

Expressivity and semantic composition : evidence from *mica* exclamative questions

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Workshop Functional categories, dimensions of meaning, and expletiveness

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Keynote Talk

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Future is not a tense

- (1) a. Mary **was** here at 2pm
- b. Mary **will** be here at 2pm

The past is settled and the assertion in the past is either true or false. The future (even if deterministic) is **cannot be known** and what we say about the future is perceived as a *prediction* that can *turn out* to be true or false. *Will* is not a tense but a modal.

- (2) The French will be on holiday this week. (Palmer 1987)

Future is not a tense : present and past orientation

Italian future can have **present and past orientation**.

It is conjectural, akin to *might/must* (Bertinetto, 1979 ; Mari 2009,2010 ; Giannakidou and Mari, from 2013 to 2018).

(3) Flavio **sarà** nella sua camera.
Flavio be.FUT.3SG in-the his room.
'Flavio must be in his room.'

(4) Giacomo **avrà avuto** l'influenza.
Giacomo have.FUT.3SG have.PAST.PART the-flu.
'Giacomo must have had the flu.'

What happens in questions :

- (5) Dove **sarà** Anna ? Non la vedo.
Where. be.FUT.3SG Ann. Not her see.
'Where might Ann be ? I do not see her.'
- (6) Anna **sarà** a casa, ora ?
Ann be.FUT.3SG at home, now.
'Might Ann be at home now ?'

Mica in future questions

Context : Mary and Susan are having a coffee. They do not know each other very well. Mary looks very young, but she hints at the fact that she is much older than she seems.

- (7) Non avrai mica più di quarant'anni ?
Not have.FUT.2SG MICA more of forty-years
Don't tell me : are you older than 40! ?

What is MICA doing here ? Where does the mirative flavor come from ?

In the literature the MICA-future questions have been opposed to the simple future question which can be infelicitous.

- (8) #Non avrai più di quarant'anni ?
Not have.FUT.2SG more of forty-years
Might you be older than 40 ?

Path to understand these data :

- What is the meaning of a future question ?
- What is the meaning of MICA ?
- How is the mirativity constructed with future+MICA in questions ?

Potts (2005,2007) :

Expressives contribute non at issue content that is independent (does not semantically compose) and is by default speaker oriented.

- (9) Claim 1. Expressive types are only output types , i.e. :
 - a. At-issue content never applies to expressive content.
 - b. Expressive content never applies to expressive content.

- (10) Claim 2. No lexical item contributes both an at-issue and a CI-meaning. (Potts, 2005, 7)

Claim 2 has been challenged by Jayez and Rossari (2004); Gutzmann (2011) in the lexical domain.

- (11) Gianni est un Rital.
John is a Rital.

Rital : Italian + I do not like Italians

MICA : mixed behavior

- MICA is an expressive.
- MICA adds incredulity to questions (future and non-future).
- But, in future questions, it acts as a **repairing element of the otherwise uninformative descriptive meaning.**

Argument and outline :

- Show the epistemicity of future.
- Mica is a mirative-like element.
- MICA is an expressive element that makes the composition of future questions right (1)
- MICA is also an expletive for the contradictory bias that is compatible with the flexibility of future. (2)

Data & then Analysis

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

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Consider these questions :

- (12) Dove **sarà** Anna? Non la vedo.
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'Where might Ann be? I do not see her.'
- (13) Anna **sarà** a casa, ora ?
Ann be.FUT.3SG at home, now.
'Might Ann be at home now?'

No answer requested

Questions with future belong to the well-established cross-linguistic class of **conjectural** or **reflective** questions. (Matthewson 2010)

- Self addressed questions.
- Questions that cannot be answered

Future questions are akin to questions with modals.

No answer requested

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Both bare future questions and future questions with MICA are non-canonical questions that manipulate possible configurations of the internal state of mind of the speaker. (with MICA enhancing a reaction).

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Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

- Frana and Menendez Benito (2019) / Eckardt and Beltrama (2019) – Italian future is an evidential (building on Mari, 2010) no modal component.

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Un-answerability from the evidential component.

Idea common to Matthewson (2010) and Frana and Menendez-Benito (2019) – back to Littell (2009) :

- a question containing an evidential expects that the **hearer** ... has the relevant type of evidence (interrogative flip e.g. Murray, 2010 ; Bhadra 2017, Eckardt, 2020 a.o.)

