

# What to Do If You Want to Go to Harlem Anankastic Conditionals and Related Matters

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# Anankastic Conditionals



- Georg Henrik von Wright's example: *If the house is to be made habitable, it ought to be heated.*
- The house being heated is a necessary condition for it being habitable.

# The Harlem Sentence



- Kjell Johan Sæbø's example:
- *If you want to go to Harlem, you have to take the A train.*

# A Minimal Pair (from Hare)



- *If you want sugar in your soup, you should ask the waiter.*
- *If you want sugar in your soup, you should see a doctor.*

# The Compositional Semantics of Kant



Immanuel Kant  
(Gemälde von I. B. Becker, 1768)

- Hypothetical Imperatives:
- If you have THE END, you ought to take THE NECESSARY MEANS

# The Plan

- Why is the Harlem sentence puzzling?
  - Background on Modals and Conditionals
  - The Harlem Puzzle
- Attempts and Obstacles
  - The Mayor
  - Ruud van Nistelrooy
  - Appendix A: Pedro Martinez
  - Appendix B: Response to Brian's Comments

## Modals – First Approximation

- The situation: John has obstructed his neighbor's driveway. Cambridge has a law against that. There is a \$25 penalty for first offenders.
- *John has to pay a \$25 fine.*
- LF: have to (John pay a \$25 fine)
- *have to*  $\phi$  is true in  $w$  iff  $\phi$  is true in all  $w'$  accessible from  $w$ .
- What accessibility relation?
  - deontic: what the law requires
  - but the law requires that you not obstruct your neighbor's driveway and if you don't, you don't have to pay a fine
  - so we wrongly predict our sentence to be false

# Modals – Kratzer



- modal statements are doubly relative
  - modal base: the set of accessible worlds
  - ordering: a ranking of the worlds in the modal base
- both factors can be modelled by **conversational backgrounds**
  - functions from worlds to sets of propositions
  - modal base: the set of worlds where the relevant propositions are all true
  - ordering: rank higher worlds where more of the relevant propositions are true

# A Technical Frame

- For any world  $w$ , conversational backgrounds  $f$ ,  $g$ , and proposition  $q$ :

$\llbracket \text{have to} \rrbracket(w)(f)(g)(q) = 1$  iff

$$\forall w' \in \max_{g(w)}(\cap f(w)) : q(w') = 1.$$

## *John has to pay a \$25 fine*

- modal base: a set of relevant circumstances
  - the fact that John obstructed his neighbor's driveway
- ordering: a set of propositions that the law would like to be true
  - nobody obstructs their neighbor's driveways
  - if anyone obstructs his neighbor's driveway, they pay a \$25 fine.

# Advice

- A: *I'm going to be in Harvard Square.*
- B: *You'll have to try Burdick's hot chocolate!*
- modal base
  - a set of relevant circumstances, including the presence of Burdick's cafe in Harvard Square
- ordering source
  - a set of desires, preferences

## Conditionals – Kratzer

- *if*-clauses restrict the modal base (via intersection)
- *If John obstructed his neighbor's driveway, he has to pay a \$25 fine*
- modal base: a set of relevant circumstances
  - plus the “hypothetical” fact that John obstructed his neighbor's driveway
- ordering: a set of propositions that the law would like to be true
  - nobody obstructs their neighbor's driveways
  - if anyone obstructs his neighbor's driveway, they pay a \$25 fine.

# Another Technical Frame

- *if  $p$ , have to  $q$*
- $\forall w' \in \max_{g(w)}(\cap(f(w) \cup p)) : q(w') = 1.$

# What the Harlem Sentence Should Mean

- *If you want to go to Harlem, you have to take the A train.*
- modal base: a set of relevant circumstances
  - plus the “hypothetical” fact that you want to go to Harlem
- ordering source
  - the set of your actual desires, preferences
- Crucially, the “hypothetical” desire to go to Harlem is not necessarily part of your desires in the evaluation world

# The Hoboken Problem

- You actually want to go to Hoboken, but I don't know that.
- I say the Sentence and (making certain assumptions about the geography of Metro New York) say the truth.
- But the Sentence is predicted to be false.
  - The best worlds where your desires (including your desire to go to Hoboken) are satisfied are not worlds where you take the A train (rather you take the PATH train).

