

Attitudes in discourse: Italian polar questions and the particle *mica**

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Abstract This paper explores ways in which discourse participants convey an attitude about another discourse participant's conversational move. We examine the semantics/pragmatics of Italian positive and negative polar questions (building on the literature on biased questions) and propose the first fully compositional analysis of the Italian particle 'mica', appearing in negative polar questions and negative assertions. The core is that 'mica' is member of a family of presuppositional, epistemic 'common ground management' operators, leading to a new account of epistemic inferences in biased polar questions that relies on the presuppositional nature of these operators. We argue that 'mica' is a high-left-periphery particle that indicates a presupposed bias against a proposition being added to the common ground, anchored uniformly to the speaker and therefore not showing 'interrogative flip'. The paper develops connections between common-ground management operators and evidentials, arguing that interrogative flip (and lack thereof) is a phenomenon that should be studied for a wide variety of discourse particles.

Keywords: Polar questions, negation, bias, discourse particles, epistemic modality, evidentiality, interrogative flip

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1 Introduction

This paper explores modal displacement at the level of discourse, where an agent conveys a mental attitude toward another agent’s conversational move. We focus on polar questions (henceforth, PQs) in Italian, and the ways in which such questions convey ‘biased’ attitudes. For example, by uttering the PQ in (1), B conveys a prior bias in favor of the positive answer to the question: that at some point before A’s utterance, B thought/assumed that A visited the South American country Peru.

- (1) A: Non sono mai stata in Sudamerica. (‘I’ve never been to S. America’)
 B: Non eri andata in Peru l’anno scorso?
 NEG were.2sg gone to Peru the.year last
 ‘Didn’t you go to Peru last year?’

If we take A’s assertion in this case to signal their intent to add the content proposition “I have never been to South America” to the common ground, B’s response — after the computation of the bias — conveys B’s attitude towards A’s conversational move. In particular, B is challenging A’s attempt to add this proposition to the common ground on the basis of epistemic conflict: what A is claiming is in conflict with B’s original belief. Building on the literature on the semantics/pragmatics of English PQs (Ladd 1981, Büring & Gunlogson 2000, Romero & Han 2004, a.o.), we provide the first detailed analysis of biases in Italian PQs and a novel account of the Italian particle *mica* at the semantics-pragmatics interface.¹

The first part of the paper introduces the key data about *mica* and its place in the negative system of Italian. *Mica* is a negative marker deriving from a nominal minimizer — the Latin word *micam* (‘crumble’). It appears in both assertions and PQs (Cinque 1976, Zanuttini 1997, Penello & Pescarini

¹ There is some controversy on how to characterize biases in PQs. Two types of ‘biases’ have been discussed: what Domaneschi, Romero & Braun (2017) term the *original speaker bias* or original belief prior to the utterance, and the newly acquired belief or *contextual evidence bias* emerging from contextual evidence (see also Sudo (2013)’s distinction between epistemic and evidential bias). Both types of bias have been used to model the speaker’s expectation for the most likely answer to the PQ. Ladd (1981) and Romero & Han (2004) focus on the original speaker bias; Büring & Gunlogson (2000) focus instead on the newly formed bias emerging from contextual evidence; van Rooy & Safarova (2003) merge the two types of biases into one; see also Gunlogson 2001, Asher & Reese 2005, AnderBois 2011, Gutzmann & Miró 2011, Sudo 2013, Krifka 2017, Roelofsen & Farkas 2015, Farkas & Roelofsen 2017, Domaneschi, Romero & Braun 2017, Goodhue 2018b for further discussion of bias and types of biasing effects we do not consider here.

2008, Frana & Rawlins 2016).² In assertions, this particle indicates a denial, whereas in PQs, it indicates a prior expectation on the part of the speaker for the negative answer to the question, thus reversing the usual speaker's bias of negative PQs, we will label this phenomenon *bias reversal*. We then proceed to explore the pragmatics of English and Italian PQs and argue that, despite surface differences, there are deep analogies between them, thus motivating a parallel analysis.

Bias reversal is illustrated by the pair in (2)-(3) below. In (2), B's negative polar question (with plain sentential negation, *non*) conforms to what we already observed for (1); the question conveys a prior expectation for the positive answer (that A had been invited to the party) and its use is licensed by 'epistemic conflict': the content of A's claim provides evidence against B's pre-existing positive expectation. Adding the particle *mica* to B's question in this mini-dialogue leads to infelicity. The reverse holds for (3). Here, B's negative question with *mica* conveys that B had a prior expectation for the negative answer (that A would not be invited to the party); omitting *mica* in this case, would lead to infelicity.³ This question is also motivated by epistemic conflict: the content of A's claim provides evidence against B's pre-existing negative expectation.

- (2) A: Tomorrow I am finally staying in.
B: Non eri stato (#**mica**) invitato alla festa per Alex?
'Weren't you invited to the party for Alex?'
- (3) A: I know that Alex hates me and tomorrow there's gonna be big drama.
B: Non sei #(**mica**) stato invitato alla sua festa a sorpresa?
'You aren't invited to his surprise party, are you?' (roughly)

² As noted by Cinque (1976), *mica* can also be used in negative imperatives, which we will set aside.

³ *Mica* is subject to dialectal/regional variation. As discussed in Squartini 2017, there is a secondary use of *mica* in some dialects with a distinct intonation, which does not trigger 'bias reversal'; in these dialects, with the relevant intonation pattern, (2) is acceptable with *mica*. This secondary use is not accepted by all speakers of Italian: "It is in fact a regional phenomenon restricted to varieties of Italian, whose geographical boundaries are not clear yet, but in a preliminary delimitation, can be located in an area in the North-West of Italy, possibly centered in Lombardy and Northern Emilia" (Squartini 2017: p. 12). In this paper, we will not consider this variety. For other aspects of variation in the use of *mica* across Italian dialects see also Garzonio & Poletto 2009, Penello & Pescarini 2008, and Visconti 2009 for a diachronic approach.

The second part of the paper develops an analysis of Italian biased questions by extending Romero & Han's (2004)/Romero's (2014) analysis of biases in English PQs to Italian, though we will make substantial revisions to the core theory. With the toolbox for PQs in hand, we return to the account of *mica*, proposing *mica* is uniformly an *epistemic common ground management* operator that indicates an agent's beliefs about whether some proposition should be part of the common ground. This analysis therefore unifies *mica* with other common ground management operators that have been proposed to account for question bias and denials across languages; in particular, the operators VERUM and FALSUM (Romero & Han 2004, Repp 2013, Romero 2014). We propose that *mica* is special in that it is an inherently subjective operator. VERUM and FALSUM mirror many documented evidential operators by reflecting the perspective of the speaker in unembedded assertions and of the hearer in questions, but *mica* does not shift its perspective in questions; thus it does not undergo what in the evidential literature is referred to as *interrogative flip* (Speas & Tenny 2003). We argue that this feature of *mica* is responsible for its bias reversal effect in PQs. More broadly, our proposal contributes to a larger understanding of the typology of perspectival anchoring in epistemic operators.

2 *Mica* and negation in assertions

We turn first to the behavior of *mica* in assertions. Italian uses a preverbal negative marker (*non*) to express sentential negation, as shown in the examples below.

- (4) a. Gianni non ha telefonato. b. Non fa freddo a Roma.
 Gianni NEG has phoned. NEG does cold at Rome.
 'Gianni didn't call.' 'It's not cold in Rome.'

The particle *mica* can appear as a *discontinuous* element of *non*, as in S's response in (5), or as an *autonomous* negative element (Cinque 1976) as in S', without any difference in interpretation. (What that interpretation is exactly, we return to in Section 2.2).

- (5) A: Fa freddo fuori. 'it's cold outside.'
 S: Non fa **mica** freddo. S': **Mica** fa freddo.
 NEG does MICA cold. MICA does cold.
 'It's NOT cold.' (roughly)

Following Cinque (1976) and 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:

- (6) Non * può _ essere _ stato _ vinto _ da quella schiappa *.
 NEG * can _ be _ been _ won _ by that fool *
 ‘He cannot have been beaten by that fool.’ (Cinque 1976: ex. 6)

We will adopt a version of Zanuttini’s syntax for *mica*. Zanuttini (based on a range of evidence about negation in Romance) proposes an extended sequence of functional projections that includes two positions for negation. (Standard) Italian negation *non* is base-generated in the higher position, NegP-1, and *mica* is generated in the specifier of the lower position, NegP-2; see (b) in Figure 1. The surface structure of autonomous *mica*, illustrated in (a) in Figure 1, involves *mica* moving to Spec,NegP-1, and as a result, the head of that projection not being spelled out independently. The featural annotations in these trees are our own augmentation to Zanuttini’s proposal. While these syntactic proposals do not settle what the LF of a *mica* sentence might be, they do suggest that, consistent with the interpretive evidence so far, autonomous and discontinuous *mica* should be treated in a similar fashion.

2.1 Using *mica* in declaratives signals contrast/denial

Unlike plain negation *non*, *mica* in declaratives requires a prior claim or salient expectation to deny (Cinque 1976). 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 (8), A asks a question that signals he is wrongly assuming that S’s sister is in a position of giving them a ride, i.e., she can drive, she has a car, etc. The implicit assumption licenses *mica* here (same judgments for autonomous *mica*).⁴

⁴ In the variety of Italian we focus the choice between autonomous and discontinuous *mica* in all the examples provided is irrelevant to the interpretation.

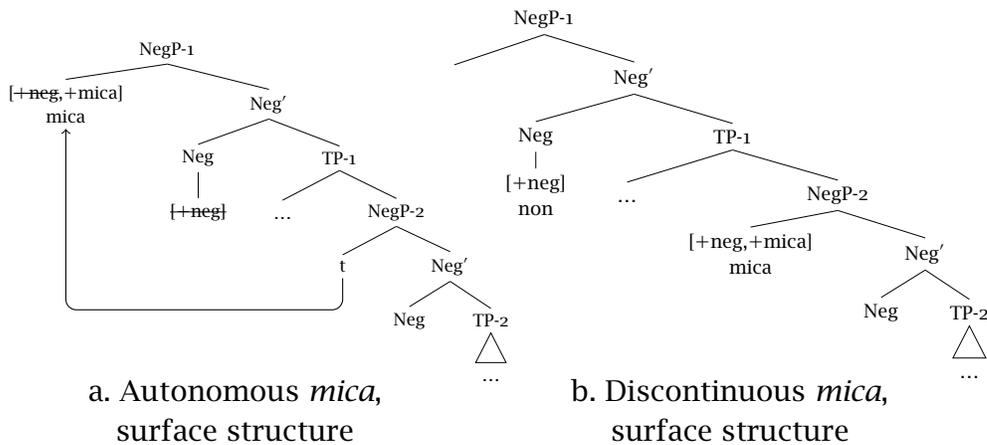


Figure 1 Our implementation of Zanuttini's proposal

- (7) 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: Mia sorella non ha (#**mica**) la macchina questo fine settimana,
 My sister NEG has (#MICA) the car this weekend
 altrimenti ci avrebbe accompagnato volentieri.
 otherwise us would.have accompanied gladly
 'My sister doesn't have (#MICA) the car this weekend, otherwise she would have gladly given us a ride.
- (8) A: How are we going to get there? Can your sister give us a ride?
 S: Mia sorella non ha (**mica**) la macchina. Ha 13 anni!
 My sister NEG has (MICA) the car. Has 13 years!
 'My sister DOESN'T have a car, she is 13!'

Unlike *non*, which can be used to assert new negative propositions, *mica* in declaratives seems to be limited to denials. It is known since Horn (1985) that the essential function of a denial is to object to a previous utterance on any grounds whatever, including its conventional or conversational implicata, its morphology, its style or register, or even its phonetic realization. We identify three types of context that license the use of *mica* in assertions: *rectification of an utterance*—where *mica* is used to object to a previous utterance on any ground whatever; *rectification of implied content*, where *mica* is used to deny a proposition that the speaker is attributing to the addressee, even when the addressee has not uttered anything to that effect; and *self-rectification*—

where *mica* is used by the speaker to deny one of her own prior expectations.⁵ Some examples are included below, where *p* refers to the propositional content of α in "(non...) mica α "; we will call this the prejacent.

