

X-marking, Day 2

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<https://kvf.me/x>

Modality recap

- (1) Harry might fall.
- (2) You have to take the A train.

- modals are quantifiers over possible worlds
- $\lambda w, t. \mathcal{M} (f(w, t)) (p)$
- their restriction is supplied by a contextually supplied “flavor” function that projects a set of worlds from the evaluation index
- what the function is depends on what feature(s) of the evaluation index the modal claim is about (what the “anchor” of the claim is)
- the lexical meaning of modals can include some constraints on what flavors they expect

- flavors could be simple: $f(w, t) =$ worlds compatible with all the available evidence at w, t
- flavors can be complex: $f(w, t) =$ worlds that match w in all relevant facts at t and that afterwards comply as much as possible with the regulations of the Town Library

Even more complex flavors

(1) Harry might fall.

Dorr & Hawthorne 2013: the available evidence plus whatever the fact is about Harry's position vis-a-vis the cliff

(2) You have to take the A train.

Knobe & Szabó 2013: worlds that match the evaluation world in regards to the circumstances of the New York subway system etc. plus that satisfy the goal of getting to Harlem plus that don't violate basic moral principles

Three ways to implement mixed modal flavors

1. accessibility relation + (multiple) orderings
2. (multiple) premise sets
3. (multiple) subset selection functions

Attitudes

Hintikka's idea

Attitude predicates have the same basic semantics as modals.

(3) Naby believes that Brianna is in Rethymno.

- Naby's belief state in the evaluation world (whatever it is) determines a set of worlds
- these are the worlds that are “compatible with” the belief state
- nothing is going on in these worlds that contradicts what the belief state thinks the world is like

x believes that $p = \forall w' \in \text{DOX}(x, w) : w' \in p$

where $\text{DOX}(x, w)$ is the set of worlds compatible with x 's belief state in w

- Like modals, attitudes are anchored to the evaluation index
- Unlike modals, the set of worlds they take us to is (i) more fully lexically constrained and (ii) depends on the subject of the attitude

want

(4) Julie wants it to rain.

Heim 1992, von Fintel 1999 give *want* a complex flavor: a mixture of doxastic and bouletic. von Fintel & Pasternak 2022 add further circumstantial sprinkles.

We'll look more closely at *want* later on.

The quantificational force of attitudes

- almost universally universal
- but see Slovenian *dopuščati*, Russian *dopuskat'* (Močnik 2019)

Conditionals

(5) If Rosa left before 6am, she got there in time.

- epistemic flavor
- worlds compatible with the evidence + where Rosa left before 6am
- all of those worlds are worlds where she got there in time

Just like modals:

- quantificational force (universal)
- modal flavor (epistemic)
- anchoring to evaluation world

plus: restriction to worlds where the antecedent is true

Obvious idea: *if* is a modal operator

if $[f(w)]$ (p) (q)

- the antecedent p
- the modal flavor function $f(w)$
- the consequent q

true iff $\forall w' \in p \cap f(w) : q(w') = 1$.

The interaction of modals and conditionals

- (6) If she's in front of a big fortress, Brianna might be in Rethymno.
- (7) If he returned the book late, Howard has to pay a fine.

The Restrictor Theory

Kratzer 1986:

the history of the conditional is the story of a syntactic mistake. There is no two-place if ...then connective in the logical forms of natural languages. If-clauses are devices for restricting the domains of various operators.

Kratzer's Thesis

If-clauses are devices for restricting the domains of various operators.

(8) If we're on Route 62, we must be in Clinton.

must [$f(w) \cap p$] (*we be in Clinton*)

The only thing the *if*-clause is doing is restricting the flavor argument of *must*. There's no additional modal operator contributed by *if*.

(9) If we're on Route 62, we are in Clinton.

If *if* is a device for restricting the domains of operators, where is the operator being restricted here?

Kratzer: covert modals

Alternatives to the restrictor theory

- Anthony S. Gillies. 2010. Iffiness. *Semantics and Pragmatics* 3(4). 1–42. <https://doi.org/10.3765/sp.3.4>
- Ivano Ciardelli. 2022. The restrictor view, without covert modals. *Linguistics and Philosophy* 45(2). 293–320. <https://doi.org/10.1007/s10988-021-09332-z>
- Kai von Fintel & Robert Pasternak. 2022. Attitudes, aboutness, and indirect restriction. <http://mit.edu/fintel/fintel-pasternak-2022-AttitudesAboutness.pdf>

Question other aspects of orthodoxy

- anchoring to events?
- situation or truth-maker semantics?
- rethink attitude verbs and complementation?
- get rid of possible worlds?

