

Italian ‘mica’ in assertions and questions¹

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Abstract. This paper gives an account of the Italian negative particle *mica* as an epistemic common ground management operator signaling denial/negation relative to the speaker. This allows us to provide a unified account of its behavior in assertions and polar questions. Along the way we give an account of biased Italian negative polar questions, arguing that they behave parallel to English biased questions despite surface differences.

Keywords: Semantics, pragmatics, polar questions, negation, Italian, particles.

1. Introduction

This paper gives an account of the Italian particle *mica* at the semantics-pragmatics interface. *Mica* is a negative element, and appears in both assertions and polar questions. In assertions, it indicates a denial, whereas in polar questions, it indicates a prior expectation on the part of the speaker for the negative answer to the question, thus reversing the usual bias of negative PQs (henceforth, NPQs). We propose that *mica* is uniformly a *perspectively anchored common ground management* operator. That is, it indicates an agent’s beliefs about whether some proposition should be part of the common ground. This analysis therefore unifies it with other common ground management operators that have been proposed to account for question bias and denials across languages (Romero and Han 2004, Repp 2013).

The first part of the paper introduces the key data about *mica* and how it is situated in the negative system of Italian. We then proceed to explore the pragmatics of NPQs in detail, showing that despite a single surface position for negation, Italian can show Ladd’s ambiguity (Ladd 1981), suggesting that the two languages should receive a parallel analysis. We then develop that analysis by extending Romero and Han (2004)’s analysis of biases in English PQs to Italian. Finally, with the toolbox for NPQs in hand, we return to the perspectival account of *mica*, proposing that in contrast to other CG-management operators, *mica* makes a claim about the common ground from the speaker’s perspective.

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1.1. Negation and Mica in Italian

Italian uses a preverbal negative marker (*non*) to express sentential negation:² The particle *mica* can appear as a *discontinuous* element of *non*, as in B's response in (3), or as an *autonomous* negative element (Cinque 1976) as in (4), without any difference in interpretation.

- | | | | |
|-----|--|-----|---|
| (1) | Gianni non ha telefonato.
Gianni NEG has phoned.
'Gianni didn't call.' | (2) | Non fa freddo a Roma.
NEG does cold at Rome.
It's not cold in Rome. |
| (3) | A: Fa freddo fuori. 'it's cold outside.'
B: Non fa (mica) freddo.
NEG does (MICA) cold.
'It's not (MICA) cold.' | (4) | A: Fa freddo fuori. 'it's cold outside.'
B: Mica fa freddo.
MICA does cold.
'NOT-MICA it's cold.' |

Following Cinque (1976), Zanuttini (1997), we assume that autonomous *mica* is derived from discontinuous *mica* via movement: *mica* moves and takes the place of *non*, incorporating its negative meaning. As a discontinuous element of *non*, *mica* follows verbal elements (auxiliaries, modals, participles), but cannot precede the first one of them and it cannot occur after non-verbal elements that follow the verbal group (Cinque 1976). The spaces in the sentence below show where *mica* can occur in a sentence, the stars the places where it cannot occur:

- (5) Non * puo' _ essere _ stato _ vinto _ da quella schiappa *.
NEG * can _ be _ been _ won _ by that fool *
'He cannot have been beaten by that fool.' (Cinque 1976)

2. Using *mica* in assertions signals contrast / denial

Unlike plain negative assertions, *mica* in declaratives requires a prior claim or salient expectation to deny (Cinque 1976). We identify three types of context that license the use of *mica*: *direct contradiction* where *mica* is used to deny a previous utterance, or the presupposition/implication of a previous utterance; *speaker's expectation* where *mica* is used by the speaker to deny one of her own expectations and *implied inference*, where *mica* is used to deny a proposition that the speaker is implicitly attributing to the addressee.³

²We will focus exclusively on the use of *mica* in standard Italian. See Garzonio & Poletto (2009) and Pennello & Pescarini (2008) for differences between standard Italian and Northern Italian dialects in the use of *mica* and Visconti (2008) for a diachronic approach.

³The choice between autonomous and discontinuous *mica* in the examples is irrelevant to the interpretation.

- (6) **Direct contradiction** (A's utterance asserts, presupposes, or implies *p*)
- a. A: Mario ha pianto quando la ragazza l'ha lasciato.
'Mario cried when his girlfriend broke up with him.'
- S: Non é vero. Mario **mica** ha pianto quando la ragazza l'ha lasciato.
NEG is true. Mario **MICA** has cried when the girlfriend him-has left.
'That's not true. Mario NOT-MICA cried when his girlfriend left him!'
- (7) **Speaker's expectation** (S signals that (s)he previously expected *p*)
- a. Context: S is baking a cake but does not have all the ingredients. When she tries it, she is surprised that the cake turned out quite well.
- S: Ah però! **Mica** é venuta male la torta.
Ah! **MICA** is turned.out bad the cake
'Oh! the cake NOT-MICA turned out bad!'
- (8) **Implied inference** (S infers that *p* is expected by A)
- a. Context: S tries to pick up a cat from the street; the cat looks scared.
- S: Non avere paura, **mica** ti faccio male.
NEG have fear, **MICA** to.you do.1sg harm
'Don't be afraid, NOT-MICA I am going to hurt you!'