(9) **Rectification of an utterance**

a. Propositional Denial (A's utterance asserts *p*)

A: Mario cried when his girlfriend broke up with him.

S: Non é vero. M. **mica** ha pianto quando lei l'ha
NEG is true. M. MICA has cried when she him-has
lasciato.
left.

'That's not true. Mario DIDN'T cry when she left him!'

b. Presuppositional Denial (A's utterance presupposes *p*)

A: How's your dog?

S: Non ho **mica** un cane io.
NEG have.1sg MICA a dog I
'I don't have a dog!'

c. Implicature Denial (A's utterance implicates *p*)

A: Gianna solved some problems. [implicates: not all of them]

S: Gianna non ha **mica** risolto QUALCHE problema, li ha
G. NEG has MICA solved SOME problem, them has
risolti tutti.
solved all

'G. did not solve SOME problems. She solved them ALL!'

(10) **Rectification of Implied Content** (S infers that *p* is assumed by A)

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

S: Guarda che il latte non fa **mica** bene al gatto.
look that the milk NEG does MICA good to.the cat.

'Look, milk is NOT good for cats!'

⁵ Self-rectification evokes the use of 'mirative' particles in evidential languages (DeLancey 1997). See Squartini 2017 for a descriptive discussion of connections between *mica* and mirativity. However, *mica* cannot always be described as mirative, e.g., in PQs used for polite requests.

- (11) **Self-rectification** (S signals a prior expectation that p / that $\neg p$ is surprising)

Context: S thinks it'll be cold, but finds it warmer than expected.

- S: Ah! Non fa **mica** così freddo.
 Oh! NEG does MICA so cold.
 'Oh! It's NOT so cold after all.'

There are two take-home points from this data. First, *mica* in declaratives occurs in a subset of the environments where *non* could or does occur — in all of the above examples, plain negation would also be acceptable. Second, *mica* is not just for surface denials: it can deny a proposition that has never been expressed linguistically, nor presupposed or implied by a previous utterance, including one that has been simply inferred as a belief of another participant.

2.2 Previous proposal: *mica* as presuppositional in assertions

Cinque (1976) (see also Zanuttini 1997, Penello & Pescarini 2008) 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 (12):

- (12) a. $\llbracket \text{NON } \alpha \rrbracket^c = \neg \llbracket \alpha \rrbracket^c$
 b. $\llbracket \text{MICA } \alpha \rrbracket^c = \llbracket \text{NON MICA } \alpha \rrbracket^c = \neg \llbracket \alpha \rrbracket^c$
 Defined in c only if $\llbracket \alpha \rrbracket^c$ is assumed by some participant in c .

This directly captures the distributional facts for declaratives from Section 2.1. First, it straightforwardly predicts that *mica*-sentences will be good in a subset of the cases where regular negative sentences would be good, because the presupposition introduced in (12b) as a definedness condition leads to *mica*-declaratives being defined in a subset of the contexts where negative sentences are defined, and having the same truth-conditions when defined. The proposal also captures the contextual licensing conditions for *mica*: the presupposition is intended to cover cases where any participant (including the speaker) said or implied or acted as if they believed $\llbracket \alpha \rrbracket^c$. A speaker being aware of their own prior assumptions, even if they haven't communicated them, is just another special case.

Despite capturing many of the distributional facts we have shown so far, there are some facts that do not obviously follow from this analysis (at least as we have stated it). First, as we will discuss in Section 2.3, *mica* must scope

higher than other operators in the sentence (e.g., modals). Second, in Section 3 we show that *mica* in polar questions induces what we label *bias reversal*, a pattern of data that will occupy much of the rest of the paper.

2.3 *Mica* must scope high

As Penello & Pescarini (2008) discuss, the presence of *mica* interacts with other scopal elements. Where regular negation is ambiguously scoped with respect to the deontic universal modal *dovere*, as shown in (13), *mica*-negation must scope above, as shown by the fact that (14b) is not a possible reading.⁶

- (13) **Non** devi guidare.
 NEG must drive
 a. ‘You must not drive.’ (MUST >> NEG)
 b. ‘You don’t have to drive.’ (NEG >> MUST)
- (14) **Mica** devi guidare.
 MICA must drive
 a. #‘You must not drive.’ (#MUST >> NEG)
 b. ‘You don’t have to drive.’ (NEG >> MUST)

Penello & Pescarini (2008)’s observation can be reproduced with existential deontics, as well. In this case though, the scope of the modal with respect to negation is fixed. Specifically, when negation is placed above the modal, the only possible interpretation is the one following surface scope (NEG >> CAN: “It is not the case that you can...”). Conversely, when regular negation is placed below the modal the only possible interpretation is CAN >> NEG (“It is allowed to not...” = “you don’t have to...”). The interesting fact is that *mica* can only be used in the first sentence type, where negation takes wide scope over the modal, as illustrated below. This observation is not about felicity in particular contexts, but rather is general: there is no possible scenario that would rescue the acceptability of *mica* in the second example (same judgments for autonomous *mica*).

⁶ In the variety of Italian we investigate in the present paper (Southern) the same judgment holds for discontinuous *mica*. Instead, Penello & Pescarini (2008) report that in the North-Eastern dialects (Veneto region) discontinuous *mica* has both interpretations in (13). We leave this point of variation for future investigation. The data point in (13)-(14) is due to Penello & Pescarini (2008), but the characterization in terms of scope is ours.

- (15) A: I was thinking of wearing a tie at the party.
 S: Non puoi (**mica**) indossare la cravatta. Il party è casual.
 NEG can (MICA) wear the tie. The party is casual.
 ‘You can’t wear a tie.’ (only NEG >> CAN, *mica* ok)
 S’: Puoi non indossare (***mica**) la cravatta. Il party è casual.
 can NEG wear (***MICA**) the tie. The party is casual.
 ‘You don’t have to wear a tie.’ (only CAN >> NEG, **mica*)

An analogous contrast can be replicated with epistemic modals. As in the case of the existential deontics, existential epistemic modals have fixed scope with respect to negation in Italian. When the modal *potrebbe* (roughly, “could” or “might”) precedes negation, the only available reading is the one following from surface scope (MIGHT >> NEG). This is shown in the context below, where Sherlock’s first reply to Watson can only mean that the murderer might not be (= does not have to be) Mr. Purple. Replacing ordinary negation with *mica* in this particular configuration, leads to ungrammaticality (same judgments with discontinuous *mica*). On the other hand, if Sherlock intends to express a strong denial of Watson’s claim, namely that the murderer can’t be Mr. Purple (NEG >> MAY), this can be rendered by placing negation above the possibility modal *può* (roughly, “can” or “may”). This configuration is grammatical with both regular negation and *mica* and both versions of the sentence obligatorily have the reading following from surface scope (which in this case is NEG >> MODAL).⁷

- (16) Context: Sherlock and Watson:
 W: L’assassino potrebbe essere Mr. Purple! Andiamo a interrogarlo!
 ‘The murderer might be Mr. Purple! Let’s interrogate him’
 S: Aspetta, l’assassino potrebbe non/***mica** essere Mr. P.
 Wait, the.murderer might NEG/***MICA** be Mr. P.
 ‘Wait, the murderer might not be Mr. Purple!’
 (only MIGHT >> NEG, **mica*)
 S’: No, l’assassino non/**mica** può essere Mr. Purple.
 no the.murderer NEG/MICA can be Mr. Purple.
 ‘It’s not the case that the murderer may be Mr. Purple!’
 (only NEG >> MAY, *mica* ok)

⁷ The sentences *L’assassino non/mica potrebbe essere (/mica) Mr. Purple* are also grammatical, but dispreferred to the stronger denial made by using *può* instead of *potrebbe*.

The last piece of scopal evidence comes from conditionals. As shown below, *mica* cannot occur in the antecedent of a conditional (17), while it can occur in the consequent (18). We take this to be evidence that *mica* at LF must be high enough in the left periphery that it does not embed in (conditional) adjuncts headed by *se* (‘if’; see Iatridou 1991, Haegeman 2003 et seq. for discussions of the ways in which the internal syntax of conditional adjuncts can be truncated relative to root CPs).⁸

- (17) A: It’ll rain tomorrow.
S: Se domani non/***mica** piove (//***mica**), possiamo andare al mare.
‘If it does not rain tomorrow, we can go to the beach.’
- (18) A: Tomorrow we’ll go to the beach.
S: Se domani piove, non/**mica** possiamo (/b**mica**) andare al mare.
‘If it rains tomorrow, we can’t go to the beach.’

All together the data suggest that *mica*-negation must scope high at LF, even higher than epistemic modals; if it must appear at LF high in the left periphery, both the scopal data and the conditional data fall out straightforwardly. This contrasts with the scopal possibilities for *non*, which can be substantially lower. These facts aren’t incompatible with Cinque’s presuppositional proposal, but they also aren’t explained by it: why should negation with *mica* scope so much higher than regular negation?

In summary, *mica* in assertions has three key properties. First, it is felicitous in a subset of cases where *non* is: those where the complement proposition of *mica* (the prejacent) is assumed or taken for granted by some discourse participant. Second, this isn’t just a ‘surface’ denial: *mica* can be used to deny not just linguistic claims, but propositions that have not been previously expressed, nor presupposed or implicated. Third, *mica* in declarative clauses scopes high, at least high enough to necessarily outscope epistemic modals.⁹ In the next section, we will characterize the felicity conditions of *mica* in polar questions and introduce the phenomenon of bias reversal.

⁸ An alternative explanation for why *mica* is ruled out in the antecedent of conditionals follows from the restrictor analysis of conditionals (Lewis 1975, Kratzer 1986, Heim 1982). Under this view, if-clauses restrict the domain of a (possibly covert) modal, thus effectively trapping *mica* under the scope of a modal; a configuration which, as we already observed, leads to ungrammaticality.

⁹ This applies to the use of *mica* in root clauses. We mostly set aside data where *mica* is embedded under, for example, attitude verbs.

3 Mica in Polar Questions and bias reversal

3.1 Biases in English polar questions

A polar question (PQ; sometimes called a ‘Yes/No’ question) is standardly treated as a question that asks whether a given proposition is true or not (Hamblin 1973, Karttunen 1977, Groenendijk & Stokhof 1984, Roberts 1996, 2012 a.m.o.). Despite this simple idea, PQs have proven to be quite complicated in their pragmatic details (Borkin 1971, Bolinger 1978, Ladusaw 1979, Ladd 1981 a.m.o.). The examples below illustrate five distinct ways of raising a polar ‘issue’ in English.¹⁰ These alternatives vary on the basis of the presence/absence and position of negation (High vs. Low negation) as well as extra emphatic marking; the ‘V’ in ‘V-PPQ’ stands for what has been termed ‘verum’ marking or ‘verum focus’ (Höhle 1992, Romero & Han 2004, Gutzmann & Miró 2011 a.o.) rendered by intonational marking on the main verb or an epistemic adverb like *really*.¹¹ Although they raise the same issue (i.e., whether or not the addressee is married), the PQs below each have different felicity conditions and cannot be used interchangeably by native speakers.