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- a question containing an evidential expects that the **hearer** ... has the relevant type of evidence (interrogative flip e.g. Murray, 2010 ; Bhadra 2017, Eckardt, 2020 a.o.)
- the evidential is an inferential
- the hearer has **not direct evidence** to answer

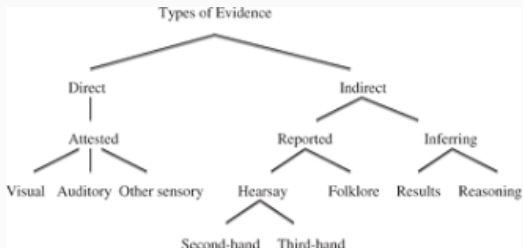
The future question is infelicitous if the addressee has direct evidence for the answer :

- (14) #Quanti anni avrai ?
How many years have.FUT.2SG
'How old might you be?'

#4 Future is an inferential evidential ?

Inferential evidential : take it literally **source of information** (as opposed to other sources).

Willett classification of evidentials (see also von Fintel and Gillies, 2010).



#4.1 Future is an inferential evidential ?

Inference is not necessary :

Context : I hear a loud noise in the street (direct evidence, hearing)

- (15) Sarà un incidente ?
Be.fut.3sg an accident ?
Is it maybe an accident ?

Ok, but, inference from what is heard.

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Inference is not necessary :

Context : I hear a loud noise in the street (direct evidence, hearing)

- (15) Sarà un incidente ?
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Is it maybe an accident ?

Ok, but, inference from what is heard. If 'inference' is a super-category transversal to other evidential categories, then we are aiming at a different notion than "source" of information and we cannot oppose inference and direct evidence.

#4.2 Future is an inferential evidential ?

Inference is not sufficient :

Context : 3 boxes and 1 ball. The ball is hidden below one of the three boxes.

(16) The ball is neither in A nor in B

#Sarà in C

Be.fut.3sg in C

It is maybe in C

Future is an inferential evidential ?

The evidence must be **partial** (Giannakidou and Mari, 2016,2018,2021). (you can be inferential and have total knowledge, like in the box case)

Quality and source are transversal categories

Quality is transversal to source types :

- Inference ranges from strict implication to guess
- Reportative ranges from high quality ("true news") to low quality ("fake news")
- Visual ranges from high quality (clear vision) to low quality (blurred vision)
- ...

What matters for epistemic modals (and FUT) is reliability not source.

Quality and source are transversal categories

Italian future enhances an inferential process that cuts across different evidential sources, and the inference must be **defeasible**.

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Embedding epistemic modals in questions?

Epistemic modals embed and flip in questions. Evidentiality is not needed.

- (17)
- a. Secondo te, deve essere un dottore?
According to you, must he be a doctor?
 - b. Secondo te, può essere un dottore?
According to you, may he be a doctor?
 - c. Secondo te, sarà un dottore?
According to you, may he be a doctor?

Embedding epistemic modals in questions ?

- (18) **Secondo te può** esistere un luna-park per grandi e bambini interamente fatto a mano? (google)
According to you, might a fair for adults and children entirely hand-made exist?
- (19) (Ci sarà Jack Miller, che da vice-campione della Moto è salito alla classe regina) **secondo te, sarà pronto** psicologicamente e fisicamente? (google)
(...) might it be the case that he is psychologically and physically ready?

see Eckardt and Beltrama 2019

BUT : Future questions, unless otherwise stated, are always reflective, i.e. speaker oriented.

FUT questions are reflective

Future question with the knowledgeable addressee are perfectly fine.

Context : Christmas eve. The gifts are under the Christmas tree. I bought all the gifts. *My son asks me :*

- (20) Cosa ci sarà in quel pacchetto ?
What there be.FUT.3SG in that box ?
'What will be there, in that box?'

If the question is information seeking is out. The gift case, the question is not information seeking.

A possible last objection

It is possible that the speaker knows the answer. In (21) I (the speaker) know what is under the Christmas tree, yet I question my son.

Context : Christmas eve. The gifts are under the Christmas tree. I bought all the gifts. *I ask my son :*

- (21) Cosa ci sarà in quel pacchetto ?
What there be.FUT.3SG in that box ?
'What will be there, in that box?'

Here I am **condescending** and I am endorsing the perspective of my son.

- Italian future questions are always reflective (unless anchored to a second or third party viewpoint).

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Basic facts

- *Mica* occurs in a subset of contexts where standard negation *non* can occur.
- It can deny a proposition that has never been expressed linguistically, but simply inferred or believed to be believed by the addressee.

Cinque 1976

Context : S sees A pouring milk into a dish for S's cat.

S infers that p is assumed by A

- (22) Guarda che il latte non fa mica bene al
look that the milk NEG does MICA good to-the
gatto.
cat
Look, milk is NOT good for cats!