- *if*-clauses can also restrict ordering sources
- in the Sentence, the *if*-clause adds a “hypothetical” desire to the ordering source
- BUT: it can’t be the desire to **want to** go to Harlem, but must be the desire to go to Harlem
  - so, we must ignore the *want* in the *if*-clause (or treat it as a non-compositional signal that we are dealing with an ordering source conditional)

## The Hoboken Problem again

- the Hoboken Problem persists!
- the ordering source now includes both your actual desire to go to Hoboken and your hypothetical desire to go to Harlem
- assuming that the two desires are factually incompatible
  - it would neither be true that you have to take the A train nor that you have to take the PATH train
- so, Sæbø incorrectly predicts the Harlem Sentence to be false
- *If you want to go to Harlem, you have to take the A train.*

# Diagnosis

- Instead of just adding the Harlem goal to the Hoboken goal,
- we need to knock out the Hoboken goal and **replace** it with the Harlem goal

# Two Layers of Modality?

- the *if*-clause restricts a higher (implicit) non-advice modal (more or less epistemic?)
- $\text{modal}_1$  (if you want to go to Harlem)  
[  $\text{modal}_2$  (you take the A train) ]

## Examples of Two Layers of Modality

- (1) If Caspar vacuums on Saturday, then Chris has to cook dinner on Sunday. [Sarah Moss]
  - Reading A: direct statement of the apartment rules (one layer of modality)
  - Reading B: containing a covert epistemic modal, i.e. as saying that if it is given that Caspar vacuums on Saturday, then it follows from the evidence available to the women that Chris is the one who must cook dinner on Sunday according to the apartment rules.
- (2) If Britanny spear drinks Coke in public, (it must be that) she has to drink Coke in public. [Zsófia Zvolenszky]

# The Two Modals in the Harlem Sentence

- higher implicit modal:
  - modal base: set of (epistemically?) accessible worlds
    - in each of which you either want to go to Hoboken or want to go to Harlem
    - plus the hypothetical fact that you want to go to Harlem
    - resulting in a set of worlds in each of which you want to go to Harlem and not to Hoboken
- lower advice modal:
  - evaluated not in the actual world but in the worlds the higher modal takes us to
  - modal base: set of relevant circumstances
    - can be assumed to be the same from any of the worlds of the higher modal
  - ordering source: your desires, preferences
    - now includes only the Harlem goal and not the Hoboken goal
- The Sentence is correctly predicted to be true

# Hare's Pair Again

- *If you want sugar in your soup, you should ask the waiter.*
- *If you want sugar in your soup, you should see a doctor.*
- What's the difference?
  - in the waiter case
    - your desires and preferences are the source for the advice
  - in the doctor case
    - my desire to keep you healthy is the source for the advice

## Two Problems:

- Kratzer's Mayoral Candidate
- Huitink on Ruud van Nistelrooy

# The Mayoral Candidate

- Kratzer's example of an unhappy person
  - You want to become mayor.
  - You want to not go to the pub regularly.
  - You will become mayor only if you go to the pub regularly.
- Advice: *You could go to the pub regularly.*
- Another piece of advice:
  - *If you want to become mayor, you have to go to the pub regularly.*
- Diagnosis: We need the *if*-clause to **override** any other goals.