- (19)
- | | | |
|----|--|-------------------------------|
| a. | Are you married? | Positive Polar Question (PPQ) |
| b. | Are you MARRIED?/Are you <i>really</i> married? | (V-PPQ) |
| c. | Aren’t you married? | (HiNPQ) |
| d. | Are you <i>not</i> married? Have those dating sites <i>not</i> been working for you? Try ours! | (LowNPQ) |
| e. | Are you NOT married?/Are you <i>really not</i> married? | (V-LowNPQ) |

As discussed extensively in the literature on PQs (see, e.g., Ladd 1981, Büring & Gunlogson 2000, Romero & Han 2004, van Rooy & Safarova 2003, Ander-Bois 2011, Sudo 2013, Goodhue 2018b) marked forms of PQs can be used to request confirmation for (‘double-check’) both the speaker’s prior bias, and what we will call evidential bias — that is, a proposition implied by contextual evidence. In the remaining of this section, we will briefly review the felicity conditions of PPQs and HiNPQs (we return to LowNPQs in Section 4.1).

PPQs without polarity focus are seemingly ‘neutral’ with respect to the context, as they can be felicitously used in interview scenarios, where the

¹⁰ See Gunlogson 2001, Malamud & Stephenson 2015, Farkas & Roelofsen 2017 for work that considers an even wider range of polar-like moves.

¹¹ Following Romero & Han (2004), we assume that this use of *really* is distinct from the intensifier, as well as the readings *really* obtains when embedded.

speaker can have no prior expectations regarding the resolution and the contextual evidence may as well be absent:

(20) Do you have a college degree?

However, as [Büring & Gunlogson \(2000\)](#) first pointed out, although unbiased in a certain sense, English PPQs are not fully neutral with respect to contextual evidence, and they are subject to the relatively weak evidence condition given in (21):

(21) **Evidence condition on PPQs:** A PPQ of the form “*p*?” is felicitous only if there is no compelling evidence against *p*, i.e., either there is no evidence or there is evidence for *p*.

The two scenarios below from [Büring & Gunlogson \(2000\)](#) illustrate this point.

(22) **Neutral scenario (no prior bias, neutral evidence):** S and A are talking long-distance on the phone.

S: What’s the weather like out there? Is it raining?/Is it sunny?

(23) **Non-neutral scenario (no prior bias, non-neutral evidence)** A enters S’s windowless computer room wearing a dripping wet raincoat. (Contextual evidence for it is raining/it is not sunny).

S: What’s the weather like out there? Is it raining?/#Is it sunny?

Thus, PPQs are sensitive to the available evidence in the context. However, they do not seem to require a prior bias on the part of the speaker.

Let’s now turn to PPQs with VERUM focus or epistemic *really* (V-PPQs) and negative PQs with preposed (high) negation (HiNPQs). Unlike regular PPQs, these PQs are not felicitous in neutral scenarios, where both the speaker and the context lack prior expectations or evidence w.r.t. the resolution of the question:

(24) **Neutral scenario (no prior bias, neutral evidence):** S and H are talking about Alex’s party for the first time.

S: Are you going to Alex’s party?

S: #Are you really going to Alex’s party?/Are you GOING to Alex’s party?

S: #Aren’t you going to Alex’s party?

Instead, V-PPQs and HiNPQs are felicitous in contradiction scenarios, i.e., scenarios in which contextual evidence seemingly contradicts the speaker's prior expectation. More specifically, V-PPQs are felicitous in cases where the speaker had a prior expectation for the **negative** answer to the question (negative prior bias) and the contextual evidence seemingly contradicts that expectation. HiNPQs, on the other hand, are felicitous in cases where the speaker had a prior expectation for the **positive** answer to the question (positive prior bias) and the contextual evidence seemingly contradicts that expectation. The contrast is brought up by the two contexts below, which manipulate the polarity of the expectation/evidence.

- (25) **Contradiction scenario v. 1 (S expected $\neg p$, evidence for p):** Alex is throwing a party and invited us both. You and Alex hate each other and I expect you would not attend the party. While we are on the phone, you say: "I am looking forward to seeing you at the party". I ask you:
- S: Are you really going to Alex's party?/Are you GOING to Alex's party?
- S: #Aren't you going to Alex's party?
- (26) **Contradiction scenario v. 2 (S expected p , evidence for $\neg p$):** Alex is throwing a party and invited us both. You and Alex are good friends and I expect you would attend the party. While we are on the phone, you inform me that you'll be out of town on the date of the party. I ask you:
- S: #Are you really going to Alex's party?/# Are you GOING to A.'s party?
- S: Aren't you going to Alex's party?

Outside of contradiction scenarios, HiNPQs can also be used in the absence of contextual evidence in order to make a suggestion, as first pointed out by Ladd (1981) with the famous example in (27). In this example, Kat does have some prior expectation that this restaurant exists, but in absence of contextual evidence, she is posing the question to double-check that her expectation is correct.

Type of polar question	speaker’s prior bias	contextual evidence (H’s implied bias)
PPQ: <i>Are you married?</i>	can be absent	p or absent
V-PPQ: <i>Are you MARRIED?</i> <i>Are you really married?</i>	$\neg p$	p
HiNPQ: <i>Aren’t you married?</i>	p	$\neg p$ or absent

Table 1 Summary of English polar question and bias types

(27) **Ladd’s (1981) suggestion scenario (S expected p , neutral evidence)**

Kathleen and Jeff just come from Chicago on the Greyhound bus to visit Bob in Ithaca.

Bob: You guys must be starving. You want to get something to eat?

Kat: Yeah, *isn’t there a vegetarian restaurant around here?* Moosewood, or something like that?

The key types of biased polar questions are summarized in Table 1.¹²

With this picture in hand, we can turn to positive and negative PQs in Italian and ask a similar question: what expectations involving the speaker and the hearer can be conveyed by different types of PQs?

3.2 Biases in Italian Polar Questions

Italian PQs differ from English in at least two respects: there is no marking beyond intonation for PQs (which we signal with punctuation), and there is only one possible surface position for regular negation.¹³ However, we will

¹² This table is not intended as exhaustive: we have not dealt with either LowNPQs, or with other biasing mechanisms such as tag questions or minimizers. Moreover, as it will emerge, simply describing the polarity (positive vs. negative) of the biases does not give a complete characterization of the felicity conditions of biased questions, even from a descriptive point of view. The felicitous use of PQs may be further restricted by constraints regarding the type of available evidence (direct/indirect), which we are not addressing here.

¹³ The exact intonation that marks questions in Italian is complicated and dialect/region-specific; see D’Imperio 2002, Grice et al. 2005 for an overview. Very roughly, in Northern dialects it is a final rise, and in Southern dialects, it is a rise leading to the nuclear pitch accent. In the Southern Italian variety that this paper focuses on, given our preliminary fieldwork, *mica* receives the nuclear accent in most circumstances, so there may be a regular interaction in this variety between the position of *mica* and the question contour. We will not investigate the intonational properties of *mica* here, leaving it for future work.

show that there are substantial similarities. Just as in English, Italian PPQs are acceptable in interview-type scenarios, whereas NPQs and V-PPQs are not.¹⁴

- (28) Interview context (out of the blue)
- a. (#Veramente) È laureato? (PPQ/# V-PPQ)
 (#Really) be.3sg graduate?
 ‘Do you (#really) have a college degree?’
- b. #Non è laureato? (NPQ)
 NEG be.3sg graduate?
 ‘Don’t you have a college degree?’

Also parallel to the English facts, Italian PPQs are subject to Büring and Gunlogson’s evidence condition, whereas NPQs and V-PPQs are felicitous in contradiction scenarios. In particular, NPQs are felicitous in scenarios where the speaker had a prior bias for the positive answer to the question and contextual evidence seemingly contradicts that bias, the opposite holds for V-PPQs.

The two scenarios below, introduced in [Frana & Rawlins 2016](#) illustrate the contrast between Italian PPQs and NPQs. In *Good Manners v. 1*, the PPQ is infelicitous, because the context violates the evidence condition (by asking for food, Miles provides evidence against the proposition that he has eaten already), whereas the NPQ is felicitous because the scenario meets the contextual requirements: (prior) positive bias (Clara expected Miles to have eaten already) and negative contextual evidence (Miles’ behavior provides evidence against Clara’s pre-existing expectation). In *Good Manners v. 2*, the opposite holds. Here, the PPQ is felicitous because the context satisfies the evidence condition (M.’s behavior provides evidence for the proposition that he has eaten already), whereas the NPQ is marked because the context makes it clear that the speaker did not have a (prior) positive bias (C. invited M. for dinner, thus she expected him to *not* have eaten already).

- (29) **Contradiction: Good Manners v. 1 (S expected p , evidence for $\neg p$)**
 Clara invites Miles for drinks and tells him to come after dinner. When he gets there, Miles asks if she has any food. Clara asks:
- a. #Hai già mangiato? (PPQ)
 have.2sg already eaten?
 ‘Did you eat already?’

¹⁴ In Italian, the third person is used to address interlocutors in formal situations.

Italian polar questions and 'mica'

b. Non hai già mangiato? (NPQ)
NEG have.2sg already eaten?
'Didn't you eat already?'

- (30) **Contradiction: Good Manners v. 2 (S expected $\neg p$, evidence for p)**
Clara invites Miles for dinner and makes clear that she will prepare her best dishes. At dinner Miles barely touches any food. Clara asks:
- a. Hai già mangiato? (PPQ)
b. #Non hai già mangiato? (NPQ)

Furthermore, Italian NPQs can also be used in Ladd's suggestion scenarios.

- (31) **Suggestion context variant: (S expected p , neutral contextual evidence)**
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
Yes, sure. NEG there.was a pizzeria good in this
parti? Da Michele, o un nome del genere?
vicinity? By Michele or a name of.the kind
'Yes, sure. Wasn't there a good pizzeria around here? Michele's
or something like that?'

So far, despite syntactic differences, the Italian PQ system appears to parallel the parts of the English PQ system under consideration. In the next section, we will return to *mica* and introduce the phenomenon of bias reversal, something quite different to anything seen in English.

3.3 Mica in Polar Questions induces Bias Reversal

As anticipated, *mica* can also occur in PQs; though it cannot appear in constituent questions (Cinque 1976). In PQs, *mica* has the same syntactic distribution as in declaratives, as shown in (32) for the discontinuous use:

- (32) Non * può _ essere _ stato _ vinto _ da quella schiappa *?
NEG * can _ be _ been _ won _ by that fool *
'He cannot have been beaten by that fool, can he?'
(after Cinque 1976: ex. 6)

Frana & Rawlins (2016) demonstrate that Italian NPQs are felicitous in scenarios where the speaker holds a prior positive bias, i.e., a prior bias for the positive answer to the question (with conflicting contextual evidence, as in contradiction scenarios, or neutral evidence, as in suggestion scenarios). However, when *mica* is added to an NPQ, it does not simply reinforce that positive bias (which we might expect from the assertion case), but reverses it — a *mica*-PQ is compatible with a negative prior bias, i.e., it is felicitous in contexts where the speaker holds a prior expectation for the negative answer to the question (and the context provides counter-evidence). Thus, unlike in assertions, regular negation and *mica*-negation in PQs are in complementary distribution. The *mica* examples in our ‘good manners’ scenarios illustrate this bias reversal effect. As before, the alternative word order (discontinuous *mica*) has equivalent acceptability conditions.¹⁵

(33) **Context: good manners v. 1 (S expected p , evidence for $\neg p$)**

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:

S: Non hai già mangiato? (‘Didn’t you eat already?’) (NPQ)

S: #Mica hai già mangiato? (Mica-PQ autonomous)
MICA have.2sg already eaten?

S: #Non hai mica già mangiato? (Mica-PQ discontinuous)
NEG have.2sg MICA already eaten?¹⁶

(34) **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:

S: #Non hai già mangiato? (NPQ)

S: Mica hai già mangiato? (Mica-PQ autonomous)

S: Non hai mica già mangiato? (Mica-PQ discontinuous)

¹⁵ From now on, we will stop bringing up this alternative word order, which has equivalent meaning as the autonomous *mica* order in the variety we focus on.

¹⁶ English has no general translational equivalent of *mica*, and we therefore will not always provide a full translation. Paraphrases that come quite close for this particular example would be: *oh no, you didn’t eat, did you?* and *you were not supposed to eat...did you?*, but these do not generalize.