Cinque's analysis

(23)

$$\llbracket \mathbf{NON} \alpha \rrbracket^c = \neg \llbracket \alpha \rrbracket^c$$

$$\llbracket \mathbf{MICA} \alpha \rrbracket^c = \llbracket \mathbf{NON MICA} \alpha \rrbracket^c = \neg \llbracket \alpha \rrbracket^c$$

Defined in c only if $\llbracket \alpha \rrbracket^c$ is assumed by some participant in c .

Frana and Rawlins (2019) :

- In **assertions**, MICA sentences are felicitous in contexts where p is assumed by some participant in the conversation (= Cinque).
- **Questions** with MICA are felicitous if the speaker has prior bias (prior to the exchange) for $\neg p$.

nb : According to F&R MICA has two different contributions in assertions and questions

Frana and Rawlins (2019) :

$$\llbracket \mathbf{mica} \rrbracket^{c,w} = \lambda p . \neg p$$

Defined for p, c, w only if

$$\forall w' \in \text{Epi}_{s_c}(w) : (\forall w'' \in \text{Conv}_{s_c}(w') : (p \notin CG_{w''}))$$

Definition is equivalent to: $\llbracket \mathbf{mica} \rrbracket^{c,w} = \llbracket \mathbf{FALSUM} \rrbracket^{c/\text{Origo} \rightarrow s_c, w}$

(24)

The speaker believes that p should not be part of the common ground.

Negative bias (S expected $\neg p$, evidence for p). Clara invites Miles for dinner and makes clear to him that she will prepare her best dishes. When he gets there, Miles barely touches any food. Clara asks him :

- (25) Non hai mica già mangiato?
not have.PRES.2sg MICA already eaten?
Didn't you eat already?

Problem : p is expected

Even in questions, p can be expected to be part of the common ground (and not $\neg p$)

- (26) I am eating a lot. My friend asks me :
Scusa, non sei mica a dieta ?
Sorry to ask, you are on a diet, don't you ?

Speaker expects p . Evidence for $\neg p$.

p should be part of the common ground according to the speaker

The main shortcoming

Previous literature focuses on the status of p as true or false in the conversation / in the speaker's expectations, but this is not what matters.

What matters is the contrast between two possible states of mind in view of the available information.

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Rebuttal of generic generalization

MICA is anaphoric to rules and generalizations of the form :

(27) E then q

These can be based on stereotypes, norms, commonsense reasoning...

A new attempt

MICA states that a certain generalization does not hold/ inference should not go through.

(28) MICA :

Presupposes (27)

$$\llbracket MICA \rrbracket = \lambda q[E \wedge \neg q]$$

A new attempt

MICA states that a certain generalization does not hold/ inference should not go through.

(28) MICA :

Presupposes (27)

$$\llbracket MICA \rrbracket = \lambda q [E \wedge \neg q]$$

(29) MICA Refined :

Presupposes (27)

$$\llbracket MICA \rrbracket^{w, E, Norm} = \lambda q \forall w' \in Norm(E(w)) \neg q(w')$$

MICA states that the rule does not hold **according to the speaker**.

(30) MICA Refined :

Presupposes (27)

$\llbracket \text{MICA} \rrbracket^{w,E,Norm,DOX} =$

$\lambda q \forall w' \in DOX(Norm(E(w))) \neg q(w')$

- (31) I am eating a lot. My friend asks me :
Non sei mica a dieta (p) ?
You are on a diet, don't you ?

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MICA : eating a lot AND on a diet

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MICA : eating a lot AND on a diet
- (33) $\llbracket \text{Non sei mica a dieta ?} \rrbracket^{E, Norm, DOX, w}$ is defined iff
- $\forall w' \in Norm(E(w')) \neg p(w')$
 - MICA : $\forall w' \in DOX(Norm(E(w')))) p(w')$
 - $\{p, \neg p\}$

Summary of the data

	Evidence	Speaker bias
Non sei a dieta ?	not p (eating)	information seeking
Sei a dieta ?	p (diet)	information seeking
Bare FUT questions		
Sarai a ``non''-dieta ... ?	*not p (eating)	
Sarai a dieta ... ?	*p (diet)	
(NON) MICA NON-FUT QUESTIONS		
(Non) Eri/#sei mica a dieta ?	not p (eating)	p and contradictory (dieta) -- presupposed
(Non) #Eri/sei mica a dieta ?!	p (diet)	non-p and contradictory (not diet) -- presupposed
(NON) MICA FUT QUESTIONS		
(Non) sarai (mica) a dieta ?	*not p (eating)	N/A
(Non) sarai mica a dieta ?	p (diet)	not p and mirative -- refrain from updating with the natural conclusion from evidence

Another argument for the epistemicity of the future

- Italian future is only compatible with p evidence, unlike non-modal sentences.
- Epistemic modals put forward new hypotheses based on contextual clues.
- When the contextual evidence disconfirms a previous belief, they cannot be used.