In all of the above examples, plain negation would also be acceptable. However, unlike plain negation, *mica* is infelicitous when there is not a previous claim/expectation to deny. Compare the minimally different dialogues below, where the negated sentence with *mica* is marked in the first dialogue, but acceptable in the second. The difference is that in (10), A asks a question that signals he is wrongly assuming that S's sister has a car, licensing *mica*.

- (9) Context (NYC Party): S and A live in Amherst and want to go to a party in NYC.
- A: How are we going to get there?
- S: Non lo so. Mia sorella **non** ha (**#mica**) la macchina questo
NEG it know.1sg. My sister **NEG** has (**#MICA**) the car this
fine settimana.
weekend.
'I don't know. My sister does not (**#MICA**) have the car this weekend.'
- (10) Context (NYC Party)
- A: How are we going to get there? Can your sister give us a ride?
- S: Mia sorella **non** ha (**mica**) la macchina. Ha soltanto 13 anni!
My sister **NEG** has (**MICA**) the car. Have.3sg only 13 years!
'My sister does not (**MICA**) have a car, she is only 13!'

There are two take-home points from the data presented so far. First, *mica* is not just for surface denials: it can deny a proposition that has never been expressed linguistically, including when that

has been simply inferred as a belief of another participant (up to and including a cat). Second, *mica* in declaratives occurs in a subset of the environments where *non* occurs.

2.1. Previous proposal for *mica* in assertions: Cinque 1976

Cinque (1976) (see also Zanuttini 1997, Penello and Pescarini 2008, Pescarini 2009) suggests that *mica* in declaratives is a presupposition trigger: a sentence of the form (*non*) *mica* p asserts that $\neg p$ and presupposes that p was expected. We sketch a particular version of this in (11):

- (11) a. $[[\mathbf{NON} \alpha]]^c = \neg [[\alpha]]^c$
 b. $[[\mathbf{MICA} \alpha]]^c = [[\mathbf{NON MICA} \alpha]]^c = \neg [[\alpha]]^c$
 Defined in c only if $[[\alpha]]^c$ is assumed by some participant in c .

This directly captures the distributional facts. First, it straightforwardly predicts that *mica* sentences will be good in a subset of the cases where *non* sentences are good. This is because the presupposition introduced in (11-b) as a definedness condition leads to *mica* sentences being defined in a subset of the context where regular negative sentences are defined, and having the same truth-conditions when defined. The idea also captures the intuition about when *mica* is licensed: the presupposition is intended to cover cases where any participant (including the speaker) said or implied or acted as if they believed $[[\alpha]]^c$. The case where a speaker is aware of their own prior assumptions, even if they haven't communicated them, is just another special case.

Despite capturing much of the distributional facts we have shown so far, we identify several areas for development of this account (at least as we have stated it). First, we will show in the next several sections that this account does not extend to *mica* in polar questions in any obvious way. Second, even for basic *mica* assertions there are some scopal facts that aren't predicted. As Penello and Pescarini (2008) discuss, *mica* interacts with other scopal elements in a way different from regular negation. In particular, while regular negation is ambiguously scoped with respect to deontic modals, *mica*-negation must scope above.⁴ These facts aren't incompatible with the presuppositional proposal per se, but they also aren't explained by it, at least on a naive syntax: why should *mica* negation need to scope higher than regular negation?

- (12) **Non** devi guidare.
 NEG must.2sg drive
 a. 'You must not drive' (MUST \gg NEG)
 b. 'It is not the case that you must drive. / You don't have to drive' (NEG \gg MUST)

⁴As usual, the judgment does not differ for autonomous *mica* vs. discontinuous *mica*, which provides further evidence that the apparently low position of *mica* in the discontinuous case is a surface phenomenon.

- (13) **Mica** devi guidare. / **Non** devi **mica** guidare.
Mica must.2sg drive / **NEG** must.2sg **mica** drive.
 a. #You must not drive. (#MUST >> NEG)
 b. You don't have to drive. (NEG >> MUST)

3. *Mica* in polar questions triggers bias reversal

Mica can also occur in polar questions (PQs), which in Italian have the same word-order as declaratives, though different intonation.⁵ Across languages, negative polar questions (NPQs) are known to trigger an *epistemic bias* effect (Ladd 1981, Büring and Gunlogson 2000, van Rooy and Safarova 2003, Romero and Han 2004, AnderBois 2011 a.o.). For instance, an English NPQ, such as *Don't you smoke?*, conveys that the speaker expected the positive answer to the question to be true, a 'positive epistemic bias', and is now requesting confirmation for that (positive) expectation.

Italian NPQs also trigger a positive epistemic bias, paralleling English (first shown in Frana and Rawlins 2013). However, when *mica* is added to an NPQ, it does not simply reinforce that positive epistemic bias (which we might expect given the assertion case), but reverses it. A *mica*-PQ triggers a *negative* epistemic bias, and NPQs and *Mica*-PQs have opposite felicity conditions. In both scenarios below, Clara has an expectation about whether Miles has eaten; in the first version she expects him to have eaten (S expected p), and in the second version she expected him to not have eaten (S expected $\neg p$). Contextual evidence in each seemingly contradicts these expectations.⁶ In the second scenario, NPQs in both languages are infelicitous – NPQs of this type cannot be used to double-check a positive implied inference, or a negative prior expectation. In contrast, *mica* is felicitous here, and can be used to attempt to confirm a negative prior expectation.