In these scenarios Mica-PQs pattern with PPQs: they are both compatible with the speaker expectation of the negative resolution, and evidence for the positive resolution. However, Mica-PQs are not just compatible with this bias, but require it. Thus, in contrast to PPQs, they are inappropriate in neutral interview contexts. This completes the paradigm introduced earlier in (28):

- (35) Interview context (out of the blue) (Mica-PQ)
 S: #Mica è laureato?
 MICA be.3sg graduate?

Mica-PQs are also distinct from V-PPQs, in both English and Italian. Just like V-PPQs, Mica-PQs mandatorily convey the speaker’s prior negative bias and are infelicitous in interview-type contexts. However, these two PQs do not have the same felicity conditions. The Italian V-PPQ *Veramente hai già mangiato?* (just like its English counterpart *Did you really eat already?*) is infelicitous in Good Manners v. 2, despite the fact that the scenario satisfies both biases (see Table 1) — we will return to an explanation of this contrast in §6. Moreover, while V-PPQs are limited to contradiction scenarios, a Mica-PQ — just like an NPQ — can be used in absence of counter-evidence. For instance, nothing in the context described in (36) counts as evidence in favor of the positive proposition (“that you told your mother that you were coming over”), yet *mica* is felicitous.

- (36) Paranoid Scenario (**S expected $\neg p$, neutral evidence**): Your mother doesn’t want you to hang out with me. We still want to hang out, but to avoid trouble I asked you to not tell her when you come over. As I open the door to you, I get a bit paranoid and I ask you:
 S: **Mica** hai detto a tua madre che venivi qui?
 MICA have.2sg said to your mother that come.2sg here
 ‘You didn’t tell your mother that you were coming over, right?’

Another typical use of Mica-PQs in the absence of contextual evidence is found in polite requests, where intuitively the speaker signals their prior bias for a negative answer in order to take some weight off the hearer’s shoulders, by freeing them from fulfilling the request (Cinque 1976, Manzotti & Rigamonti 1991: p. 284). In these cases, *mica* can be paraphrased with Italian *per caso* or its English equivalent *by any chance*.

Type of polar question	speaker's prior bias	contextual evidence (H's implied bias)
NPQ: Non hai mangiato?	p	$\neg p$ (or absent)
Mica-PQ: <i>Mica</i> hai mangiato? Non hai <i>mica</i> mangiato?	$\neg p$	p (or absent)

Table 2 Bias Reversal with *mica* in contradiction scenarios:

- (37) **Mica** sai la password del computer di Mary?
MICA know.3sg the password of.the computer of Mary?
'By any chance, do you know Mary's computer password?'

From these examples we conclude that *mica* PQs can be used in scenarios with neutral contextual evidence, as long as the context satisfies the other contextual parameter, namely that the speaker had a prior expectation for the negative answer to the question (or pretends to have it, as in the case of polite requests). Table 2 summarizes the phenomenon of bias reversal.

One last data clarification point before leaving our data section on PQs: while many of the *mica* examples so far have expressed the speaker's disappointment (or some kind of bouletic modality), and this is a common function, this is not necessary. For example, it is absent from the incredulous reply in (38).

- (38) Context: Lottery (**S expects $\neg p$, evidence for p**)
Mario returns home holding a lottery ticket in one hand and a bottle of champagne in the other. S utters:
S: Mica hai vinto la lotteria???
MICA have.2sg won the lottery?
'Did you win the lottery???' (incredulous)

Similarly, while one common use is to express surprise, this is again not necessary, as shown by polite requests such as (37) above.

3.4 Summary: *Mica* in declaratives vs. *mica* in PQs

To conclude the description, we want an analysis of Italian PQs and *mica* that derives:

- i. The **distributional facts**: *mica* in assertions is felicitous in a subset of the cases where *non* is. Mica-PQs and NPQs are in complementary distribution.
- ii. The **scopal facts**: a modal cannot outscope *mica* at Logical Form and *mica* does not embed in the antecedent of conditionals.
- iii. The **felicity conditions**: assertions of the form *(non) mica* α . are felicitous in contexts in which the proposition expressed by α is assumed by some participants of the context. Question of the form *(non) mica* α ? are felicitous when the speaker had a prior (to the exchange) bias for the negative answer to the question.
- iv. The **phenomenon of bias reversal**: With respect to the speaker's prior bias, Mica-PQs and NPQs have opposite polarity.

In order to address these points we need to first understand how biases work in PQs. This will be the topic of the next several sections, starting with English.

4 The scope of negation and Negative Polar Questions

We will review evidence in §4.1 that English NPQs with high/preposed negation (HiNPQs) and NPQs with low/non-preposed negation (LowNPQs) have slightly different felicity conditions (Büring & Gunlogson 2000, Romero & Han 2004, a.o.). Given that Italian, as we have discussed, has only one surface position for *non*, this raises the question of whether Italian should receive a different analysis of NPQs than English. To address this, we introduce the data on *inner* vs. *outer* negation readings, first discussed in Ladd 1981, and then examine comparable data in Italian. The main finding of this section is that Italian NPQs also have inner and outer negation readings.

4.1 LowNPQs vs. HiNPQs

The now-classic puzzle of positive vs. negative questions is that on standard accounts, the positive and negative forms of the questions are denotationally

identical. For example, on Hamblin's (1973) proposal, the semantic content of a question is described as the set of propositions corresponding to possible (complete) answers, which for PQs are constructed from a proposition by simply taking the positive and negative version of that proposition:

- (39) a. $\llbracket \text{whether } p \rrbracket = \{p, \neg p\}$
 b. $\llbracket \text{whether } \neg p \rrbracket = \{\neg p, \neg \neg p\} = \{p, \neg p\}$
 c. Therefore, $\llbracket \text{whether } p \rrbracket = \llbracket \text{whether } \neg p \rrbracket$

Setting aside V-PPQs, where the difference in felicity conditions may follow from the presence of (VERUM) focus and/or (possibly covert) epistemic particles such as *really*, the truly puzzling contrast is the difference in felicity conditions between PPQs and NPQs, with only the latter leading to mandatorily biased interpretations.

However, a closer look at the data reveals that the standard semantic analysis of PQs may salvageable (from this puzzle at least), and that the observed difference in felicity conditions between PPQs and NPQs may rely on a special type of negation. We initially observed that, in English, NPQs can be realized with 'preposed'/high negation and non-preposed/low negation:

- (40) a. Doesn't this bus stop at the mall? (HiNPQ)
 b. Does this bus not stop at the mall? (LowNPQ)

So far, we have ignored this distinction in the position of negation and focused only on HiNPQs. However, the position of negation in English PQs correlates with certain interpretive differences, including the 'strength' of the speaker's prior bias. As shown by Romero & Han (2004), HiNPQs obligatorily convey the prior positive bias, whereas LowNPQs do not necessarily convey such bias. Hence, the latter, but not the former, are felicitous in contexts where the speaker had no prior expectation regarding the answer to the PQ. The contrast is illustrated by the example below from Romero & Han (2004). In the scenario the speaker has no prior bias for either answer to the PQ, and only the LowNPQ is felicitous.¹⁷

¹⁷ Note that focusing negation or adding an overt *really* will change these judgments. This is because we would turn a LowNPQ into a V-LowNPQ, which has a different semantics/pragmatic and consequently different felicity conditions.

Type of polar question	speaker's prior bias	contextual evidence (H's implied bias)
PPQ: <i>Are you married?</i>	can be absent	p (or absent)
V-PPQ: <i>Are you MARRIED?</i> <i>Are you really married?</i>	$\neg p$	p
HiNPQ: <i>Aren't you hungry?</i>	p	$\neg p$ (absent in suggestions)
LowNPQ: <i>Is she not coming either?</i>	can be absent	$\neg p$ (or absent)

Table 3 Summary of English polar question and bias types

(41) **Unbiased context: Rosa Montero**

S interviews A on TV about Rosa Montero.

A: Mrs. Rosa Montero's writing career is closely related to the political episodes that Spain has lived through since 1936. There were times when she simultaneously worked on prose and poetry, but there were other times full of journalistic prose and completely devoid of poetry.

S: Please tell us more about those poetic gaps, and about what exactly caused them. For example,

S': Did she not write poetry in the 70s? And, if she didn't, why not?

S'': #Didn't she write (some/any) poetry in the 70s? And, if she didn't, why not?

This data leads to the updated picture of English PQs in Table 3. PPQs and LowNPQs do not differ with respect to the first parameter (speaker's prior bias), and both of them are subject to an evidence condition matching the respective polarity (Büring & Gunlogson 2000). The cases that stand out are V-PPQs and HiNPQs. One could easily take it that polarity focus, or the presence of epistemic particles such as *really*, would have an impact on the compositional semantics of the PQ, but what is special about preposed negation? Outside of questions, the syntactic position of negation (high vs. low) has been shown to have several consequences at the semantics/pragmatics of the sentences in which it occurs (Ladusaw 1979, Szabolcsi 2004, Schwarz & Bhatt 2006, Romero 2014), most famously licensing of polarity items. Polarity items have been described as having a disambiguating effect that correlates

with the scope of negation, between what have been termed *inner* and *outer* readings; this will be the topic of the next section.

4.2 Inner vs. Outer negation readings

As already noted, NPQs sound very natural in contradiction scenarios. These are cases in which the speaker had a previous expectation for the answer to the question (e.g., bias for p) and the context, or the addressee, is providing partial evidence against it. When faced with this type of 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; see Ladd 1981, Büring & Gunlogson 2000, Romero & Han 2004). The example below brings out the two readings intuitively. In both cases, the polarity of the prior bias is positive. It is just the proposition that gets ‘double-checked’ which changes: a prior bias for p vs. a (new) implied inference that $\neg p$ (where p = the bus stops at the Hampshire Mall).

(42) **Context: Hampshire Mall (S expected p , evidence for $\neg p$)**

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 the stop. S asks the driver:

- a. (What’re you doing?) Doesn’t this bus stop at the Hampshire Mall?
 \rightsquigarrow 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 NPQ)
- b. (Oh no!) Does this bus not stop at the Hampshire Mall?
 \rightsquigarrow 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 NPQ)

Our example employs a HiNPQ for the outer reading and a LowNPQ for the inner reading. The HiNPQ from Ladd’s suggestion scenario (27) is also an OuterNPQ because it expresses the speaker’s request for confirmation of her prior positive expectation that there is a vegetarian restaurant. One may legitimately wonder whether inner and outer negation readings correlate strictly to the (surface) placement of negation (HiNPQs/outer vs. LowNPQs/inner).

The answer to this question, at least for the English data, is not so straightforward due to cross-speaker variation. Ladd reports that English HiNPQs can have both outer and inner readings (though this judgment of ambiguity doesn't hold across all English speakers, and some accept only the outer reading with high negation).¹⁸ The example below is Ladd's own variant to (27):

(43) **Ladd's 1981 scenario v. 2 (S expected p , evidence for $\neg p$)**

Bob is visiting Kathleen and Jeff in Chicago while attending CLS.

Bob: I'd like to take you guys out for dinner while I'm here - we'd have time to go somewhere around here before the evening session tonight, don't you think?

Kat: I guess, but there's not really a place to go in Hyde Park.

Bob: Oh really, *isn't there a vegetarian restaurant around here?*

Kat: No, about all we can get is hamburgers and souvlaki.

This example, according to Ladd, is an example of inner negation reading: Bob assumed the truth of the proposition *that there is a vegetarian restaurant around here* (p), but he had to infer from Kathleen's response (contextual evidence) that this proposition might actually be false, and is using the HiNPQ to double check on the newly implied inference that $\neg p$ (inner negation reading) due to epistemic conflict.