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Questions and possibility modals feature non-veridical states

- A nonveridical state conveys **epistemic uncertainty** (Giannakidou 1997; Giannakidou and Mari 2016, 2018, 2021)

(34) *Nonveridical information state*

An information state $M(i)$ is nonveridical about p iff $M(i)$ contains both p and $\neg p$ worlds.

- (35) *Nonveridicality Axiom of modals and questions*
MODAL ($M(i)$) (p) can be defined if and only if the modal base $M(\text{speaker})$ is nonveridical, i.e. only if $M(i)$ contains p and $\neg p$ worlds.

MUST / FUT also obeys the non-veridicality axiom (Giannakidou and Mari 2016,2018, contra von Stechow and Gillies 2010).

Two modal bases

MUST / FUT associates with an epistemic modal base $M(i)$.

(36) $M(i)(t_u)(w_0) = \lambda w'(w' \text{ is compatible with what is known by the speaker } i \text{ in } w_0 \text{ at } t_u)$

Two modal bases

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(36) $M(i)(t_u)(w_0) = \lambda w'(w' \text{ is compatible with what is known by the speaker } i \text{ in } w_0 \text{ at } t_u)$

$\text{Ideal}_{\mathcal{S}}$ as a function over $M(i)(t_u)(w_0)$, the output $\text{Ideal}_{\mathcal{S}}$ is a subset of $M(i)(t_u)(w_0)$:

(37) $\text{Ideal}_{\mathcal{S}}(M(i)(t_u)(w_0)) = \{w' \in M(i)(t_u)(w_0) : \forall q \in \mathcal{S}(w' \in q)\}$

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\mathcal{S} is a set of propositions that correspond to common ground norms/personal convictions etc.

! It is a secondary modal base, not an ordering source. $\text{Ideal} = \text{DOX} + \text{Norm}$

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

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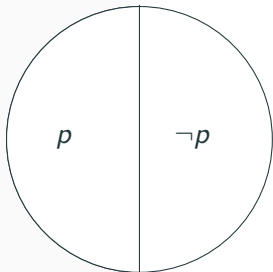
- (38) Gianni sarà.FUT a casa.
Gianni might/must be home.

FUT : p is true in the Ideal set of $M(i)$. Given a set Ideal_S and the utterance time t_u ,

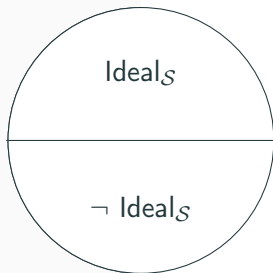
- (39) $\llbracket \text{FUT (PRES } (p)) \rrbracket^{M,i,S}$ is defined only if $M(i)$ is nonveridical and is partitioned into Ideal_S and $\neg\text{Ideal}_S$ worlds. If defined,
 $\llbracket \text{FUT (PRES } (p)) \rrbracket^{M,i,S} = 1$ iff $\forall w' \in \text{Ideal}_S : p(w', t_u)$

Presuppositions of FUT

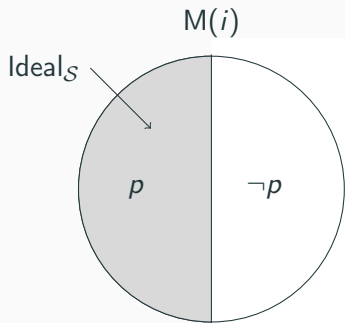
$M(i)$



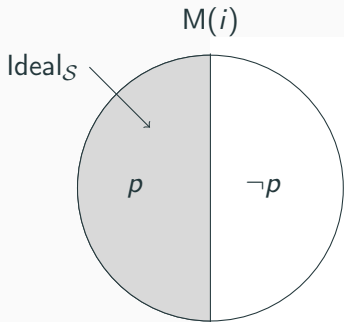
$M(i)$



Assertion of FUT



Assertion of FUT



There are no ordering source. This is introduced by a **metaevaluator**.

Giannakidou and Mari 2018 L&P ; for Italian future see Mari, IATL 2021.