- (14) **Context: good manners v. 1** (S expected p , evidence against p)
 Clara invites Miles for drinks late in the evening and tells him to come after dinner. When he gets there, Miles asks if she has any food. Clara asks him:
- a. S: Didn't you eat already? (English NPQ)
- b. S: **Non** hai già mangiato?
NEG have.2sg already eaten?
 'Didn't you eat already?' (Italian NPQ)
- c. S: #**Mica** hai già mangiato?
mica have.2sg already eaten?
 'NOT-MICA ate already?' (Mica-PQ)
- d. S: #Non hai **mica** già mangiato? (Mica-PQ)

⁵As has been noted in the literature, *mica* does not occur in constituent (*wh*-) questions.

⁶As before, the alternative word order (discontinuous *mica*) has equivalent acceptability conditions. From now on, we will stop bringing up this alternative word order. Unless otherwise noted, this word order is available and has equivalent meaning as the autonomous *mica* order.

- (15) **Context: good manners v. 2** (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:
- a. S: #Didn't you eat already? (English NPQ)
 - b. S: #**Non** hai già mangiato? (Italian NPQ)
 - c. S: **Mica** hai già mangiato? (Mica-PQ)
 - d. S: **Non** hai **mica** già mangiato? (Mica-PQ)

Summing up, in assertions, *mica* can be used to deny the speaker's previous expectation (S signals she had a prior expectation for p). In Mica-PQs, on the other hand, the polarity of the licensing expectation (speaker's epistemic bias) has to be negative for *mica* to be licensed (S signals she previously expected $\neg p$). Thus, Mica-PQs and NPQs are in complementary distribution. Regular negation (*non*) and *mica* in assertions are not in complementary distribution. In view of these differences, it isn't obvious how one might extend the presuppositional account of *mica* in assertions to cover PQs, or extend the generalization above in the other direction.⁷

4. Italian and English negative polar questions

The (classic) puzzle of positive vs. negative polar questions is that on standard analyses, the positive and negative versions are denotationally identical. For example, on Hamblin's (1973) account, the equivalence in (16) holds. However, English speakers do not use polar questions indifferently. Any speaker of English knows that the three questions in (17) have different felicity conditions:

- (16) $\llbracket \text{whether } p \rrbracket = \llbracket \text{whether } \neg p \rrbracket = \{p, \neg p\}$ (because $\{\neg p, \neg\neg p\} = \{p, \neg p\}$)
- (17)
- a. Is it raining? (Positive Polar Question / PPQ)
 - b. Isn't it raining? (Negative Polar Question / NPQ with high negation)
 - c. Is it not raining? (NPQ with low negation)

We have so far seen that Italian NPQs parallel English NPQs with preposed negation. This is not quite the full story. First, we need to address whether Italian NPQs have readings corresponding to the non-preposed negation cases, and second, we need to address whether Italian NPQs and *mica* PQs have a reading that we have so far not discussed yet: suggestion readings.

⁷Foreshadowing our proposal, an account in terms of current evidence or an implied inference of $\neg p$ won't work: *mica* is felicitous in contexts where there is no evidence one way or the other. See discussion of (27) below.

4.1. The polarity of the proposition double-checked (inner vs. outer readings)

NPQs sound very natural in contradiction scenarios. These are cases in which the speaker had a previous expectation for p and the context, or the addressee, are providing partial evidence against p . When faced with epistemic conflict, the speaker might decide to ask an NPQ with one of these two intentions in mind: he or she may intend to confirm, or “double-check”, their (positive) prior expectation for p (outer negation reading) or to double-check the (new) implied proposition that $\neg p$ (inner negation reading) (C.f. Ladd 1981, Bring and Gunlogson 2000, Romero & Han 2004). The example below brings out the two readings intuitively. In both cases, the polarity of the prior epistemic bias is positive. It is just the proposition that gets ‘double-checked’ which changes: a prior expectation for p vs. a (new) implied inference that $\neg p$.

- (18) Context: Hampshire Mall (**Contextual evidence contradicts prior belief that p**)
S wants to go to the Hampshire Mall and has been told that the B43 stops there. While on route, the bus goes past what the speaker thought was his stop. S asks the driver:
- a. (What’re you doing?) Doesn’t this bus stop at the Hampshire Mall?
↪ S had prior expectation that the bus stopped here (p) and thinks driver may have skipped the stop, so is double-checking the prior expectation that p . (Outer reading)
 - b. (Oh no!) Does this bus not stop at the Hampshire Mall?
↪ S had a prior expectation that the bus stops there (p) and now thinks she may have been wrong, so is double-checking the implied inference that $\neg p$. (Inner reading)

We have already seen that Italian NPQs are only felicitous in contexts compatible with the speaker having a prior positive epistemic bias, but what about the choice of the proposition double-checked? Does Italian also distinguish between inner and outer readings? The key diagnostic used in the literature, introduced by Ladd (1981) and discussed in depth by Romero and Han (2004), is that of polarity licensing. In English, the two positions for negation show different behavior with respect to licensing of NPIs and PPIs. In particular, Ladd showed that a PPI disambiguates an NPQ in favor of the *outer* reading and that an NPI disambiguates an NPQ in favor of the inner reading. Another way of putting this is that inner negation licenses NPIs and anti-licenses PPIs, whereas outer negation does neither.⁸

⁸The % here indicates cross-speaker variation. For the majority of native speakers we have consulted (including one of the authors), NPQs with preposed negation unambiguously have outer readings. There seems to be agreement across speakers with respect to NPQs with non-preposed/low negation, which correlate with inner readings only. The situation is summarized below.