Ladd then argues that, at least for English, the difference between inner and outer readings is a genuine syntactic/semantic ambiguity, involving a difference in the scope of negation and an operator whose nature remains to be determined. In the case of outer negation readings, Ladd takes a sentential negation to be outside the scope of the operator, which intervenes for licensing purposes — thus the proposition being double-checked has positive polarity. On the other hand, in the case of inner negation readings, sentential negation is below the operator, and the proposition being double-checked

¹⁸ Based on consultation with many native speakers, there is substantial variation across speakers in whether inner readings are available (by all diagnostics) with preposed negation. The situation is summarized below.

- (i) a. **Group 1:** HiNPQ: only outer readings
LowNPQ: only inner readings
- b. **Group 2** (includes Ladd 1981, and the dialect analyzed by Romero and Han):
HiNPQ: ambiguous between inner and outer readings
LowNPQ: only inner readings

has negative polarity. Ladd uses data from polarity items as a probe into a scope-based analysis; see [Romero & Han 2004](#) for much further discussion of this diagnostic. In particular, these authors show that a PPI disambiguates an NPQ in favor of the outer reading and that an NPI (choosing NPIs that do not already have questions as a licensing environment) disambiguates an NPQ in favor of the inner reading (the % here indicates cross-speaker variation corresponding to the dialects described in fn. 18):¹⁹

(44) **A PPI disambiguates in favor of the outer reading**

- a. (after [Ladd 1981](#): exx. 7–9, [Han & Romero 2004](#): ex. 6)
 A: Ok, now that Stephen has come, we are all here. Let's go.
 S: **Isn't**_{Outer} Jane coming **too**_{PPI}?
 (~> double-check prior expectation that Jane comes)
 S': *Is Jane **not**_{Inner} [coming **too**_{PPI}]?
 S'': #Is Jane [**not**_{Inner} coming] **too**_{PPI}? (blocked in this context)
- b. (After [Romero & Han 2004](#): ex. 34)
 A: Michael has not been happy with Sue since yesterday's meeting, and she's been ignoring the issue.
 S: **Shouldn't**_{Outer} she have talked to him **already**_{PPI}?
 S': *Should she **not**_{Inner} [have talked to him **already**_{PPI}]?

(45) **An NPI disambiguates in favor of the inner reading**

- a. 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**_{Inner} coming **either**_{NPI}?
 (~> double-check implied inference that Jane isn't coming)
 S': %**Isn't**_{Inner} Jane coming **either**_{NPI}?
- b. A: Michael has not been happy with Sue since yesterday's meeting, despite her attempt to apologize just now.

¹⁹ The additive particle *too* has classically been thought to be anti-licensed in negative contexts since [Klima 1964](#), including in the polar questions literature, and for this reason we present it in the main text. However, [Rullmann \(2003\)](#) has argued that its distribution can be explained by a combination of its presupposition, a preference for low attachment, and competition with *either*, which Rullmann argues should be treated as an NPI. We have also provided examples with the uncontroversial PPI clause-final *already* as well; see [Han & Romero 2004](#) for further examples and [Szabolcsi 2004](#), [Giannakidou 2011](#) a.m.o for further discussion of PPI licensing. However, it is worth noting that on Rullmann's analysis, we might still expect the distribution of *too* to be diagnostic of the scope of negation, as originally assumed by Ladd. We leave it open as to whether some version of Rullmann's proposal might translate to the Italian PPI *anche* that we use below.

- S: %Shouldn’t_{Outer} she have talked to him yet_{NPI}?
 S’: Should she not_{Inner} [have talked to him yet_{NPI}]?

Returning now to Italian, we have already seen that Italian NPQs, just like English NPQs, are only felicitous in contexts compatible with the speaker having a prior positive bias. We now show that Italian, despite surface appearances, has Ladd’s inner vs. outer distinction. (See Höhle 1992, Büring & Gunlogson 2000, Han & Romero 2004 for arguments that a range of further languages including German, Spanish, Korean, and Bulgarian have a similar distinction.)

In Italian, we can construct a similar diagnostic using certain polarity items and their positive counterparts. We will employ the polarity items *anche* (‘too/also’) and *neanche* (‘neither’) to distinguish between the two readings.²⁰ 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 (46), S is double-checking the positive proposition *p* “that A is (also) going” (outer negation reading). The motivation behind the double-checking move is an apparent epistemic conflict: contextual evidence contradicts S’s prior expectation for *p*.

- (46) Drinks Context 1: Agents S, A, and B 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:

- S: (Che fai?) Non_{Outer} vieni **anche**_{PPI} tu con noi?
 (What do.2sg?) NEG come.2sg too you with us?
 ‘(What are you doing?) Aren’t you coming too?’

NPQs also license NPIs; 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 (47) below, S is double-checking the implied proposition $\neg p$, i.e., “that A is not going”; as before the motivation behind the

²⁰ We follow Giannakidou (2000) and Chierchia (2006, 2013) in describing negative items in Italian as polarity items; see Franco et al. 2016 for discussion of *anche* as a PPI. The core contrast in declarative sentences when these items are in a post-verbal position is illustrated in (i-ii):

- | | | | |
|-----|---|------|---|
| (i) | (*Non) Vengo anche _{PPI} io
(*NEG) come.1sg too I
‘I am (*not) coming too.’ | (ii) | *(Non) vengo neanche _{NPI} io
*(NEG) come.1sg neither I
‘I am *(not) coming either’ |
|-----|---|------|---|

tial bias. We then develop an account of *mica* in this framework. We argue for a treatment of *mica* as a CG-management operator, FALSUM, but one that differs from the NPQ uses of that operator in terms of its perspectival anchoring. While VERUM and FALSUM mirror evidential operators in that they show *interrogative flip*, or what Garrett (2001) termed 'origo shift', *mica* remains stably anchored to the speaker. The analysis has the further advantage of providing a unified account of *mica* in PQs and declaratives, as well accounting for the scopal facts from section 2.3 and the polarity licensing facts from section 4.2.

5.1 Common Ground Management

Stalnaker (1978) famously proposed that in modeling assertions in a context, we need to think of that context as a *common ground* (CG): a set of propositions that discourse participants have publicly and mutually agreed to. This can be simplified to a context set, the intersection of propositions in the CG, which represents the shared information state of agents in a discourse. An assertion, on this view, proposes to add new information to the CG, which results (if everything goes well) in a monotonic shrinking of the context set over the course of discourse.

- (50) Let a common ground CG_w for some context be the set of propositions that discourse participants for that context have publicly accepted (abstracting away from time) in a world w .

The conversational move of assertion is the instruction or request to add the asserted proposition p to the CG (see, e.g., Roberts 1996, 2012) and it is governed by the maxim of Quality. One could accept a move, in which case the proposition asserted is added to the CG.

- (51) Maxim of Quality: Try to make your contribution one that is true, specifically, (i) do not say what you believe to be false and (ii) do not say that for which you lack adequate evidence.

Following Farkas & Bruce (2010) we assume that a default assertion (i) commits its author to the propositional content of the asserted sentence, (ii) raises an issue (the denotation of the sentence radical) and (iii) directs the conversation towards a unique resolution of that issue, namely confirmation of the assertion. Thus, an assertion yields an output context that is categor-

ically biased in favor of confirmation of the asserted proposition. Default (= unbiased) Polar Questions, on the other hand, raise an issue and indicate two possible ways of updating the CG, corresponding to the two answers: “The context state after a default polar question is *inquisitive* with respect to the denotation of the sentence radical the move has placed on the Table because the *ps* [projected set] contains both future common grounds to which *p* was added and future common grounds to which $\neg p$ was added” (Farkas & Bruce 2010: p. 95).

While Stalnaker was primarily concerned with the role and result of conversational moves such as assertion, a substantial body of recent work suggests that natural languages contain rich sets of morphology for indicating *meta-conversational information* of various kinds (see, e.g., Krifka 2008, Farkas & Bruce 2010, Zimmermann 2011, Ginzburg 2012, Repp 2013, a.o.). Here we build most directly on Repp (2013), who refers to such items as *common ground management operators*.

An example of a meta-conversational move would be to challenge an interlocutor’s assertion instead of accepting it. This sort of move is typically marked; for example, in English this could be done using a V-PPQ, as shown below.

- (52) S: I am going to Alex’s party.
A: Are you really going? (I thought you hated Alex.)

In Repp’s terms, therefore, it is plausible to take *really* to be a CG-management operator. CG-management operators indicate the status of a proposition relative to the CG and may play at least one of the following functions: (i) they indicate whether the proposition is part of the CG, or whether it is new; (ii) they indicate the interlocutor’s current stance towards the proposition: whether the proposition is, e.g., unexpected or obvious; and (iii) they indicate how the CG should develop: whether and with what degree of commitment on the side of the speaker, the proposition should become part of the CG or be removed from it (Repp 2013: p. 231). We adopt from Repp the following LF schema for the left periphery:

- (53) LF schema: [illocutionary-op [(CG-management-op) [proposition]]]

5.2 VERUM and FALSUM

On this view, Romero & Han’s VERUM operator is a special case of a CG-management operator, spelled out in English by epistemic *really*, (or, ar-

guably, focal stress on polarity elements, i.e., comparable to Höhle’s (1992) Verum focus; but see Gutzmann & Miró 2011, Goodhue 2018a). This operator has the semantics of an epistemic modal, though it intuitively operates at a ‘meta-level’ with respect to discourse. The following is Romero & Han’s entry for VERUM (their ex. 43). In what follows, x is a free variable whose value is contextually identified with the speaker in declaratives and the addressee in questions; $\text{Epi}_x(w)$ 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).

- (54) $[\text{VERUM}_i]^{g[x/i]} = [\text{really}_i]^{g[x/i]} =$
 $\lambda p_{\langle s,t \rangle} . \lambda w . \forall w' \in \text{Epi}_x(w) : (\forall w'' \in \text{Conv}_x(w') : (p \in \text{CG}_{w''}))$
 Paraphrase: x is sure that, in all the worlds satisfying x ’s conversational goals, p is added to the CG.

VERUM on this view is a perspectival operator: it introduces entailments about the state of the CG from the perspective of one of the participants in the discourse. The perspective taken by the operator is bound by the speech-act operator. That is, in assertions VERUM is speaker-oriented, and in questions, it is hearer-oriented. This behavior closely resembles the phenomenon of ‘interrogative flip’ in many languages with evidential systems (see Bhadra 2017 for a recent overview). As an example of the role of VERUM in assertions, consider (55). This scenario begins with S putting forward the unmarked assertion of the proposition that Tom is tired. A responds by arguing with this claim (a meta-conversational move itself), so the claim doesn’t immediately become CG. S then responds with a meta-conversational reiteration: establishing over and above the initial claim their high degree of certainty in it, by indicating that they are certain that the proposition should be added to the CG. A then gives in and accepts the claim.

- (55) Context: the hike
 S: Tom is tired. ASSERT_S [Tom is tired]
 A: I am surprised, we have only walked for 10 minutes.
 S: He really is tired. ASSERT_S [VERUM_S [Tom is tired]]
(S is certain about adding [Tom is tired] to the CG)
 A: Ok, fine. (⇒ ‘Tom is tired’ is added to CG.)

Repp additionally proposes that illocutionary negation corresponds to the meta-conversational operator **FALSUM**, which is a **VERUM** with embedded negation:

- (56) $\llbracket \mathbf{FALSUM}_i \rrbracket^{g[x/i]} =$
 $\lambda p_{\langle s,t \rangle} . \lambda w . \forall w' \in \text{Epi}_x(w) : (\forall w'' \in \text{Conv}_x(w') : (p \notin \text{CG}_{w''}))$
 Paraphrase: x is sure that, in all the worlds satisfying x 's conversational goals, p is not added to the CG.