- (40) $\llbracket \text{FUT (PRES } (p)) \rrbracket^{M,i,\mathcal{S}}$ is defined only if
- (i) $M(i)$ is nonveridical and is partitioned into $\text{Ideal}_{\mathcal{S}}$ and $\neg\text{Ideal}_{\mathcal{S}}$ worlds.
 - (ii) Non-at issue content : \mathcal{O} is **empty** (this does not matter here (yet))
- If defined,
- $$\llbracket \text{FUT (PRES } (p)) \rrbracket^{M,i,\mathcal{S}} = 1 \text{ iff } \forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u)$$

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

Future questions

Context : Wondering where Marco is.

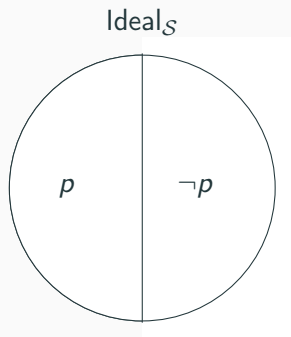
- (41) Sarà forse a casa ?
Be.FUT.3sg maybe at home ?
Might he maybe be at home ?

A new analysis that accounts for reflexivity.

FUT is interpreted above QUES.

- (42) $\llbracket \text{FUT (QUES } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}}$ is defined only if :
- (i) $M(i)$ is nonveridical and is partitioned into $\text{Ideal}_{\mathcal{S}}$ and $\neg \text{Ideal}_{\mathcal{S}}$ worlds.
 - (ii) Non-at issue content : \mathcal{O} is empty
- $$\llbracket \text{FUT (QUES } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} =$$
- $$\forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u) \vee \neg p(w', t_u)$$

“Fake” question : the disjunction is embedded under the modal.



- **Reflexivity** : the inner mental state is represented as partitioned.

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- **Reflexivity** : the inner mental state is represented as partitioned.
- **Un-Addressed** : the disjunction is relativized to a state of mind.
- **Recursivity** : adding information to M does not improve the state of uncertainty. Now Ideal is partitioned.
- **Un-answerability** : Ideal does not solve the question. and an answer is not even requested.

Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

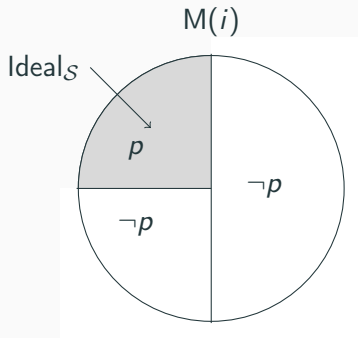
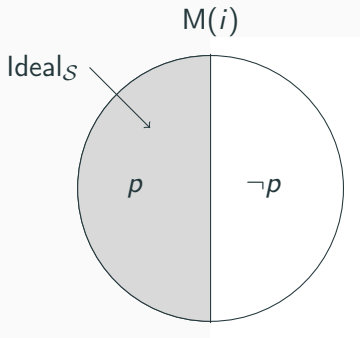
Back to questions

Future questions

On MICA future questions

Without MICA :

- (43) $\llbracket \text{QUES (FUT (} p \text{))} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}}$ is defined only if :
 $M(i)$ is nonveridical and is partitioned into $\text{Ideal}_{\mathcal{S}}$ and $\neg\text{Ideal}_{\mathcal{S}}$ worlds.
 $\llbracket \text{QUES (FUT (} p \text{))} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} =$
 $\{\{\forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u)\}, \{\neg\forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u)\}\}$



There are various reasons why this question is not well-formed, depending on the theory adopted.

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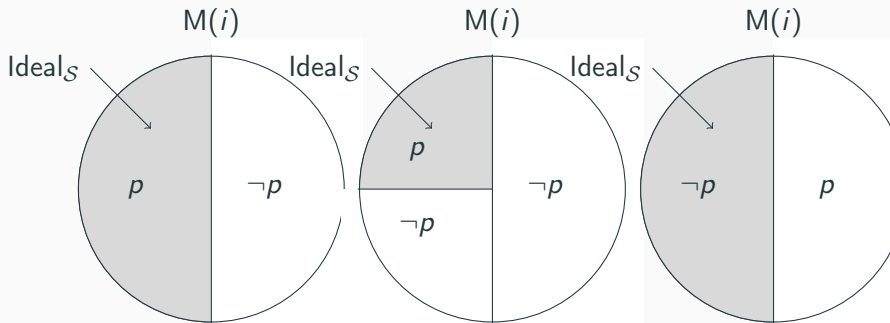
- As per Hamblin 1958; Groenendijk and Stockhof 1982, Mascarenhas 2010 questions denote sets of mutually disjoint alternatives. The alternatives above are not disjoint.
- According to a different view, any question opens up three options *yes*, *no* and *I do not know* (Ciardelli et al. 2009, Enguehard 2021).

