

An analysis of existential anankastics: how to get there from here.

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In this talk I outline a solution to a problem raised by Nissenbaum (2005) in connection to the interpretation of existential anankastic conditionals such as (1), (2), or (3).

- (1) If you want to get to Harlem, you can take the A-train.
- (2) If you want to get to Harlem, you can take the C-train.
- (3) #If you want to get to Harlem, you can kiss Pedro Martinez.

That problem, as framed by Nissenbaum, is as follows. Let anankastic conditionals be interpreted by restricting the modal base to worlds in which the goal or telos mentioned in the complement of *if you want to...* is realized. You look at the bouletically best of these and from the quantificational force of the modal, you get the truth conditions. For universal anankastics, as in (4), this works.

- (4) If you want to get to Harlem, you have to take the A-train.

We restrict worlds in the modal base to those in which you get to Harlem. In the best of these – those conforming to your desires – you take the A-train and the sentence is correctly predicted to be true, if you are in Times Square and the C-train isn't running. The problem comes about when the quantification is existential. Although we get the right truth value for sentences that should be true in appropriate situations, like (1) or (2), we predict nonsensical or false sentences like (3) to be true as well. Suppose we are in Times Square, the A and the C are both running, Pedro Martinez is on the A-train to Harlem and, in addition to all that, you want to kiss Mr. Martinez. In some bouletically-best worlds, you do kiss him – this can't be ruled out – and (3) is predicted to be true. Intuitively, (3) is false because it does not specify a *means* for reaching the designated goal.

I begin by claiming that the role of the *if*-clause here is to set forth a goal or telos by which to restrict the modal base and that the ordering source is teleological. My truth-conditions for a sentence ϕ of the form *can P* under a teleological reading are given by (5), with an explanation to follow.

- (5) ϕ is true iff $\exists S$ such that (i) $S \supseteq_{SC} \{w \in W: w \text{ is a T-best world in MB}'\}$ and $\llbracket P \rrbracket \in S$; (ii) $S \not\supseteq_{SC} \{w \in W: w \text{ is a C-best world in MB}'\}$; and (iii) $S \setminus \llbracket P \rrbracket \not\supseteq_{SC} \{w \in W: w \text{ is a T-best world in MB}'\}$; and (iv) S is expressible.

Here I invoke the notion of supercover from Simons (2005). A supercover S of A ($S \supseteq_{SC} A$) is a set of sets whose union is a superset of A and each member of which has a non-empty intersection with A . MB is a contextually given set of worlds for the interpretation of a modal, using a Kratzerian modal semantics. MB' is the modal based restricted to those worlds in which the telos designated in the *if*-clause is realized.

The truth conditions incorporate the observation that, in interpreting anankastic sentences, two sorts of bestness are involved. First, we are interested only in worlds in which laws of physics, biology, and so on are obeyed. It won't do to tell you to get on a broomstick and fly to Harlem. But second, we are interested in your getting to Harlem in an efficient and convenient way. If I tell you to take a train in the opposite direction, even if you can still get there, I haven't been truthful. I therefore posit two ordering sources and a ranking between them, in the manner of Werner (2005). For the anankastics that we are considering, the orderings are circumstantial and teleological. Circumstantial is ranked above teleological, which means that the teleological ordering imposes further ordering only on worlds left as ties by the circumstantial ordering. The set of T-best worlds

in MB' consequently is a subset of the set of C-best worlds in MB', although the reverse is not typically true. A circumstantial ordering favors worlds in which natural laws are obeyed, so the set of C-best worlds in MB' is the set of physically possible ones where the goal is reached. A teleological ordering favors worlds in which the goal is reached with minimal difficulty, so the set of T-best worlds in MB' is the set of worlds in which the goal is reached with maximal ease and efficiency. By the ranking, the T-best worlds in MB' will also conform to natural laws.

The truth conditions say that the clause under *can* has to denote a member of a supercover over the T-best worlds in MB' – a supercover not extending over the set of C-best worlds in MB'. They also say that this member is essential to this supercover over the T-best worlds.

In support of (5), consider universal anankastics with embedded disjunction, as in (6).

- (6) If you want to get to Harlem, you either have to take the A-train or you have to take the C-train. (Narrow Scope reading for disjunction)

The word *either* helps insure an exhaustive reading of the disjunction. According to Simons (2005), (6) with an NS reading is interpreted as containing a single universal modal, and the material embedded in the disjuncts collectively denotes a supercover over the best worlds as given by the ordering source. (Compositionality is discussed in that paper.) By my theory, the best worlds in (6) are T-best worlds in MB'. Notice that just when (6) is true, (1) and (2) are both true and no other relevant existential anankastic is. This reinforces the notion that the interpretation of existential anankastics involves a supercover over T-best worlds in MB'.

There is also evidence that the supercover formed from the disjuncts in these universals cannot extend over the C-best worlds in MB'. Consider (7).

- (7) #If you want to get to Harlem, you have to either kiss Pedro Martinez or you have to not kiss him. (NS reading for disjunction)

The set containing the set of worlds in which you kiss Pedro Martinez and the set of worlds in which you don't certainly is a supercover over the set of C-best worlds in MB'. Because of this, I argue, it covers too much and (7) is ruled out. Extending the analysis to (3), a suitable supercover cannot be formed from the set [you kiss P.M.] and its complement.

Finally, universal anankastics with disjunction show an essentiality requirement. Consider (8).

- (8) #If you want to get to Harlem, you either have to take the A-train or you have to take the C-train or you have to kiss Pedro Martinez. (NS reading for disjunction)

The addition of the extra disjunct to (6) is presumably redundant, and the sentence is ruled out. Pursuing our parallel, (3) will be bad even though there is a supercover of the right sort containing [you take the A-train] and [you take the C-train].

All kinds of ad-hoc supercovers over T-best worlds in MB' won't extend over C-best worlds in MB' – just take the set of T-best worlds and make a supercover out of it. The issue, I argue, is whether there is a natural language expression having such a denotation. One such expression is the universal disjunction in (6). Another is the question *How do you get to Harlem from here?* – if the denotation of a question is its set of true answers. But the only expressible supercovers over T-best but not C-best worlds, it appears, are based on suitable means for realizing the telos. In the present case, that amounts to saying that the only linguistically available way to circumscribe just the worlds in which you get to Harlem and get there in a reasonable manner is with an utterance that picks out the set of worlds in which you take the A-train or the C-train.

References

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