- (i) **Group 1:** High negation: only outer readings
Low negation: only inner readings
- (ii) **Group 2** (includes Ladd 1981, and the dialect analyzed by Romero and Han)
High negation: ambiguous between inner and outer readings
Low negation: only inner readings

- (19) **A PPI disambiguates in favor of the outer reading**
 A: Ok, now that Stephen has come, we are all here. Let's go.
 S: Isn't Jane coming **too**? (↗ double-check prior expectation that Jane comes)
 S': *Is Jane not coming **too**?
- (20) **An NPI disambiguates in favor of the inner reading**
 A: Now that John said he is not coming, it's going to be just me and you. We should cancel the party.
 S: Is Jane not coming **either**? (↗ double-check implied inference that J. isn't coming)
 S': %Isn't Jane coming **either**?

In Italian, we can construct a similar diagnostic using certain 'n-words' and their positive counterparts. We will employ the polarity items *anche* ('too/also') and *neanche* ('neither') to distinguish between the two readings.⁹ The data show that Italian NPQs can have both inner and outer readings, despite having only one surface position for negation. For instance, in the contradiction scenario in (21), S is double-checking the proposition *p* "that A is (also) going". The motivation behind the double-checking move is an apparent epistemic conflict: contextual evidence contradicts S's prior expectation for *p*.

- (21) Drinks Context 1: S, H, and A are out for drinks. S and B want to go to a bar and start walking towards it. A appears to stay behind. S asks A:¹⁰
 S: (Che fai?) **Non** vieni **anche** tu con noi?
 (What does?) NEG come.2sg too you with us?
 '(What are you doing?) Aren't you coming too?'

NPQs also license NIs; moreover, when *neanche* ('neither') is used in an NPQ, it disambiguates in favor of the inner reading (double-checking implied contextual inference for $\neg p$). In the scenario in 59) below, S is double-checking the implied proposition $\neg p$, i.e. "that A is not going"; as before the motivation behind the double-checking move is epistemic conflict.

⁹As shown by the contrasts below, the PI *anche* can be used only in positive sentences. On the other hand, the NI *neanche* - when it occurs post-verbally - is only grammatical in a negative sentence.

- | | |
|--|---|
| (i) Vengo anche io
come.1sg too I
'I am coming too.' | (iii) *Vengo neanche io
come.1sg neither I |
| (ii) *Non vengo anche io
NEG come.1sg too I | (iv) Non vengo anche io
NEG come.1sg too I
'I am not coming either' |

¹⁰This context is designed around the presupposition triggered by *anche*, that someone other than A is going.

- (22) Drinks context 2: S, H, A and B are out for drinks. We want to go to a different bar. B tells us she is done for the night and says goodbye. We start walking toward the bar, but A looks like they are staying behind. S asks A:¹¹
- S: (Oh no!) **Non** vieni **neanche** tu con noi?
 NEG come.2sg neither you with us?
 ‘(Oh no!) are you not coming either?’

Ladd argues on the basis of the PI facts that for English the difference between inner and outer readings is a genuine scopal ambiguity, involving the scope of negation and an operator whose nature remains to be determined. When the operator intervenes between negation and the polarity item, negation loses its usual (anti-)licensing ability. We propose that this analysis can be extended to Italian. In the case of outer negation readings, sentential negation is outside the scope of the operator (**NEG** >> **OP** [*p*]), thus the proposition being double-checked has positive polarity and NIs are not licensed and PIs are not anti-licensed. On the other hand, in the case of inner negation readings, sentential negation is below the operator (**OP** >> **NEG** [*p*]), and the proposition being double-checked has negative polarity, here NIs are licensed and PIs are anti-licensed.

4.2. Suggestion scenarios

So far the descriptive generalizations for preposed negation have been stated in terms of the speaker’s expectations, even though the scenarios we have presented also involve evidence. The reason for this is that preposed negative PQs are also licensed in neutral evidence contexts, with what have been described as ‘suggestion’ readings. As noted by Ladd, an NPQ in a suggestion scenario can only have the outer negation reading (double-checking a prior positive expectation).