FALSUM is in the general family of illocutionary or metalinguistic negative operators (see also [Krifka 2017](#)). An example can be found in denials. Depending on the context and on intonation, a negative sentence can be read in two ways: (i) as an assertion of a negative proposition, as in (57) or (ii) as a denial of a positive proposition, as in (58) — a common characteristic of illocutionary negation is that it carries stress ([Horn 1985](#), [van Leusen 2004](#)).²¹

- (57) A: What do you think of Sam?
 S: Sam is not smart. (negative assertion)
- (58) Denial Context
 A: Sam seems smart.
 S: Sam is NOT smart. $[\text{ASSERT}_S [\text{FALSUM}_S [\text{Sam is smart}]]]$
(S is certain about not adding [Sam is smart] to the CG)

A major question at this stage is how, exactly, the CG-management content of a meta-conversational move relates to the prejacent. We will approach this by asking: what is *at issue* in a CG-managing move? There are two main answers. [Romero & Han \(2004\)](#) as well as [Repp \(2013\)](#) and [Frana & Rawlins \(2016\)](#) take the CG-management proposition itself to be at-issue. That is, S's response in (55) asserts that in all accessible worlds, the proposition that Tom is tired is added to the CG. The alternative possibility ([Romero 2014](#)) is that all that is at-issue in such a move is the prejacent of the CG-management operator; the CG-management content would then operate on another dimension, e.g., as a conventional implicature in the sense of [Potts \(2005\)](#) or as a presupposition ([Yuan 2015](#)). We briefly review two arguments for treating the CG-management content as not-at-issue, and then revise the current denotations of **VERUM** and **FALSUM**. The arguments point towards a

²¹ For reasons of space, we will not consider the (very real) possibility that stressed negation in English should instead be analyzed in terms of the theory of focus; see [Goodhue 2018a,b](#) for recent discussion.

multi-dimensional analysis of the differences between CG-managing operators and epistemic modal auxiliaries.

The first argument comes from a commonly used diagnostic for (non) at-issueness in the evidential literature, the challengeability test, according to which only the at-issue content of a speaker's utterance can be accepted or rejected by an addressee (Faller 2002, Papafragou 2006, Murray 2017; but see Korotkova 2016a for a different account). With an epistemic modal, a denial can target the modal claim (in addition to the prejacent in some contexts), whereas in the case of VERUM/*really*, just like in the evidential case, the denial must target the embedded claim, not the meta-conversational claim about certainty:

- (59) A: The keys *have to be* in the car. (Epistemic modal)
B: No, they don't have to be, they might be somewhere else.
- (60) A: Tom *really* is tired. (Epistemic conversational operator)
B: That can't be/You are wrong.
(= \neg [T. is tired] / \neq \neg [A is sure that ...])
- (61) A: Real Madrid *evidently* not as good without Ronaldo.
(Evidential adverb; ex. via google)
B: That's not true/You are wrong.
(= \neg [RM is not as good without R.] / \neq \neg [It is evident to A that ...])

The second argument comes from the interaction of such operators with question meanings and answerhood licensing. As noted by Gutzmann & Miró (2011) and Romero (2014), a negative answer to a question containing an epistemic modal can be taken as negating the modalized epistemic proposition (thus, expressing lack of certainty). In contrast, the corresponding negative answer to a question containing epistemic *really*, or VERUM focus, can only mean that the negative alternative is true, and cannot express a lack of (un)certainty. This is expected if CG-managing operators, such as VERUM, are not part of the at-issue content.

- (62) Epistemic modals
- a. A: Are you sure/certain of going?
B: Yes (I am sure I am going) / No (I am not sure that I am going)
- b. A: Could it rain later?
B: Yes, there's a 50% chance.

- (63) Epistemic conversational operator
 A: Are you really going?
 B: Yes (= I am sure I am going)
 B: No (I am not going; ≠ I am not sure I am going)
 B: #No, I am still unsure if I'm going.

Romero (2014) therefore revises the Romero & Han entry for VERUM to move the modal formula out of the at-issue content (and adopts FALSUM with a similar tweak), but is non-specific about what kind of not-at-issue content it is (just terming it ‘CG-Management-Content’). Gutzmann & Miró (2011) give a rather different account of the content of VERUM (they deal only with declaratives, not PQs), but also move this content out of the at-issue content into the ‘expressive’ dimension. While we think that the basic move to not-at-issue content is necessary, the evidence for choosing between *categories* of not-at-issue meaning is somewhat more equivocal. Once again the situation resembles that of evidential marking, where the so-called ‘family-of-sentences’ tests (see, e.g., Chierchia & McConnell-Ginet 1990, Tonhauser et al. 2013, a.o.) are challenging to apply, because VERUM and FALSUM can’t be embedded; embedded NPQs with *whether* seem to involve regular negation, e.g., do not indicate a speaker or attitude holder’s prior beliefs or evidence.²² Though Gutzmann & Miró (2011) take a stand in a particular direction, they also did not provide arguments for choosing expressive content over other options.

In what follows we will develop a new version of this proposal that treats CG-managing content as presuppositional, but we do not rule out the possibility of translating the analysis to other categories of not-at-issue meaning. The core intuition behind choosing a presuppositional account is that negation and *mica* in denials and PQs impose appropriateness conditions on input contexts, which lead to judgments of infelicity when these conditions fail. Since one of our primary desiderata is to capture these conditions, presuppositionality is a natural tool. To the extent that biased questions indicate *new* information (e.g., about the speaker’s bias), we will derive it as an implicature, via Romero & Han-style reasoning (to be developed in §5.3), but we suggest that the bias content that we encode lexically is not generally used to convey new information.

We will conclude this discussion by presenting an argument towards a presuppositional account of FALSUM in PQs, involving the interaction of HiN-

²² While *really* and similar adverbs can embed, they are typically assumed to be a different lexical item when embedded (see Romero & Han 2004 fn. 11).

PQs and conditionals. One case where NPQs *can* embed with a biased meaning is in the consequent of a conditional question. Following Isaacs & Rawlins (2008) we take it that the *if*-clause has to scope over a question operator, because it is providing a restriction to that operator, while FALSUM (on Repp’s syntax at least, see (53)) must syntactically scope in the consequent below the *if*-clause. The question is if the not-at-issue implication of FALSUM, which for purposes of discussion we will assume is the CG-management content in (56), is interpreted locally or globally. On a presuppositional story we expect local interpretation to be possible in the consequent of conditionals (based on well-known filtering data; see Karttunen 1973 et seq). On, e.g., a Pottsian conventional implicature analysis (Potts 2005), we would instead expect the implication to project globally. In (64) we see that the biased contribution of an NPQ in a conditional question gets conditionalized. That is, in B' in contrast to B , the speaker indicates a prior expectation that the party will be indoors if it rains. To make sense of this, the implication of FALSUM must be interpreted in the *local* context where the temporary assumption that it will rain is already in play, rather than escaping the conditional.

- (64) A: It might rain later; you should bring a rain jacket.
 B: Won’t the party be indoors?
 B’: If it rains, won’t the party be indoors? [If r], [Q [FALSUM p]]

5.3 VERUM and FALSUM in Italian polar questions

We give an account of the pragmatics of biased PQs that builds on Romero & Han (2004)’s framework, keeping their syntax as well as the core of their pragmatic reasoning — that the use of a meta-conversational operator triggers reasoning about the choice of a complex discourse move over a simpler competitor. We depart from Romero & Han (2004) in treating the contribution of CG-management operators as not at-issue (Gutzmann & Miró 2011, Romero 2014). More specifically, we propose an analysis in which the meta-conversational content is modeled as a presupposition. As a result, our analysis avoids complex theoretical tools like biased partitions, (as in Romero & Han 2004), and non-at-issue inquisitive content (as in Romero 2014).²³

²³ On Romero’s 2014 proposal the partitioning effect of questions happens on the CG-management tier as well: for a biased PPQ the CG-management content consists of a *biased partition* where the choice is between absolute certainty about adding p to the CG (VERUM_H p) and any other degree of certainty (\neg VERUM_H p). However, Romero (2014) does not give an account of what is involved in having *inquisitive* non-at-issue content beyond a brief dis-

5.3.1 The LFs of Polar Questions and an explanation of the polarity facts

We adopt Romero & Han (2004)'s LFs for PQs (with the innovation introduced by Romero (2014) of using FALSUM instead of \neg VERUM), together with their account of inner/outer readings in correlation with polarity items (Section 4.2) through an interplay of the CG-management operators VERUM/FALSUM and negation. In a nutshell, outer negation in NPQs does not introduce standard negation at LF. Instead, it corresponds to the negative operator FALSUM which, unlike logical negation, fails to license NPIs (or anti-license PPIs). Thus, it follows that NPIs are only licensed in Inner-NPQs, where regular negation takes scope over the prejacent proposition and is below the (optional) VERUM operator.

- (65) a. V-PPQ: Are you really coming?/Are you COMING? [Q [VERUM [p]]
 b. Outer-HiNPQ: Aren't you coming (too)? [Q [FALSUM [p]]
 c. Inner-HiNPQ: %Aren't you coming (either)? [Q [VERUM [\neg [p]]]
 d. Inner-LowNPQ: Are you not coming (either)? [Q [(VERUM) [\neg [p]]]

We propose to extend this analysis to Italian PQs. As already noted, despite having only one surface position for negation, Italian NPQs also have inner and outer negation readings. We take this as evidence for postulating two types of negation; the outer one corresponding to the operator FALSUM, the inner one for regular negation. Thus, by the same logic, it follows that the PPI *anche* is licensed in Outer-NPQs because FALSUM, unlike regular negation, is not a PPI anti-licensor. Conversely, the NPI *neanche* is licensed in Inner-NPQs where we find standard negation.

- (66) a. V-PPQ: Veramente vieni? / VIENI? [Q [VERUM [p]]
 b. Outer-NPQ: Non vieni **anche**_{PPI} tu? [Q [FALSUM [p]]
 c. Inner-NPQ: Non vieni **neanche**_{NPI} tu? [Q [(VERUM) [\neg [p]]]

5.3.2 Meta-conversational content as presuppositional

Our presuppositional entries for VERUM and FALSUM are presented in (67) and (68) respectively. The CG-management content of VERUM/FALSUM is rendered as a presupposition on the input context from the perspective of some individual in discourse. Adopting a term from the evidential literature, we

cussion in fn. 8, nor does the paper provide a revision of the pragmatics in Romero & Han 2004 that handles the new semantics.

will indicate the perspectival parameter of these operators with a contextual variable Origo_c . In root assertions, Origo_c is the speaker, and in root questions, Origo_c is shifted to the hearer. Following much of the literature on evidentials, we assume that the Origo parameter is effectively bound by the illocutionary operator in ForceP, without intending to presuppose that the ultimate analysis must literally involve binding.²⁴

- (67) $\llbracket \text{VERUM} \rrbracket^{c,w} = \lambda p_{\langle s,t \rangle} . p$
 Defined for p, c, w only if
 $\forall w' \in \text{Epi}_{\text{Origo}_c}(w) : (\forall w'' \in \text{Conv}_{\text{Origo}_c}(w') : (p \in \text{CG}_{w''}))$
 “ Origo_c is sure that, in all worlds satisfying their conv. goals, p is CG.”
- (68) $\llbracket \text{FALSUM} \rrbracket^{c,w} = \lambda p_{\langle s,t \rangle} . \neg p$
 Defined for p, c, w only if
 $\forall w' \in \text{Epi}_{\text{Origo}_c}(w) : (\forall w'' \in \text{Conv}_{\text{Origo}_c}(w') : (p \notin \text{CG}_{w''}))$
 “ Origo_c is sure that, in all worlds satisfying their conv. goals, p is not CG.”

As in [Romero & Han 2004](#), PQs with CG-management operators are meta-conversational moves, which are subject to a discourse-economy constraint:²⁵

- (69) *Principle of Economy* (after [Romero & Han 2004](#))
 Do not use a meta-conversational move unless necessary (to resolve a Quality dilemma).

A ‘quality dilemma’ (our term) is when some agent a in discourse is faced with one of these two possible situations:

- (70) *Quality Dilemmas*
- a. Epistemic Conflict: S has a pre-existing bias (for p or $\neg p$) and the context (e.g., the hearer) presents counter-evidence.
 - b. Lack of Evidence: S has a pre-existing bias for p , but not enough evidence to assert it, and the context does not support either p or $\neg p$.