There are various reasons why this question is not well-formed, depending on the theory adopted.

- As per Hamblin 1958; Groenendijk and Stockhof 1982, Mascarenhas 2010 questions denote sets of mutually disjoint alternatives. The alternatives above are not disjoint.
- According to a different view, any question opens up three options *yes*, *no* and *I do not know* (Ciardelli et al. 2009, Enguehard 2021).
- Along these lines, we propose that MICA adds the alternative necessary to form a well-formed question. The first alternative corresponds to the affirmative answer, the second alternative to the 'I do not know' answer, and the third alternative to the negative answer.

MICA-QUES FUT

$$(44) \quad \llbracket \text{MICA} \bullet \text{QUES (FUT } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} = \\ \{ \forall w' \in \text{Ideals}_{\mathcal{S}} : \neg p(w', t_u), \{ \{ \forall w' \in \text{Ideals}_{\mathcal{S}} : p(w', t_u) \}, \\ \{ \neg \forall w' \in \text{Ideals}_{\mathcal{S}} : p(w', t_u) \} \}$$



Plan

Question and preview

The meaning of future (in questions)

The evidential account of Italian future : proposal and problems

Flip with epistemic modals ?

On MICA

Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

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On MICA future questions

Veridicality Principle of Cooperative Assertion

Co-operative assertion is known to be grounded in veridical commitment, i.e., it signals the intention of the speaker to convey her sincere commitment to the truthfulness of the propositional content.

Veridicality Principle of Cooperative Assertion

(45) John is at home right now

I am committed to the truthfulness of p , I believe or know that p is true.

Non-veridicality and lack of knowledge

If she is not saying something that she believes to be true or does not have adequate evidence for, she will send some specific signal.

(46) *Non-veridicality principle Giannakidou and Mari 2015, 2018a,b, 2021a,b a.o.*

A non-veridical state is a state of lack of knowledge. The speaker does not know whether p is true and entertains two possibilities p and $\neg p$.

The use of modals (*might, must*) and subjective markers hinges on non-veridicality.

In cooperative conversations, if the speaker is not committed to the truthfulness of p , she will very likely use a modal.

Non-veridical equilibrium

(47) John might be at home

State of true uncertainty where p and $\neg p$ are two equivalent possibilities. The speaker has no preference.

(48) John must be home

State of uncertainty, but the speaker is **biased** towards p .

Giannakidou 2013, Giannakidou and Mari 2015 sqq.

In both cases, the modal signals lack of full commitment.

- (49) Scale of commitment (Giannakidou and Mari 2016, 2021) :
« p , MUST p , MIGHT p » ;
where i is the speaker, p conveys full commitment of i to p ; MUST p conveys *partial* commitment of i to p , and MIGHT p conveys *trivial* commitment of i to p .

Further manipulations are performed by the adverbs.

Pause : Illustrating modal spread

Harmonic use (Lyons, 1977)

- (50) a. John **must definitely/probably** be at home
b. He **might possibly** be at home.

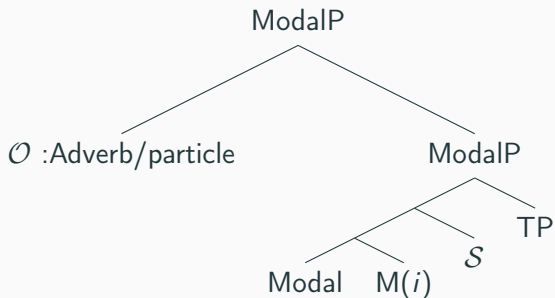
Non-harmonic uses (Giannakidou and Mari 2018b). Cross-linguistic variation :

- (51) a. **Può probabilmente** essere partito presto.
He might probably have left early
b. So there **must maybe** be some glitch somewhere along the line or something that makes this happen. I am sure is a cache or technical glitchup.
<https://www.blackhatworld.com/seo/>.

Adding the ranking function \mathcal{O}

A metaevaluator is a ranking function \mathcal{O} . A modal adverb is typically the realization of a silent \mathcal{O} .