- (23) **Ladd’s suggestion scenario** (neutral contextual evidence)
 Kathleen and Jeff just come from Chicago on the Greyhound bus to visit Bob in Ithaca.
 B: You guys must be starving. You want to get something to eat?
 K: Yeah, isn’t there a vegetarian restaurant around here? Moosewood, or something?
 K’: #Yeah, is there not a vegetarian restaurant around here?
- (24) Italian Variant: Clara has just arrived to visit her friend Luigi in Napoli.
 L: You must be starving, shall we we get something to eat?
 C: Sì, certo. Non c’era una pizzeria buona da queste parti? Da Michele, o un
 Yes, sure. NEG there.is a pizzeria good in this vicinity? By Michele or a
 nome del genere?
 name of.the kind
 ‘Yes, sure. Wasn’t there a good pizzeria around here? Da Michele or something?’

¹¹This context is designed around the presupposition triggered by *neanche*, that someone other than A is not going.

In this famous example, K has some prior expectation that this restaurant exists, but she is unsure; the contextual evidence is neutral. The effect of this NPQ is to suggest a resolution to some other salient question (e.g. where to go eat), by double-checking the speaker's prior expectation that *p*. This type of question therefore lines up with the 'outer reading'. Italian NPQs are also acceptable in suggestion scenario, illustrated by (24), thus reinforcing the parallel to English.

In summary, Italian NPQs behave in a parallel fashion to English NPQs: (i) they can signal information about the epistemic state of the questioner, (ii) they show the inner/outer ambiguity introduced by Ladd (revealed by the use of *n*-words), and (iii) on the outer reading can be used in neutral evidence contexts. What is crucial is that they involve a prior positive expectation on the part of the speaker.

4.3. *Mica* and expectations vs. evidence

As shown in (14) and (15) (the 'Good manners' scenarios), When *mica* is used in an NPQ, it reverses the expectation of the speaker's bias. That is, a regular NPQ signals the speaker's prior expectation for *p*, while a Mica-PQ signals the speaker's prior expectation for $\neg p$. The discussion of NPQs raises two gaps that we fill in.

First, *mica*-PQs do require the prior negative expectation on the part of the speaker, in contrast to regular PPQs, which are also compatible with a prior negative bias, but do not require it. For example, *mica* is inappropriate in neutral interview contexts in which the speaker does not intend to signal a previous expectation:

- (25) Interview context.
- a. *É* sposato? (PPQ)
be.3sg married?
'Are you-formal married?'
 - b. #Non *é* sposato? (NPQ)
NEG be.3sg marriedy
'Aren't you-formal married?'
 - c. #**MICA** *é* sposato? (Mica-PQ)
MICA be.3sg marriedy
'Aren't you-formal **mica** married?'

Second, like the outer NPQ, *mica* is compatible with neutral evidence contexts. One key case like this is the use of *mica* in polite questions, which can roughly be paraphrased using 'by any chance' in English, shown in (26). This question can be neutral as to whether there is any reason to think that the hearer will know the password – the use of *mica* in polite questions signals that a negative

reply is expected from the speaker, and thus it takes some weight off the addressee’s shoulders. A second case is shown in (27), where the speaker intends to double-check their expectation that $\neg p$, and can do so even with no evidence to the contrary.

- (26) Sai **mica** la password del computer di Mary?
 know **MICA** the password of.the computer of Mary
 ‘By any chance do you know Mary’s computer password?’
- (27) Context: Mother and son (**S expected** $\neg p$, **neutral evidence**): Your mother told you that I am bad influence and that you shouldn’t hang out with me. We still want to hang out but I don’t want to get in trouble with your mother so I asked you to not tell her when you come over. As I arrive, I get a bit paranoid and I ask you:
 a. S: #**Non** hai detto a tua madre che venivi a casa mia?
 b. S: **Mica** hai detto a tua madre che venivi a casa mia?

5. Analyzing biases in Italian polar questions

In this section we develop an account of Italian biased polar questions in the framework of Romero and Han (2004) (R&H), who gave a comprehensive analysis of the facts of English NPQs, as well as biased positive PQs with *really*. Their proposal builds on Ladd’s idea of a scope ambiguity. They suggest that biased PQs involve what Repp (2013) terms a *common ground management* operator, indicating (un)certainly about whether a given proposition should (not) be in the Common Ground in a Stalnakerian sense. Their original proposal was that this operator in English can scope both above and below negation, leading to the two readings (inner vs. outer). On top of this semantic proposal, they derive the epistemic inference about the speaker (the epistemic bias) via neo-Gricean reasoning about why a speaker would choose to formulate the question in a particular way.

Romero and Han (2004) propose that the operator is what they termed VERUM, signaling certainty that the prejacent should be added to the common ground. VERUM can be realized with the particle *really*, as well as by focal stress on polarity elements (i.e. comparable to Höhle’s (1992) Verum focus). This operator has the semantics of an epistemic modal, though it operates at a ‘meta-level’ with respect to discourse. The following is R&H’s entry for VERUM.¹²

- (28) $[[\text{VERUM}]]^x = [[\text{really}]]^x =$
 $\lambda p_{\langle s,t \rangle} . \lambda w_s . \forall w' \in \text{Epi}_x(w) : (\forall w'' \in \text{Conv}_x(w') : (p \in \text{CG}_{w''}))$
 $= \text{FOR-SURE-CG}_x(p)$. Roughly: $g(i)$ is sure that p should be added to the CG
- (29) I really am tired.