²⁴ See [Bhadra 2017](#) for a recent interface analysis of perspectival anchoring and a review of the possible analyses.

²⁵ This principle doesn’t apply to non-meta-conversational moves, e.g., plain assertions and simple PPQs. This is not to say that there is no competition effect of any sort between such moves, but if there is, its effect would not be the same. For example, if a speaker asks a PPQ (‘Is p the case?’), one cannot draw the conclusion that they lack evidence for p : this empirically runs up against the evidence condition in (21).

The Principle of Economy is intended to explain why V-PPQs and HiNPQs are felicitous only in scenarios where the speaker held a prior expectation regarding the answer to their own question. In contradiction scenarios, where S believed p and H produced evidence against p , S is justified in questioning the appropriateness of adding p (or the newly implied $\neg p$) to the CG in order to resolve the apparent epistemic conflict. In suggestion scenarios such as (27), where S believed p , but doesn't have enough evidence to assert it, she can use the meta-question move to double-check this belief and potentially gather evidence, while indicating the belief. It follows that in scenarios where the speaker holds no prior expectation regarding the answer to her PQ, V-PPQs and HiNPQs are predicted to be infelicitous, because they involve the use of a meta-conversational move without a justified reason, in violation of the Principle of Economy. A corollary of this is that when the meta-conversational move is optional, as in some NPQs (e.g., LowNPQs in (41)), the Principle of Economy won't trigger and such questions are felicitous in neutral contexts.

Let us now turn to the derivation of the biases, starting with V-PPQs; recall that these PQs license the inference that the speaker had a prior expectation for the negative answer to the question, and they are felicitous only in contradiction scenarios, where the context (e.g., the hearer) provides counter-evidence. We take the polarity of the speaker's prior bias for a V-PPQs to be derived as shown below. Because this is a question, Origo_c is resolved to the hearer, which we notate h_c .

- (71) H: I am going to the party. ASSERT [p]
 S: Are you GOING? / Are you really going? / Veramente vieni?
- (72) $[[[Q [VERUM [p]]]]]^{c,w} = \{p, \neg p\}$ ('S asks H whether p or not p ')
 Defined if $\forall w' \in \text{Epi}_{h_c}(w) : (\forall w'' \in \text{Conv}_{h_c}(w') : (p \in \text{CG}_{w''}))$
 " h_c is sure that in all the worlds satisfying h_c 's conv. goals p is CG"

The presupposition is met in the input context, given that H has just asserted p . By quality, if one asserts p , it follows that they believe p to be true and that they have adequate evidence for p . Moreover, since the default outcome of an assertion is confirmation (Farkas & Bruce 2010), it is reasonable to assume that, through their assertion, H conveys the expectation that p will become CG. Note that since the presupposed content of VERUM in questions requires that H has indicated certainty for adding p to the CG, suggestion scenarios (where contextual evidence is neutral) are automatically ruled out. S's epis-

temic bias can be derived via a competition effect, following the Principle of Economy: S chose a complex (meta-conversational) question ([Q [VERUM [you go]]]) over a simpler competitor (same question without VERUM). She must have a reason to do so. Thus, by the Principle of Economy, S is facing a quality dilemma. Since lack of evidence is ruled out (as explained above), S must be facing epistemic conflict (contextual evidence contradicts their prior bias). Given that H gave evidence for p (h_c goes), then S must have had a **prior bias for $\neg p$** , and is requesting confirmation for (double-checking) the newly implied proposition that p because of epistemic conflict.²⁶

Furthermore, the analysis explains why a V-PPQ is infelicitous in scenarios like our Good Manners v. 2 (34): the presupposition introduced by VERUM in ‘[Q [VERUM [you ate already]]]’ would be satisfied in scenarios where H had indicated certainty about adding p (= H ate already) to the CG. Such a requirement is not met in our scenario, where the evidence provided by H (barely not touching food) is not strong enough to imply their certainty for wanting to add p to the CG. Summing up, the analysis derives the felicity conditions of V-PPQs of the form ‘[Q [VERUM [X]]]’, namely that they can be felicitously uttered in contradiction scenarios only, where contextual evidence — in the form of H’s commitment towards $[[X]]$ — contradicts the speaker’s pre-existing bias for the negative answer to the question.

Analogous reasoning can be applied to the derivation of the speaker’s bias in Inner-NPQs; for instance, NPQs with low negation and the particle *really*:

- (73) H: I am not going to the party. [ASSERT [$\neg p$]]
 S: Are you really not going? / Veramente non vieni?
- (74) $[[[Q [VERUM [\neg p]]]]]^{c,w} = \{p, \neg p\}$ (‘S asks H whether p or not p ’)
 Defined if $\forall w' \in \text{Epi}_{h_c}(w) : (\forall w'' \in \text{Conv}_{h_c}(w') : (\neg p \in \text{CG}_{w''}))$
 “ h_c is sure that in all the worlds satisfying h_c ’s conv. goals $\neg p$ is CG”

The presupposition is met in this context since H asserted $\neg p$. As above, the speaker’s epistemic bias can be derived via a competition effect, following the Principle of Economy: S chose a complex (meta-conversational) question over a simpler competitor (same question without VERUM). She must have a reason to do so. Thus, by the Principle of Economy, S is facing epistemic

²⁶ This logic is an evolution of Romero & Han 2004, with the same basic shape, but with several of the more complicated components eliminated: we do not need recourse to biased partitions, and we do not need to reason about the choice of the pronounced alternative.

conflict (we know that “lack of evidence” is ruled out with VERUM). Given that H gave evidence for $\neg p$ (H is not going), then S must have had a **prior bias for p** , and is requesting confirmation for (double-checking) the newly implied proposition that $\neg p$ because of epistemic conflict.²⁷

Finally, Outer-NPQs contain FALSUM. These questions are felicitous both in contradiction scenarios and in suggestion scenarios. This follows from the fact that, unlike VERUM, FALSUM does not require the hearer to have expressed the intention of adding a given proposition (p or $\neg p$) to the CG. In fact, the non-at-issue content of FALSUM in questions is logically compatible with two possible states of affairs: (i) H is sure $\neg p$ should be CG; e.g., H uttered/implies $\neg p$, or (ii) H has not taken a stance towards p (e.g., H has professed discourse neutrality towards the $p/\neg p$ issue) and nobody else has taken a stance towards the issue (neutral evidence context). Case (i) corresponds to contradiction scenarios and case (ii) to suggestion scenarios. We illustrate with a contradiction scenario:

- (75) H: I am staying home. [ASSERT [q]] $\Rightarrow \neg p$
 S: Aren't you going out? / Non esci?
- (76) $[[[Q [FALSUM [p]]]]]^{c,w} = \{p, \neg p\}$ ('S asks H whether p or not p ')
 Defined if $\forall w' \in \text{Epi}_{h_c}(w) : (\forall w'' \in \text{Conv}_{h_c}(w') : (p \notin \text{CG}_{w''}))$
 “ h_c is sure that in all the w satisfying h_c 's conv. goals, p is not CG.”

The presupposition is met in this context since H asserted q , which implies $\neg p$. As before, S's epistemic bias is derived via a competition effect: S chose a complex (meta-conversational) question over a simpler competitor (same question without FALSUM). She must have a reason to do so. Thus, by the Principle of Economy, she is facing a quality dilemma. Given that H gave evidence for $\neg p$, then S must have had a **prior bias for p** . Another possibility, compatible with H being certain about p not being CG, would be that H did not take a stance with respect to p , as in suggestion scenarios. In both cases, the speaker wants to **double-check their prior bias that p** (outer negation reading) because of epistemic conflict (contradiction scenarios), or lack of evidence (suggestion scenarios).

Summing up, the analysis derives the felicity conditions of biased questions (V-PPQs, Outer and Inner NPQs), namely that they can be felicitously ut-

²⁷ Remember that Low-NPQs do not have to involve a VERUM operator; in cases where VERUM is absent, these questions would work just like regular 'neutral' PQs with propositional negation.

tered in contradiction scenarios, where contextual evidence contradicts the speaker's prior bias for the answer to the question. Furthermore, it follows that only Outer-NPQs are felicitous in suggestion scenarios. This is because FALSUM indicates lack of certainty for adding p to the CG, which is compatible with evidence against p (contradiction scenarios) but also lack of compelling evidence (suggestion scenarios). The analysis also derives parallel licensing facts to English, despite surface differences.

6 *Mica* and bias reversal

The CG-managing operators VERUM and FALSUM are perspectival operators: they introduce information about the state of the CG explicitly anchored to the perspective of one of the discourse participants. The perspective taken by the operator is effectively 'bound' by the speech-act operator (Romero & Han 2004). That is, in assertions VERUM/FALSUM are speaker-oriented, and in questions, they are hearer-oriented. As we have noted, this situation resembles the common behavior of *interrogative flip* seen with evidential marking cross-linguistically (Garrett 2001, Speas & Tenny 2003, Murray 2017, Korotkova 2016b, Bhadra 2017 among others).

Our proposal for *mica* is that it is the same kind of perspectival operator, but without the flip: *mica* introduces a FALSUM operator that, rather than having bound perspective variables, has its perspective necessarily anchored to the speaker. This makes *mica* analogous to the type of evidential recently discussed by Bhadra (2017) (focusing on Bangla) that does not undergo interrogative flip. We will show that this perspectival stability inverts the pragmatic reasoning triggered by the use of a CG-management operator in regular NPQs, leading to a reversal in the polarity of the bias on the part of the participants in discourse. Under our proposal, the bias reversal phenomenon for *mica* amounts to lack of interrogative flip.

We earlier presented arguments that FALSUM should be treated as not-at-issue and one argument for a specifically presuppositional account; the arguments for not-at-issueness were straightforward and apply directly to *mica* as well, though the arguments for presuppositionality were somewhat equivocal. The situation for deciding among types of not-at-issue content is not much easier for *mica*: once again, the family-of-sentences largely do not apply, since *mica* is hard to embed; it can't occur in the antecedent of conditionals, with a higher negation ("It is not the case that (non)...*mica* p "), or in alternative questions. However, we do have one interesting case: *mica* can

embed under certain attitude verbs. In (77) the projective content is the implication that Carla — not the speaker — is certain that p should not be CG (p = Gianni stole the printer); thus the contrast between the two possible continuations (importantly, the global assertion with just plain negation *non* would be acceptable). In these cases we see what Tonhauser et al. (2013) described as ‘obligatory local effect’ — the anchor/origo for *mica* must be the attitude holder, not the speaker, and the implication acts as if it is embedded in the belief context. This data is suggestive of a presuppositional analysis, in that the other English triggers showing obligatory local effect for Tonhauser et al. (2013) are traditional presupposition triggers.²⁸

(77) Context: A printer in the office has been stolen, and Gianni is the rumored thief.

Carla dice che non è stato mica Gianni a rubare la stampante,
 Carla says that NEG is been MICA Gianni to steal the printer,
 #ma non ne è certa/ma io ne sono certa.
 #but NEG of-it is certain/but I of-it am certain.

‘Carla says that it wasn’t Gianni who stole the printer, #but she is not certain about it/but I am certain about it.’

Our entry for *mica* is given in (78). For the moment, we will take it to be a lexical property that *mica* is speaker-oriented (Origo_c is resolved to the speaker, which we notate s_c), though we return to this below.²⁹

(78) $\llbracket \mathbf{mica} \rrbracket^{c,w} = \lambda p . \neg p$
 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: $\llbracket \mathbf{mica} \rrbracket^{c,w} = \llbracket \mathbf{FALSUM} \rrbracket^{c/\text{Origo} \rightarrow s_c, w}$

²⁸ We leave open the question of what the exact mechanism is for the local effect in this case. One possibility is that projection is blocked because ‘Origo’ is bound locally by a doxastic operator. If *mica* were maximally projective (e.g., Potts-style CI-content), but required local binding of the origo variable, we might expect overall infelicity when embedded under attitude verbs, contrary to fact. One may also wonder whether *mica* exhibit ‘strong contextual felicity’ effects, another test used by Tonhauser et al. (2013) to diagnose presuppositional content. However, as we have shown, although *mica* gives rise to contextual felicity effects — in that it is infelicitous in a neutral context, like, e.g., (35), it can also be used discourse-initially (as in polite requests or in the paranoid scenario), as long as the inference can be easily accommodated.