(52)



Giannakidou and Mari 2018b

- (53) $\llbracket \emptyset \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} = \lambda q. \text{Ideal}_{\mathcal{S}}$ is a **weak necessity** with respect to $\neg \text{Ideal}_{\mathcal{S}}$ relative to $M(i)$ and \mathcal{O} & q
- (54) $\llbracket \emptyset \text{ MUST (PRES } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}}$ is defined only if the modal base $M(i)$ is nonveridical and it is partitioned into $\text{Ideal}_{\mathcal{S}}$ and $\neg \text{Ideal}_{\mathcal{S}}$ worlds. If defined,
 $\llbracket \emptyset \text{ MUST (PRES } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} = 1$ iff : **Ideal $_{\mathcal{S}}$ is a weak necessity with respect to $\neg \text{Ideal}_{\mathcal{S}}$** relative to $M(i)$ and \mathcal{O} & $\forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u)$

Effect of the adverbs on MUST

- (55) $\llbracket \text{Probably/mallon/probabilmente} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} =$
 λq . $\text{Ideal}_{\mathcal{S}}$ is a **weak necessity** with respect to $\neg \text{Ideal}_{\mathcal{S}}$
relative to $M(i)$ and $\mathcal{O} \ \& \ q$
- (56) $\llbracket \text{Definitely/oposdhipote/sicuramente} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} =$
 λq . $\text{Ideal}_{\mathcal{S}}$ is a **necessity** with respect to $\neg \text{Ideal}_{\mathcal{S}}$ relative to
 $M(i)$ and $\mathcal{O} \ \& \ q$
- (57) $\llbracket \text{Maybe/Forse/Isos} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} = \lambda q$. \mathcal{O} is **empty** & q

Giannakidou and Mari 2018b

- (58) $\llbracket \text{DEFINITELY MUST (PRES } (p)) \rrbracket^{\mathcal{O}, M, i, S}$ is defined only if the modal base $M(i)$ is nonveridical and it is partitioned into Ideal_S and $\neg\text{Ideal}_S$ worlds. If defined, $\llbracket \text{DEFINITELY MUST (PRES } (p)) \rrbracket^{\mathcal{O}, M, i, S} = 1$ iff : Ideal_S is a necessity with respect to $\neg\text{Ideal}_S$ relative to $M(i)$ and $\mathcal{O} \ \& \ \forall w' \in \text{Ideal}_S : p(w', t_u)$

Giannakidou and Mari 2018b

Effect of the adverbs on existential modality

- (59) Effect of the adverbs with **existential** modals.
- a. DEFINITELY (It. *assolutamente*; Gk. *oposdhipote*; Eng. *definitely*) : **Introducing positive bias.**
 - b. PROBABLY (It. *probabilmente*; Gk. *mallon*; Eng. *probably*) : **Introducing positive bias.**
 - c. MAYBE (It. *forse*; Gk. *isos* Eng. *maybe*) : **Maintaining the default.**

Giannakidou and Mari 2018b

- (60)
- a. Sarà **sicuramente** in piscina
FUT certainly at the swimming pool
 - b. Sarà **forse** in piscina
FUT maybe at the swimming pool

Very flexible modal, flexibility is in the metaevaluation.

The weakness of future

Italian future is compatible with guesses.

- (61) Dove sarà Gianni?
Where John might be?
- a. Bò. Sarà casa
 - b. Bò. Sarà forse casa
 - c. Bà. Sarà mica a casa (!?!)

What matters here is that Italian future is compatible even with **contradictory bias**.

Commitment and evidence with FUT

Scale of epistemic commitment with future :

$\langle p, \text{MUST } p, \text{MIGHT } p, \text{FUT } p \rangle$;

where i is the speaker, p conveys commitment of i to p ; **MUST** p conveys *strong* commitment of i to p , **MIGHT** p conveys *trivial* commitment of i to p and **FUT** p conveys *very low commitment to p and potentially contradictory committment*.

cale of epistemic commitment and evidence reliability with future :

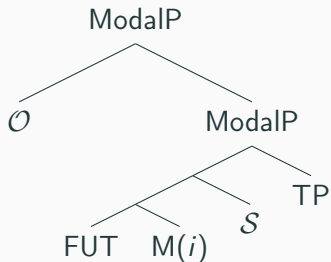
$\langle p$ (good quality evidence) \gg **MUST** p (partial but reliable evidence), \gg **MIGHT** p (low quality evidence), \gg **FUT** p (possibly no evidence or very subjective evidence) \gg

Subjectivity of FUT

- Italian FUT has been claimed to be not only flexible (and indeed underspecified, see Mari 2010)
- But also 'subjective' (Mari 2010, Squartini 2012, Ippolito and Farkas 2021).
- Subjectivity is not in the modal base (Mari 2021 ; Giannakidou and Mari 2023)
- Here : flexibility and **subjectivity in the metaevaluation.**

(62) Sarà in piscina

(63)