¹²In what follows, $\text{Epi}_x(w)$ the set of worlds conforming to x ’s knowledge in w ; $\text{Conv}_x(w')$ the set of worlds where all the conversational goals of x in w' are fulfilled (e.g. attain maximal information while preserving truth); CG_w is the Stalnakerian common ground at a world w , i.e. the set of propositions that the speakers assume to be true at w (c.f. Stalnaker 1978).

CG-management operators are perspectival operators: in assertions x is bound to the speaker, but in questions x is bound to the hearer. Intuitively, by uttering (29), the speaker is making a meta-conversational move by expressing a high degree of confidence about adding p (*I am tired*) to the CG. When used in a PQ, VERUM interacts with negation, turning a regular PQ into a meta-conversational question asking the hearer about their degree of certainty about p in various ways – e.g. are they really certain that p , are they really certain that not p , and are they not really certain that p . Romero (2014) revises this slightly, building on Repp (2013) – in the case of the outer reading, there is no distinct operator from negation, but rather a meta-conversational strong negative operator that Repp termed FALSUM. FALSUM indicates that ‘there are zero degrees of strength for adding a proposition to the Common Ground’. We adopt this revision here. The proposal then is that the LFs for *really* PQs and the two types of biased NPQs are as follows:

- (30) PPQ with ‘really’: [Q [VERUM [p]]] (‘Is Jane really going?’ / ‘Veramente viene Jane?’)
(31) Inner NPQ: [Q [VERUM [\neg [p]]]] (‘Is Jane NOT going?’ / ‘Non viene neanche Jane?’)
(32) Outer NPQ: [Q [FALSUM [p]]] (‘Isn’t Jane going?’ / ‘Non viene (anche) Jane?’)
(33) $\llbracket \text{FALSUM} \rrbracket^x = \lambda p_{\langle s,t \rangle} . \lambda w_s . \forall w' \in \text{Epi}_x(w) : (\forall w'' \in \text{Conv}_x(w') : (p \notin \text{CG}_{w''}))$
= FOR-SURE-NOT-CG $_x(p)$.

Romero & Han supplement the syntax/semantics proposal with two additional pragmatic pieces. First, VERUM questions (and by extension FALSUM questions) involve *biased partitions*, i.e. a set of polar alternatives where each alternative contains a CG-managing operator.¹³ Meta-conversational moves are subject to a discourse economy constraint (R&H’s *Economy Principle*: do not use a meta-conversational move unless necessary, i.e. to resolve epistemic conflict/to ensure Quality), which leads the hearer to reason about the motivation behind the speaker’s choice of using a meta-conversational question (as opposed to a regular PQ) and thus to draw inferences about the speaker’s epistemic state. Second, building on ideas from Bolinger (1978), R&H propose that the choice of alternative that gets pronounced indicates something about the speakers’ expectations for answers (R&H label this other type of bias, *the intent of the questioner*).¹⁴ We will indicate the spelled-out alternative by highlighting it and refer to it as the *B-emphasized* alternative.

- (34) **Biased PPQ:** Is Jane **really** going? (/‘Veramente viene Jane?’)
LF: Q_h [VERUM $_h$ [Jane is going]]
Biased partition: $\{ \text{FOR-SURE-CG}_h(p), \neg \text{FOR-SURE-CG}_h(p) \}$

¹³For simplicity we will stick with R&H’s original proposal that the CG-management component of VERUM/FALSUM is part of the at-issue content. More recently, Romero (2014) has suggested that this should be moved into non-at-issue content, following other work on particles; in Frana & Rawlins (2016, in prep) we develop an account along these lines for *mica* and argue that it in fact improves on the at-issue account.

¹⁴A closely related idea is developed by van Rooy and Safarova (2003) using the notion of a ‘utility value’, though we do not have space to develop the comparison here.

What does B-emphasis do? Here we depart somewhat from R&H in connecting B-emphasis directly to likelihood/belief.¹⁵

- (35) **B-emphasis in meta-conversational questions:** By B-emphasizing a CG-management alternative *A* in a polar question, S indicates that they expect *A* to be true.

Since these are meta-conversational questions, the alternatives are meta-conversational propositions. In the *really* example in (34), therefore, the speaker indicates that they expect that the hearer is certain that *p* (that Jane is going to the party) should be added to the common ground. By Economy, however, they must be signaling this in order to resolve some Quality-related dilemma. If the speaker takes the hearer to be certain about a given proposition, then this can't be a neutral context: there must be some reason for that certainty. Therefore, there must be an epistemic conflict. If the speaker thinks the hearer is biased towards *p*, the speaker must have expected $\neg p$, i.e. that Jane is not going. This derives the negative epistemic inference for PPQs with *really*. The reasoning for inner and outer readings of NPQs is quite similar.

