambda x.e: lambda child.e: MotherOf_<(e,e),t>(x, child) returns true if x is mother of child
[[book]] = lambda x.e: book_<e,t>(x)
Possessive1 is used with mother and possessive2 with book.
Also, Possessive1 has the presupposition that Exists x.e: possessee(x)(possessor), and Possessive2 has the presupposition that Exists x.e: owns_<(e,e),t>(x, possessor) & possessee(x). so what type does the whole DP have?

[e]
Step 1: possessive1 mother = lambda possessor_e: Iota x.e: MotherOf(x)(possessor)
Step 2: Joanna possessive1 mother = Iota x.e: MotherOf(x)(Joanna)
Step 3: met Joanna possessive1 mother = lambda subj.e: met(Iota x.e: MotherOf(x)(Joanna), subj)
Step 4: a doctor = Iota x.e: doctor(x)
Step 5: a doctor met Joanna possessive1 mother = met(Iota x.e: MotherOf(x, Joanna), Iota x.e: doctor(x))

3.
[a] In modern times, the only interpretation of the contribution of the epithet to the sentence is that it means that the speaker is upset in some way, not necessarily negatively though. The speaker could be angry or sad or surprised or excitement. Which one of these he or she is depends on the context.

In the case of "fucking", one could rearrange the placement of this word, and it would still contribute the same thing. For instance, "Alfonso fucking broke the computer." Here, the word serves as an adverb, but it's contribution to the sentence, interestingly enough, is almost exactly the same. That means that it, at least in this case, has almost no specific semantic interaction with the word it is syntactically modifying, just the sentence as a whole. Although, certain syntactic structures do limit the semantic possibilities. For example, the sentence "fucking Alfonso broke the computer." makes it impossible for you to be intensifying the emotions around specifically the computer, whereas "Alfonso broke the fucking computer." allows you to have the possibility of specifically being mad at the computer. As a whole though, the syntax of "fucking" has very little effect on the semantics of it.

[b] The word "fucking" is interesting because, in modern context, it has two distinct meanings. One is having sex, and the other is an expression of anger or sadness or surprise or excitement. It is unclear whether it has always had this second meaning or if it came about later. If it came about later, it must have been that the first use, in certain contexts would imply but not entail or presuppose the second. However, in the modern context, I would argue that these are related, but distinctly separate meanings just like the different meanings of the word "bank", and it is not ambiguous in each context. Therefore, in this context, it is a presupposition because it is not the point of the sentence, but it does need to be true when uttering it. good, so we're not dealing with the literal meaning of "fuck" but rather something more abstract, or expressive

To test this, one could use the cancellation test. Interestingly enough, one could say "Alfonso broke the fucking computer, and I am not upset about it," but I wouldn't believe then that they weren't upset. Therefore there is a contradiction. but the point is there is no logical contradiction when those two sentences are uttered as a pair - so it's an implicature

This is interesting because it means not only that there is a contradiction, but also that the semantics of "fucking" overpower the semantics of the following sentence, which contradict it. This seems to be because saying "fucking" demonstrates less conscious control (in many contexts) than most sentences. In addition because the semantics is more about the emotion, less conscious control seems to mean more emotional control, meaning more accurate when talking about the speaker's emotions, which is what the word "fucking" is talking about.

This is an interesting presupposition, because it's semantics always comes through in any embedding:
"Alfonso didn't break the fucking computer."
"Alfonso didn't fucking break the computer." good, so it's a presupposition?
"If Alfonso breaks the fucking computer, it will be good/bad." what exactly is it?
"Alfonso didn't realize that he broke the fucking computer."
All of these still indicate an intensified emotion. It may change the type of emotion that is intensified, but that didn't have much to do with the semantics anyway, and more to do with the context.

[c]
There are two ways of doing this. One way is to simply ignore the word that the epithet was modifying and simply add something to the truth conditions:
[[Fucking]] = lambda f_<e,t>: lambda x.e: f(x) & Upset(speaker). good, but will this handle a more general case? E.g. 'amazing', 'awesome' can occur in the same way as 'fucking' by they shouldn't have that 'upset' attribute
The other way is to actually say that the epithet has a direct connection to the word which it is modifying:
[[Fucking]] = lambda f_<e,t>: lambda x.e: f(x) & UpsetBecauseOf(speaker, x).
Both of these are of type <e,t>,<e,t>>.
"The" and "book" are as follows:
[[the]] = lambda f_<e,t>: Iota x: f(x)
[[book]] = lambda x.e: book_<e,t>(x).
So "The fucking book" is:
Iota x.e: book_<e,t>(x) & Upset(speaker) so qualitatively, what is the difference? which do you think is better? is the valence of the emotion all that needs to be conveyed? is there something else that can't be captured in the lambda calculus, like the projection issue? this interactive account here doesn't quite get us what we want
or
Iota x.e: book_<e,t>(x) & UpsetBecauseOf(speaker, x).