# Ruud van Nistelrooy

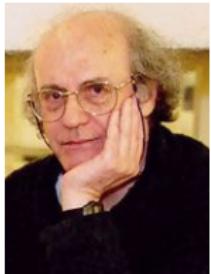


- Janneke Huitink's scenario
  - both the A train and the C train go to Harlem, the C train will have Ruud van Nistelrooy on it, you want to meet Ruud van Nistelrooy.
- *To go to Harlem, you have to take the C train (because Ruud van Nistelrooy is going to be on that train).*
- predicted to be true, but it doesn't seem to be true

# A Detour

- Think about advice modals with purpose infinitives:
  - *To go to Harlem, you must/have to take the A train.*
  - *To go to Harlem, you should/ought to take the A train.*
- Two strengths of strong advice modals

# Sloman



- “For instance *If you want to get to London by noon, then you ought to go by train* picks out the best means without excluding the possibility of others, whereas *If you want to get to London by noon then you have to (must, will be obliged to etc.) go by train* implies that no other means exists.”
- Aaron Sloman: 1970, “*Ought and Better*”, *Mind*, 79(315): 385–394.

# Evidence for Two Strengths

- *You ought to take the train, but you don't have to.*

# Triple Relativity

- Advice Modals take three arguments:
  - modal base
  - ordering source – Level 1: designated goal(s)
  - ordering source – Level 2: subsidiary goals/desires
- the advice modals differ as to whether they care about subsidiary goals

# Designated Goals

- the *to*-infinitive serves as the “designated goal” argument of the advice modal
- semantics for the modals:
  - *to p, ought to/should q* is true relative to a modal base and an ordering source iff all the best (according to the ordering source) worlds in the modal base where p is achieved are q-worlds
  - *to p, must/have to q* is true relative to a modal base and an ordering source iff all the worlds in the modal base where p is achieved are q-worlds

## The Sentence Again

- *If you want to go to Harlem, you have to take the A train.*
- *If you want to go to Harlem, you have to take the A train (to go to Harlem).*
- The *if*-clause makes salient the goal of going to Harlem.
- That goal then fills the goal argument of the advice modal.

# The Hare Pair Again

- *If you want sugar in your soup, you should ask the waiter.*
- *If you want sugar in your soup, you should see a doctor.*
- In the waiter case
  - the conditional helps fill the goal argument of the modal
  - $\approx$  *To get sugar in your soup, you should ask the waiter.*
- In the doctor case
  - the goal argument is independently identified
  - $\not\approx$  *To get sugar in your soup, you should see a doctor.*

## The Mayor case

- *If you want to become mayor, you have to go to the pub regularly.*
  - the conditional helps fill the designated goal argument of the modal
  - to achieve the designated goal it is necessary to go to the pub regularly, even if you have other goals that conflict with that

# Ruud van Nistelrooy

- Janneke Huitink's scenario
  - both the A train and the C train go to Harlem, the C train will have Ruud van Nistelrooy on it, you want to meet Ruud van Nistelrooy.
- *To go to Harlem, you have to take the C train (because Ruud van Nistelrooy is going to be on that train).*
- We now predict this to be false, and we predict the ought-version to be true:
  - *To go to Harlem, you ought to take the C train (because Ruud van Nistelrooy is going to be on that train).*

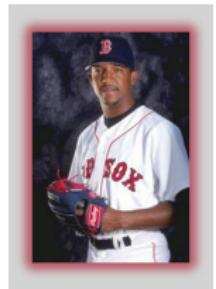
# Success!

- Our analysis
  - is compositional
  - solves all the puzzle cases
    - the Hoboken problem
    - Hare's pair
    - Kratzer's mayor case
    - Ruud van Nistelrooy
- Ingredients
  - two layers of modality
  - designated goal argument of advice modals

# Appendix A

- A Problem noted by Jon Nissenbaum
- Speculations

# Pedro Martinez



- Jon Nissenbaum's scenario
  - both the A train and the C train go to Harlem, the C train will have Pedro Martinez on it, you want to kiss Pedro Martinez.
- *#To go to Harlem, you ought to kiss Pedro Martinez.*
- *#To go to Harlem, you can kiss Pedro Martinez.*