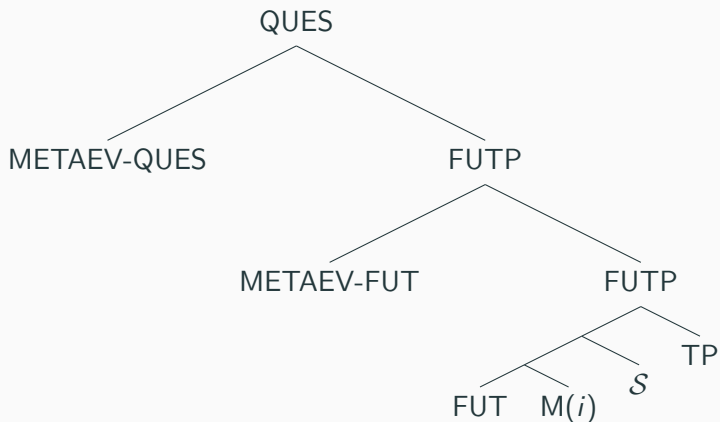
Default for the Italian future (Mari, 2021 ; Giannakidou and Mari 2022) : weak bias.

- (64) $\llbracket \text{MAYBE FUT (PRES (p))} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}}$ is defined only if $M(i)$ is nonveridical and is partitioned into $\text{Ideal}_{\mathcal{S}}$ and $\neg \text{Ideal}_{\mathcal{S}}$ worlds. If defined,
- $$\llbracket \text{MAYBE FUT (PRES (p))} \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} = 1 \text{ iff } \mathcal{O} \text{ is empty \& } \forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u)$$

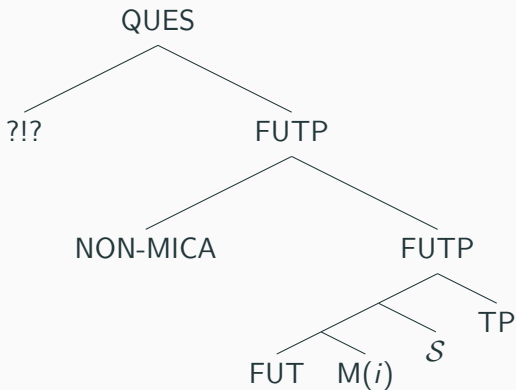
The default bias can be strengthened

- (65) $\llbracket \text{PROBABLY FUT (PRES } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}}$ is defined only if $M(i)$ is nonveridical and is partitioned into $\text{Ideal}_{\mathcal{S}}$ and $\neg \text{Ideal}_{\mathcal{S}}$ worlds. If defined,
- $\llbracket \text{PROBABLY FUT (PRES } (p)) \rrbracket^{\mathcal{O}, M, i, \mathcal{S}} = 1$ iff $\text{Ideal}_{\mathcal{S}}$ is a **weak necessity** with respect to $\neg \text{Ideal}_{\mathcal{S}}$ relative to $M(i)$ and \mathcal{O} & $\forall w' \in \text{Ideal}_{\mathcal{S}} : p(w', t_u)$

The skeleton of a FUT question with QUES > FUT



NON-MICA, QUES > FUT, and quexclamatives



Unexpectedness (*mica*) triggers exclamation/questioning (*quexclamatives*).

The skeleton of a FUT question

The metaevaluation is non-at-issue content. (pace G&M 2018b who treat it as at issue ; but see Mari 2021 - CreteLing Talk).

(66) $\llbracket \text{QUES NON-MICA FUT (PRES } (p)) \rrbracket^{M,i,S}$ is defined only if :

(i) Presupposition $M(i)$ is nonveridical and is partitioned into Ideal_S and $\neg \text{Ideal}_S$ worlds. If defined

$\llbracket \text{QUES NON-MICA FUT (PRES } (p)) \rrbracket^{M,i,S} =$

Non-at issue • at-issue :

$\forall w' \in \text{Ideal}_S : \neg p(w', t_u) \bullet \forall w' \in \text{Ideal}_S : p(w', t_u)$ or
 $\neg \forall w' \in \text{Ideal}_S : p(w', t_u)$

MICA : expletivity of contradictory bias

- MICA is thus the expletive of the contradictory bias of the future.
- This contradictory bias also explains the emerging mirative meaning of FUT.

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Previous proposals

New proposal

Analysis of Italian future

Tools

Italian future

Back to questions

Future questions

On MICA future questions

(MICA) FUT questions : conclusions

- Future questions are introspective
- FUT scopes over QUES

MICA is an evidence challenger.

- MICA in Future questions has **expressive meaning but this meaning contributes to the interpretability of the question.**
- MICA is an **expletive** for the contradictory bias of FUT.
- Contradictory information triggers *quexclamativity* as a mirative bias of the question.

Thank you !

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