X-marking

Some of the family history

- Kai von Fintel. 1998. The presupposition of subjunctive conditionals. In Uli Sauerland & Orin Percus (eds.), *The interpretive tract* (MIT Working Papers in Linguistics 25), 29–44. Cambridge, MA: MITWPL.
<http://mit.edu/fintel/fintel-1998-subjunctive.pdf>
- Sabine Iatridou. 2000. The grammatical ingredients of counterfactuality. *Linguistic Inquiry* 31(2). 231–270. <https://doi.org/10.1162/002438900554352>
- Kai von Fintel & Sabine Iatridou. 2008. How to say *ought* in Foreign: The composition of weak necessity modals. In Jacqueline Guéron & Jacqueline Lecarme (eds.), *Time and Modality* (Studies in Natural Language and Linguistic Theory 75), 115–141. Dordrecht: Springer Netherlands.
https://doi.org/10.1007/978-1-4020-8354-9_6

Recent work

- Kai von Fintel & Sabine Iatridou. 2022. Prolegomena to a theory of X-marking.
- Kjell Johan Sæboe. 2021. Non-actualistic mood in Czech, Russian, German, and Norwegian.
- Marcelo Ferreira. 2022. A square of necessities: X-marking weak and strong necessity modals.

All available on the website: <https://kvf.me/x>

You go to the reception with a friend. There are many people.
You are approaching the buffet. You could use some gazpacho.

Friend: If Leila is here, there is gazpacho.

or: there must be gazpacho, there will be gazpacho

You get to the buffet. No gazpacho.

Friend: If Leila was here, there would be gazpacho.

You get to the buffet. No gazpacho.

Friend: If Leila was here, there would be gazpacho.

*also: If Leila had been here, there would have been gazpacho
or even: If Leila had've been here, there would have been gazpacho*

on the latter, see Stowell 2008

X-marking

- (O) If Leila is here, there is gazpacho.
- (X) If Leila was here, there would be gazpacho.

Why “X”?

- O for ordinary, open
- X for extra

But also: X for “to be named later”

Temporal variations

We can distinguish different types of X-marked conditionals varying in the temporal reference of the component clauses.

PastX — PresX — FLV

PastX

- (10) If Leila had arrived on Friday, she would have been at the reception.

PresX

(11) If Leila was here, there would be gazpacho.

FLV

- (12) If Leila came to the reception tomorrow, there would be gazpacho.

NB: ignoring multi-case conditionals

(13) If Amanda walks to work, she stops for coffee on the way.

I'm not saying this couldn't be a cool topic to explore.

What might X be?

- counterfactual
- subjunctive
- irrealis
- ontic/metaphysical
- none of the above

X = counterfactual?

In Iatridou 2000, following many others, X-marking was called “counterfactual” or “CF”-marking.

What it would mean for a conditional to be “counterfactual”?

1. Its truth requires the falsity of the antecedent (and consequent?).
2. Its felicitous use requires the falsity of the antecedent (and consequent?).
3. By using it the speaker is implicating the falsity of the antecedent (and consequent?).

X-marked conditionals do often seem to be counterfactual in some sense:

- (14) If Julie had passed the ball earlier, Charlotte would have scored.

Not counterfactual: semi-factuals

- (15) Even if Julie had passed the ball earlier, Charlotte wouldn't have scored.

This shows that the consequent is not necessarily counterfactual

Not counterfactual: FLVs

- (16) If Leila came to the party tomorrow, there would be gazpacho.

Not counterfactual: Anderson 1951

- (17) If Jones had taken arsenic, he would have shown just exactly those symptoms which he does in fact show.

Not counterfactual: X-marking passages

- (18) a. If Polly had come to dinner tonight, we would have had a good time.
- b. If Uli had made the same amount of food that he in fact made, she would have eaten most of it.

von Fintel 1998

X \neq counterfactual

So, X doesn't encode counterfactuality in its meaning.

Counterfactuality may arise as an implicature in most contexts.

X = subjunctive?

- not all languages even have a subjunctive
- some can't use their subjunctive because of an incompatibility with another component of their X-marking (such as past tense, if there's no past subjunctive)
- and Icelandic: subjunctive V1 conditionals without a trace of X-meaning

Dutch

- (O) Als Leila hier is, is er gazpacho.
if Leila here is, is there gazpacho
'If Leila is here, there is gazpacho.'
- (X) Als Leila hier was, zou er gazpacho zijn.
If Leila here was, shall.PST there gazpacho be
'If Leila was here, there would be gazpacho.'

English

Just like Dutch, English X-marking consists of

- a layer of past in both antecedent and consequent
- an obligatory modal

But what about “if I were ...”?

(19) I was very busy.

(20) If I were less busy, I would go with you.

Huddleston & Pullum 2002

The distinction between was and were in (19)/(20) is not sufficient to justify generalising a mood system to all verbs. If we were to say that all verbs had a preterite–irrealis distinction we would be claiming that the massive coalescence of realisational forms that has taken place in the development of English has not produced a change in the system of verb inflection itself, but merely large-scale syncretism. It is much more plausible to say that irrealis were is an unstable remnant of an earlier system – a system which has otherwise been replaced by one in which the preterite has expanded its use in such a way that it now serves to express modal remoteness as well as past time.

