

The epistemic future in reflective questions

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REFLECTIVE QUESTIONS provide new insight into the epistemic future:

- its modal nature and force
- its relationship to evidentiality

Epistemic modals in questions

Striking properties of epistemic modals in questions:

- a ban on the strong modal in questions (on an *epistemic* reading) [1, 2]:
(1) **Might**/***Must** it have been the butler?
- a weak modal is possible but gives the question a special meaning REFLECTIVE QUESTION (RQ):

Properties of reflective questions

- no addressee is needed
- if there is an addressee, no answer is needed/expected ≠ rhetorical questions: ADRS doesn't know the answer
- the modal does not shift to the addressee
- the modal loses its epistemic interpretation

- (2) **Might** it have been the butler?
 ≠ Is there at least one *p* world in your doxastic alternatives?
 ≈ 'I wonder whether *p*'

Cross-linguistic picture: also in Greek, Italian [1]; Korean, Japanese [3, 4]

- Here also confirmed for Bulgarian:

- (3) **Može**/***Tryabva** li da e bil
 may/must Q SUBJ be.3SG been
 ikonomūt?
 butler.def
 =(2): 'I wonder if it was the butler.'

The epistemic future

EF=future marker expressing epistemic modality (present temporal anchoring):

- (4) That **will** be the pizza delivery. (upon hearing the doorbell)

EF also in Greek, Italian, Spanish, French, Romanian, Bulgarian, Czech, Slovenian, Polish...

One of the big questions about EF is its **force**:

- **strong** [5, 6, 7, 8]
- **variable** [9, 10, 11, 12]
- **weak must** [13]

Of particular importance are environments where one of the standard modals is unavailable.

RQ as a new test for force:

Predictions:

- 1 if the epistemic future is strong in a language, it will be banned from forming RQ, cf. (1)
- 2 if EF can form reflective questions,
 - the strong force hypothesis is rejected, and
 - evidence for a shared property

- (5) Ikonomat li **shte**/**može**/***tryabva** da
 butler.DEF Q will/might/must SUBJ
 e bil? (Koy znae)
 aus.3SG been.PP who knows
 RQ: 'Might it have been the butler? (Who knows)'

Bulgarian EF

- ⇒ is not strong (*pace* [5, 6, 7, 8] on Romance/Greek)
- ⇒ it's not weak *must/ought* either (*pace* [13])
- ⇒ common epistemic core between EF and modals giving rise to RQ: weak force

Account

Previous accounts of EF as a variable modal formalize it as strong and attribute the variability to context [9, 10, 11, 12] → cannot predict RQ, (5)

- EF is like Old English **motan*: **weak** starting force with a modal base restriction [14]:

- (6) assertion: $\Diamond p$
 presupposition: $\Diamond p \rightarrow \text{fut}(p)$
 'if *p* has the chance to actualize, it will'

- Explaining the interaction between weak modals and questions: epistemically equivalent [1]:

- (7) a. Did John arrive? $p?: \{p, \neg p\}$
 b. John might have arrived. $\Diamond p: \{p, \neg p\}$

- (8) non-veridical equilibrium: equal amount of *p* and $\neg p$ worlds [1]

- High syntactic location of the modal/EF in RQ: ResponseP: how ADRS is expected to respond to an utterance [15]

- (9) PRAGMATIC ALTERNATIVES: {ADRS has an answer, ADRS doesn't have an answer}

- (10)a. Standard Q: bias towards an answer
 b. Reflective Q: no bias



The proposal captures:

- why RQs anticipate ADRS ignorance: (8), (9b)
- why *must* is unavailable in RQ: regular Q (9a), no (8)
- high syntax explains lack of epistemic interpretation (2)
- explicit connection between future and epistemic modality

Epistemic future and evidentiality

State of the art:

- Relationship between EF and evidentiality: EF as an indirect evidential [9, 16, 17, 18, 19, 10, 11, 20, 12, 21, 22, 23]
- Relationship between RQ and evidentiality: conjectural evidentials give rise to RQ [24] Some particles giving rise to RQ analyzed as evidential based on this [25]

However:

- The hallmark of RQ is full ignorance (cf. (5))
- Evidentials in questions shift to the addressee, while modals in RQ don't, cf. (2)
- EF is available in ignorance + direct evidence:

- (11) I can't remember the name of that person I met at the party...

Alex shte da beshe
 Alex FUT SUBJ be.DIR
 ≈ 'Maybe it was Alex'

Predicted impossible if EF is an indirect evidential.

Generalization

Particles giving rise to RQ are not evidential

- supports findings on conjecturals [26, 27, 28]
- against evidential accounts of EF

Implications

The interaction between questions and modals (RQ) is a promising testing environment for modal force, with crosslinguistic implications for EF, variable-force modals, modal systems without English-like duals (Nez Perce, [29]; Javanese, [30]), particles (e.g. German *wohl*, [25]), and evidential modals (Gitksan, St'át'imcets, [24]; Cuzco Quechua, [27]).

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