## Nissenbaum's proposal

- The *to*-clause does not serve as an argument to the modal
- Instead, it is a VP-modifier
- *He took the A train to go to Harlem.* (= with the goal of going to Harlem)
- *#He kissed Pedro Martinez to go to Harlem.*
- Problem:
  - *To get this job, you have to be fluent in Spanish.*
  - *#I am fluent in Spanish to get this job.*

# Means to an End

- complicate the semantics of advice modals one more time
- advice modals present the VP action as a means to an end
- formally: an INUS condition à la Mackie
- entailment or presupposition?
  - *To go to Harlem, you don't have to kiss Pedro Martinez.*
  - *To go to Harlem, you can't kiss Pedro Martinez.*

## Appendix B

Response to Brian's Comments:

- only to Pimlico
- whether or not
- inclinations
- two minds
- material implication

# Only to Pimlico

- You only have to catch the 24 if you want to go to Pimlico.
- only Pimlico is an  $x$  such that [you have to catch the 24 if you want to go to  $x$ ]
- only Pimlico is an  $x$  such that [you have to catch the 24 (to go to  $x$ ) if you want to go to  $x$ ]

## Whether or not

- You have to catch the A train if you want to go to Harlem. Or, for that matter, if you don't.
- You have to catch the A train, whether or not you want to go to Harlem.
- *cf.* You have to catch the A train to go to Harlem if you want to go to Harlem. And, if you don't want to go to Harlem, you also have to catch the A train to go to Harlem.

# von Stechow's Presupposition



- von Stechow et.al. adopt our elliptical account (and disagree with us on other points)
- One wrinkle they have is that *have to* presupposes that the designated goal is in fact a goal
- *to p, x has to q* presupposes that x has the goal *p*

## Whether or not again

- *If you don't want to go to Harlem, you have to take the A train.*
- can't mean
- *If you don't want to go to Harlem, you have to take the A train to go to Harlem.*
- because there would be a presupposition failure

## Other Uses for the Presupposition

- Explain the preference for subjunctive marking in *I don't want to go to Harlem because to go to Harlem I would have to take the A train, and I don't like train*
- Explain the oddness of *If you're inclined to go to Harlem, you have to catch the A train*

## Two Minds

- Perhaps, people with conflicting desires have “fragmented minds”.
- I am in two minds about this.
- Most plausible for cases where the subject knows that the two desires are incompatible with each other (possibly against the background of relevant facts)
- Not quite as plausible for cases like the person who wants to go to London and wants to visit the Louvre, but has no idea that the Louvre is not in London.
- But actually: if we want a possible worlds analysis of *want*-attributions, we need to make the move to fragmented minds. Or, we have to become very hard-nosed.

# Brian's Theory of Conflicting Desires

- $M$  wants  $P$  iff one of the minds of  $M$  desires  $P$
- $M$  has to  $x$  iff the desires of one of the minds are only satisfied if  $M$  does  $x$

## Two Minds Are Not Enough

- Take Kratzer's mayoral candidate. She wants to become mayor. She wants to stay away from the village pub. She can only become mayor if she goes to the pub. So, we want as true: *If she wants to become mayor, she has to go to the pub* and we want as false: *If she wants to lead a quiet life, she has to go to the pub*.
- But both come out as true for Brian!
- The antecedent is true in both cases (she wants to become mayor **and** she wants to lead a quiet life). The consequent is true in both cases as well (one of her minds will only be satisfied if she goes to the pub).

# Diagnosis

- We need to connect the “sub-mind” that the antecedent is “about” to the “sub-mind” that the *have to* is advice for.
- A simple nested modality account (and certainly the radically simple nested account of Brian’s where the higher conditional is a material implication) does not do this.
- Brian could say that the antecedent makes one of the sub-minds salient, and the consequent then talks about what the desires of that salient sub-mind necessitate.
- But surely that is pretty much what we’re saying as well. It is not enough to let the antecedent do its usual conditional job. It also needs to influence (via salience, or some other mechanism) what the *have to* claim is about.