Icelandic

- (21) a. Ef hann hefur farið, kem ég.
if he has.PRES.IND gone, come I
'If he has left, I will come.'
- b. Hafi hann farið, kem ég.
has.PRES.SUBJ he gone come I
'If he has left, I will come.'
- c. *Ef hann hafi farið ...
if he has.PRES.SUBJ gone
- d. *Hefur hann farið ...
has.PRES.IND he gone

X \neq subjunctive

X-marking shouldn't be equated with the subjunctive, although it often (but not always) incorporates subjunctive marking.

X = irrealis?

“irrealis” is a disputed term, but very recently von Prince, Krajinović & Krifka 2022 put some order into the area:

- realis refers to the present and/or past of the actual world
- irrealis refers to any non-actual world or the future of the actual world

X \neq irrealis

So, X-marking is not irrealis.

X = ontic (vs. O = epistemic)?

Especially in some philosophical work, there's a tendency to equate the O/X-distinction with a distinction between two kinds of modal flavors conveyable by conditionals.

Some famous pairs

- (22) If Oswald didn't kill JFK, someone else did.
- (23) If Oswald hadn't killed JFK, someone else would have.
- (24) If Shakespeare didn't write *Hamlet*, someone else did.
- (25) If Shakespeare hadn't written *Hamlet*, someone else would have.

Observation: not just a difference in the epistemic status of the antecedent, but in the modal flavor of the conditional claim.

O epistemic

X ontic/metaphysical/causal

The correlation isn't one-to-one:

- O-marked conditionals about the future can be ontic.
- X-marked conditionals can be epistemic.

A scenario

There is a treasure hunt. The organizers decide between putting the treasure in the attic, the study, and the garden. They quickly eliminate the garden as inappropriate. Then, they decide that the attic is a slightly better location. Reporting this, we could say:

- (26) If it hadn't been in the attic, it would have been in the study.

Sources: Grice 1989, Edgington 2007, Khoo 2015, class discussions

Now, before the hunt, one of the organizers tells me:

(27) I'll give you a hint: it's either in the attic or the garden.

Trusting the speaker, I think

(28) If it's not in the attic, it's in the garden.

We are competing in pairs: I go to the attic and tip off my partner to search the garden. I discover the treasure. ‘Why did you tell me to go to the garden?’ she asks.

(29) Because if it hadn’t been in the attic it would have been in the garden: that’s what I was told.

(Or more pedantically: ‘that’s what I inferred from what I was told’) That doesn’t sound wrong in the context.

X-marking \neq ontic flavor

There's no automatic correlation between X-marking and ontic flavor.

Interim conclusion

- X-marking has no obvious better name
- unless and until we understand how X-marking works, let's just keep calling it X

X-marking across languages

Ingredients

X-marking often but not always involves (fake) past tense, often but not always involves subjunctive mood, often but not always involves (fake) imperfective aspect, often but not always involves a future operator. Some languages have a simple particle without changes to verbal morphology.

Hungarian

- (30) Ha János tudja a választ, Mari is tudja a választ.
if János knows the answer-ACC Mari too knows the answer-ACC
'If János knows the answer, Mari knows the answer (too).'
- (31) Ha János tudná a választ, Mari is tudná a választ.
if János know-*nA* the answer-ACC Mari too know-*nA* the answer-ACC
If János knew the answer, Mari would know the answer.

Hungarian PastX

- (32) Ha János tudta volna a választ, Mari is tudta
if János know.PAST.3sg be-*nA* the answer-ACC Mari too know.PAST.3g
volna a választ.
be-*nA* the answer-ACC

‘If János had known the answer, Mari would have known the answer too.’

Hungarian FLV

- (33) a. ha holnap el-indul, a jövő hétre oda-ér.
if tomorrow away-leave the following week.onto there-reach
'If he leaves tomorrow, he will get there next week.'
- b. ha holnap el-indulna, a jövő hétre oda-érne.
if tomorrow away-leave-*nA* the following week.onto there-reach-*nA*
'If he left tomorrow, he would get there next week.'

Greek

- (34) An o archigos pethene avrio, tha ton thavame eki.
If the chief died.PST.IMP tomorrow, FUT him bury.PST.IMP there
'If the chief died tomorrow, we would bury him there.'

German

- (35) Wenn ich das Spiel gesehen hätte, hätte ich keine
if I the game seen.PCPL have.PAST.SUBJ, have.PAST.SUBJ I no
ruhige Minute gehabt.
calm minute have.PCPL

'If I had seen the game, I would have had no respite.'

One thing that doesn't happen

We know of no language where X-marking consists of only past tense.

See also Dahl 1997, Van linden & Verstraete 2008.

What's next

Big questions

1. What does X-marking contribute semantically?
2. How is the semantic contribution composed from whatever the ingredients of X-marking are in a particular language?

You know, the usual questions