- (36) **Inner NPQ:** Non viene neanche Jane? /Is Jane not coming either?
 LF: Q_h [VERUM_h [\neg [Jane is going]]]
 Biased partition: {FOR-SURE-CG_h($\neg p$), \neg FOR-SURE-CG_h($\neg p$)}

Here the speaker endorses the possibility that the hearer is certain about adding $\neg p$ (that Jane is not going) to the common ground. By Economy, they must be signaling this in order to resolve some Quality-related dilemma. Again, because of the high certainty, there must be an epistemic conflict, and so the speaker must therefore have an expectation for *p* (that Jane *is* going), and wants to double-check the implied proposition that she isn't.¹⁶ The outer reading is a bit more complex:

- (37) **Outer NPQ:** Non viene anche Jane? /Isn't Jane coming too?
 LF: Q_h [FALSUM_h [Jane is going]]
 Biased partition: {FOR-SURE-NOT-CG_h(*p*), \neg FOR-SURE-NOT-CG_h(*p*)}

Here, the speaker endorses the possibility that the hearer has *zero* degree of certainty about adding *p* to the CG, which is compatible with evidence against *p*, or lack of evidence (for either *p* or $\neg p$). If the hearer has signaled that they believe *p* to be false, this leads to the now-familiar epistemic

¹⁵We will not try to give an account that makes predictions from B-emphasis for PQs without a meta-conversational operator; see van Rooy and Safarova (2003), AnderBois (2011) for extensive discussion of such cases.

¹⁶On R&H's proposal, VERUM is optional for negation in the low position, explaining why non-preposed negation in English can occur in the absence of a previous bias, e.g. brochure-questions 'Have you not been sleeping well lately? Then try this pill.'

Third, this proposal predicts that *mica* PQs should have the same interpretation as double-negative PQs, discussed extensively by AnderBois (2011) albeit in a different framework. This prediction is once again wrong. For example, in Good Manners v. 2, double-negative PQs are infelicitous despite the felicity of *mica*. While the direction of bias in *mica* PQs is apparently similar, the fine-grained distribution of the two question types is not.

- (40) **Context: good manners v. 2** (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:
- a. #Didn't you not eat already?
 - b. **Mica** hai gia' mangiato?

6.1. Perspectival 'mica' in polar questions

The CG-managing operators VERUM and FALSUM developed by Romero & Han / Repp are perspectival operators: they introduce entailments about the state of the Common Ground from the perspective of one of the participants in the discourse, determined by the speech act operator. In assertions VERUM/FALSUM are speaker-oriented, and in questions, they are hearer-oriented.

Our proposal changes this: *mica* introduces a FALSUM operator that, rather than having bound perspective variables, has an aspect of its perspective necessarily anchored to the speaker. We will show that this inverts the pragmatic reasoning triggered by the use of a CG-management operator, leading to a reversal in the polarity of the bias on the part of the participants in discourse.

The proposal has two parts. First, in assertions, *mica* signals a FALSUM operator – that is, it indicates a species of meta-linguistic negation. Second, this FALSUM operator is obligatorily speaker-oriented, in terms of projecting the future of the discourse. In (41) we present first a slightly modified version of the Repp FALSUM operator. Given some proposition p , this returns true just in case given x 's knowledge, in all discourse states compatible with y 's conversational goals, p is not in the common ground. The difference between (41) above and the original version is that we have separated out the two anchors. We take x to be always bound by the speech-act operator: the epistemic perspective taken must be the same as the perspective of the speech act. The anchor y we suggest is the one that is obligatorily speaker-oriented for *mica*, but not for FALSUM in general.

$$(41) \quad \llbracket \mathbf{FALSUM} \rrbracket^{x,y,c} = \lambda p_{\langle s,t \rangle} . \lambda w_s . \forall w' \in Epi_x(w) : (\forall w'' \in Conv_y(w') : (p \notin CG_{w''}))$$

$$(42) \quad \llbracket \mathbf{mica} \rrbracket^{x,c} = \llbracket \mathbf{FALSUM} \rrbracket^{x,s_c,c}$$

In assertions, nothing changes: both x and y would be bound to the speaker regardless. However, polar questions ordinarily trigger perspective shift – on R&H’s proposal, VERUM and FALSUM are speaker-oriented in assertions but hearer-oriented in questions (for the outer reading, we would then have FALSUM_{hc,hc}). Our proposal is that this second index remains anchored to the speaker in Mica-PQs, as illustrated in (43). We pair this with the full denotation for a regular NPQ in (44).

$$(43) \quad \begin{aligned} & \llbracket \mathbf{Q}_{hc} [\mathbf{mica}_{hc} \mathbf{TP}] \rrbracket^c = \llbracket \mathbf{Q}_{hc} [\mathbf{FALSUM}_{hc,s_c} \mathbf{TP}] \rrbracket^c \\ & = \frac{\{\lambda w_s . \forall w' \in \text{Epi}_{hc}(w) : (\forall w'' \in \text{Conv}_{s_c}(w') : (p \notin CG_{w''}))\}}{\lambda w_s . \neg \forall w' \in \text{Epi}_{hc}(w) : (\forall w'' \in \text{Conv}_{s_c}(w') : (p \notin CG_{w''}))} \end{aligned}$$

(Where $p = \llbracket \mathbf{TP} \rrbracket^c$)

$$(44) \quad \begin{aligned} & \llbracket \mathbf{Q}_{hc} [\mathbf{FALSUM}_{hc,hc} \mathbf{TP}] \rrbracket^c = \\ & = \frac{\{\lambda w_s . \forall w' \in \text{Epi}_{hc}(w) : (\forall w'' \in \text{Conv}_{hc}(w') : (p \notin CG_{w''}))\}}{\lambda w_s . \neg \forall w' \in \text{Epi}_{hc}(w) : (\forall w'' \in \text{Conv}_{hc}(w') : (p \notin CG_{w''}))} \end{aligned}$$

In (43) the speaker asks the hearer to accept or reject the possibility of the speaker committing to not adding p to the CG, and indicates that the most likely resolution is that adding p is not compatible with s_c ’s goals, i.e. the speaker has zero degree of certainty for adding p . This kind of question is meta-conversational, and therefore the speaker must have a quality dilemma. In this case the starting point for the reasoning is inverted from the pragmatic reasoning for (44) (which is unchanged): the speaker indicates that they have zero degree of certainty for adding p to the common ground, which is compatible with S having some prior expectation for $\neg p$ or lack of evidence. Thus, either they want to double-check some implied inference that p (in the case of epistemic conflict), or they are hoping that the hearer can provide evidence for their expectation that p is false, as in the neutral scenario in (27). This account derives the bias reversal that is present with *mica*.

Recall that *mica* does not license NIs, and does not anti-license PPIs. This was puzzling on the Frana and Rawlins (2013) double-negation account, but follows directly on this proposal. While *mica* introduces a negative element, FALSUM does not license NPIs or anti-license PPIs, as it is the wrong sort of negative element, and so the prediction is that *mica* questions will behave exactly the same as outer-reading NPQs in terms of licensing.

A closely related puzzle is that Mica-PQs pattern like PPQs with respect to answer particles. That is, *si* and *no* pick out the ‘positive’ and the ‘negative’ answer respectively as if the question were a PPQ. While there are several accounts of answer particles on the market (see also Krifka 2013, Farkas and Roelofsen 2015), the facts follow from this proposal about *mica* on all of them. Here we focus on Kramer and Rawlins (2009). On that proposal, answer particles license surface anaphora (ellipsis) anteceded by a TP in a prior utterance. Because the antecedent TP on a *mica* question does not have any negative element, we expect the same behavior as with positive questions (a prediction noted also by Kramer and Rawlins 2009 for English NPQs on the outer reading).

6.2. Returning to ‘mica’ in assertions

Cinque (1976) (see also Zanuttini (1997), Penello and Pescarini (2008), Pescarini (2009)) suggest that *mica* is a presupposition trigger: a sentence of the form (*non*) *mica* p asserts that $\neg p$ and presupposes that p was expected. Our goal here is to capture the core insight of this idea, while providing a proposal that can account for the wider range of data and unify assertions and polar questions. The proposal we have made for *mica* questions straightforwardly makes a prediction for assertions. *mica* should signal a speaker-oriented denial via FALSUM_{s_c, s_c} .

This proposal directly captures the facts we have introduced about *mica* in assertions. First, its licensing conditions – *mica* in an assertion requires a salient expectation to deny. As with polar questions, a FALSUM assertion is meta-conversational, and leads to Economy-based inferences about why the speaker would choose to make a meta-conversational move, e.g. a quality dilemma. In denial contexts in particular, the speaker indicates an epistemic conflict. Therefore, a *mica* assertion will imply that the context provide some salient claim or expectation that p for the *mica* assertion to deny. If there is no such salient expectation, then the utterance will be a violation of the Economy principle. As with R&H’s epistemic inferences, this kind of inference is not cancelable. Second, because *mica* introduces a CG-management operator, we predict that its LF scope will necessarily be high in the left periphery, thus leading to the prediction that it should outscope modals.

Finally, this proposal captures the parallels between *mica* questions and assertions. In both cases, *mica* introduces a speaker-oriented FALSUM operator. The perspectival stability of *mica* is masked in assertions, but makes itself known in polar questions. The result of this stability for NPQs is to invert the R&H pragmatic logic, resulting in a reversed bias from regular NPQs, but in assertions *mica* simply looks like a strong negative particle.

While this account does not involve the presupposition that p is expected, it derives a very similar inference using the Economy principle, given the strong negative semantics of FALSUM , at the same time explaining the intuition that *mica* assertions are used as denials. The account thus preserves Cinque’s intuition, but derives it in a very different form.

7. Conclusions

We have provided a new account of the Italian negative particle *mica* as a perspectivally anchored Common Ground management operator (Romero and Han 2004, Repp 2013, Romero 2014), based on Repp’s meta-conversational negation operator FALSUM . This accounts for (i) its use in assertions to indicate denial, and (ii) its use in polar questions to signal that the speaker had some prior expectation that the prejacent is false, as well as (iii) bias reversal between negative and *mica* polar questions: the CG-management content is the same in each, but anchored to the hearer for NPQs and with a mixed (hearer/speaker) anchor for for *mica* questions, leading to inverted pragmatic inferences. In both assertions and polar questions, the reasoning is centered around Romero & Han’s

Economy principle: using a meta-conversational form leads to inferences about how the speaker intends to resolve a dilemma about the maxim of quality; either there is some epistemic conflict, or some missing evidence. Along the way we demonstrated that Italian negative polar questions, despite a single position for negation, show Ladd's ambiguity between inner and outer readings.

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