²⁹ Where x is a named slot in c , the notation $c/x \rightarrow y$ indicates a modified context where x is evaluated as y relative to that context.

on his own hunger, and so would be in possession of appropriate evidence to decide whether adding p to the CG is compatible with quality from the speaker's (or any) perspective. Consequently, the *mica*-PQ is felicitous in this context for indicating the speaker's prior expectation that Miles wouldn't eat.

The opposite holds for the Outer-NPQ that is felicitous in good manners v. 1 only. The presupposition of hearer-oriented FALSUM is straightforwardly met in this context since H (Miles) implies — through his request for food — that he didn't eat already, indicating that $\neg p$ should be common ground, from his perspective. As in the previous cases, the speaker's epistemic bias can be derived via a competition effect. By the Principle of Economy, the speaker is facing a quality dilemma. Given that H gave evidence for $\neg p$, then S must have had a prior bias for p .

Furthermore, the analysis makes the welcome prediction that *mica*-PQs and V-PPQs won't have the same felicity conditions: recall from Section 3.3 that, unlike a *mica*-PQ, a V-PPQ is not acceptable in the Good Manners v. 2 scenario. In fact, despite sharing the same type of prior speaker bias, the content of the presupposition introduced by the two CG-management operators in PQs is not the same: while VERUM presupposes the *hearer's* certainty for p being CG, which is too strong to be satisfied in our scenario (where Miles's indication is very indirect), *mica* requires the *speaker's* certainty for p not being CG, which is instead satisfied in the scenario.

Finally, this analysis predicts the polarity licensing data for *mica*. Recall that *mica* in PQs does not license NPIs and does not anti-license PPIs (49). Given that *mica* introduces FALSUM and we have already established that FALSUM, unlike logical negation, does not license NPIs (or anti-license PPIs), we predict that *mica*-PQs will behave exactly like Outer-NPQs with respect to licensing of polarity items.

Before proceeding to assertions, we will briefly sketch three hypotheses about *why* it is that *mica* is perspectively stable. The first is that, in line with our presentation so far, as well as Frana & Rawlins (2016), the reference to the speaker is just a lexical property of *mica*. We know of nothing that would rule out this possibility, but will consider two hypotheses from which speaker anchoring might follow. These build on recent work by Bhadra (2017) on variation in interrogative flip for evidentials across languages. Bhadra's core proposal is that interrogative flip happens when an evidential's perspectival anchor is determined by a speech-act operator. Thus, following Bhadra (2017) on Bangla, the second hypothesis is that *mica* occurs in the analogue of rising declaratives, not 'true' questions. In Bangla, Bhadra argues that there

are no true PQs, which generally leads to a lack of interrogative flip in the language. However, in Italian we see interrogative flip in PQs with *veramente* and plain negation, so the hypothesis must be more limited relative to Bangla — at least some PQ-like utterances would need to involve genuine PQs.³⁰ The third hypothesis, also in line with (but not directly predicted by) Bhadra (2017), is that *mica* scopes high enough that it can never have its perspectival anchor shifted to the hearer, i.e., it actually scopes above the question operator; we would also need to assume that the unmarked *Origo* is the speaker.³¹ We have already provided a lower bound for *mica* at LF that is high in the left periphery, so this third hypothesis would be a natural extension of the scopal evidence examined earlier.

In summary, our proposal is that a question of the form “mica p ?” presupposes that the speaker is certain about p not being CG, leading to the expression of a mismatch in expectation with the current context. This presupposition can be met in two ways. Either S’s certainty follows from a prior bias for $\neg p$, in which case the reason for still posing the question would be epistemic conflict, i.e., that H implied p to be true, or some other type of contextual evidence against $\neg p$ (contradiction scenarios). The other possibility, compatible with S being certain about p not being (yet) CG, would be that no one has yet taken an explicit stance towards the $p/\neg p$ issue. One reason for posing the question could be to double-check on their prior bias that $\neg p$ is still the case, as in the paranoid scenario in (36). Another reason, as in the polite requests, S thinks that p is possible — but for politeness they want to be explicit about the fact that there is no (public) reason to expect p , giving H an easy path towards saying denying their request.

6.1 Back to ‘mica’ in assertions

Our proposal for *mica* in declaratives is that, just as in PQs, it expresses a form of meta-conversational negation, which we have treated as a subjective FALSUM operator. Since assertions are speaker-oriented already, the special perspectival properties of *mica* (vs. regular FALSUM) neutralize, and

³⁰ The intonational evidence we have examined in Italian is fairly inconclusive about differentiating ‘true’ PQs from something more declarative, where the word order is the same. That there is such a distinction is actually an intuition some speakers have, but one that requires more investigation than we can do here.

³¹ This would also commit us compositionally to certain kinds of question operators that do not encode a negative alternative in the semantics, e.g., that proposed by Maria Biezma & Rawlins (2012) and María Biezma & Rawlins (2017).

the operator remains speaker-oriented. This effectively turns previous accounts on their head, aside from Squartini (2017): Cinque (1976) (see also Zanuttini 1997, Penello & Pescarini 2008, Pescarini 2009) suggests that *mica* is a presupposition trigger, a sentence of the form (*non*) *mica p* asserts that $\neg p$ and presupposes that p was expected. On our proposal, the inference that p was expected is derived via a competition effect, whereas the presupposition (just as in PQs) is that the prejacent p is not taken to be CG, from the speaker’s perspective. We therefore capture the insight of the previous accounts of *mica* in assertions, while providing a proposal that can account for the wider range of data and unify the use of *mica* in assertions and PQs. Our proposed LF for a *mica* assertion as in (82) is illustrated in (83); this denotation is the same as $\llbracket[\text{ASSERT} [\text{FALSUM } p]]\rrbracket^{c,w}$ would be.

- (82) H: Luca è sposato. ('Luca is married'). [ASSERT [p]]
 S: Luca non è mica sposato. [ASSERT [MICA [p]]]
- (83) $\llbracket[\text{ASSERT} [\text{MICA } p]]\rrbracket^{c,w} = \lambda w . \neg p(w)$
 Defined only if $\forall w' \in \text{Epi}_{s_c}(w) : (\forall w'' \in \text{Conv}_{s_c}(w') : (p \notin \text{CG}_{w''}))$
 “ s_c is sure that in all the w conforming to their conv. goals, p is not CG.”

Remember that the presupposition of FALSUM can, in principle, be satisfied in two ways: (i) in the input context, S is sure that p is not CG because S believes $\neg p$ to be CG, or (ii) S is sure that p is not (yet) CG because nobody has taken a stance towards p (or $\neg p$) — the context is neutral with respect to the issue. In the case of assertions, the at-issue content filters out case (ii), since S explicitly takes a stance towards the p or $\neg p$ issue by asserting $\neg p$. The pragmatic reasoning follows the usual steps. S chose a meta-conversational move over a simpler competitor (a negative assertion without MICA), thus by Economy, S must be facing a Quality dilemma. Since case (ii) is filtered out, S must be facing epistemic conflict, thus p was assumed/expected (condition satisfied in the dialogue above because H asserted p). Crucially, we take it that the prior assertion by H must be treated as a ‘proposal’ in the sense of Farkas & Bruce (2010), and thus not yet CG at the time of the response: S is indicating by presupposition that p should not be CG, and even perhaps indicating that H’s assertion (from S’s perspective) wasn’t warranted.

This proposal straightforwardly captures the facts we have introduced about *mica* in assertions. First, its licensing conditions — *mica* requires a salient expectation to deny. As with PQs, a FALSUM-based assertion is meta-

conversational, and leads to reasoning involving the Principle of Economy. Because the speaker chose a meta-conversational move of type (i), they must be assumed to have some evidence that rules out p , and must be assumed to have some reason to provide evidence ruling out p — there must be something to have the conflict *with*. Consequently, a *mica* assertion will imply that the context provides some salient claim or expectation that p for the *mica* assertion to strongly deny; the denied proposition need not have a linguistic antecedent as long as it is inferrable. If there is no such salient expectation, then the utterance will be a violation of the Principle of Economy.

While this account does not involve a presupposition that p is expected, it derives a very similar inference given the 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. In fact, our proposal does better than Cinque's original presuppositional account in that it captures certain otherwise mysterious contrasts. Imagine a context in which an IKEA delivery person poses the questions below to a customer. In both examples, a PQ is used to inquire whether a certain proposition is true or false. The difference is that, buildings stereotypically have elevators, but not escalators; yet the use of *mica* in the customer's response is perfectly felicitous in (84b), but sounds very rude in (84a). The contrast does not follow from Cinque's analysis, in fact the opposite should hold given that the prejacent of *mica* is a stereotypical expectation in (84a), but not in (84b). If stereotypical expectations are not a factor, then the analysis would still wrongly predict that there should be no contrast between the two examples.

- (84) a. A: Does your building have an elevator?
B: No, il mio palazzo non ha (#**mica**) un ascensore.
"No, my building does not have (#MICA) an elevator."
b. A: Does your building have an escalator?
B: No, il mio palazzo non ha (**mica**) una scalamobile.
"No, my building does not have (MICA) an escalator."

Instead, the contrast above follows neatly from our analysis. Only in (84b), S is justified in taking for granted that it is not CG that S's building has an escalator. The opposite holds for (84a); here S would not be justified in assuming that the proposition that their building has an elevator should not be in the CG, given that it would be a very common thing to assume.

Finally, the account of the scopal facts in Section 2.3 follows from the nature of CG-managing operators, which scope high on the left periphery, like discourse particles (Zimmermann 2011); something that wouldn't be explained if *mica* were a regular negation that is presuppositional.³²

7 Conclusions

In this paper we have developed a new account of Italian polar questions as introducing presuppositional meta-conversational operators that are perspectival. Based on the presuppositional treatment of these operators, we have presented a new, and we hope, cleaner, version of the logic by which the biased 'epistemic inferences' of Romero & Han (2004) can be inferred from both questions and declaratives with meta-conversational content. The star of the paper is the particle *mica*, which shows up in both assertions and polar questions, with a complex distribution and interaction with negation. Building on work on evidential operators, we proposed that meta-conversational operators undergo interrogative flip (something already implied by Romero & Han 2004, but not under that name; our contribution here is to link this idea to the larger literature on interrogative flip), but that *mica* does not undergo interrogative flip — it is inherently speaker-oriented. Italian, though lacking a grammatical evidential system, therefore is an example of a language that mixes both standard interrogative flip behavior (Garrett 2001, etc.) with non-flip behavior that has been less commonly described (Bhadra 2017). This account of *mica* as a perspectivally stable metaconversational FALSUM operator fully explains the complex distribution of the particle, as well as many related observations, including scopal facts and polarity licensing.

This project ties into the larger open question of *why* interrogative-flip-like or 'origo shift' effects can happen or not happen; previous work has approached this on a language-by-language basis (Bhadra 2017) or simply taken

³² The analysis would also explain why *mica* leads to binding blocking effects. As shown below when *mica* intervenes between a quantifier and a bound variable, the sentence is marked. Related to that is the fact that *mica* is banned from restrictive relative clauses, as well as from constituent questions (Cinque 1976). Following Kratzer (1999) and Zimmermann (2008) on discourse particles, we suggest that these three effects can be given a unified account under the assumption that *mica* selects a closed proposition (i.e., a proposition with no variables bound from above).

- (i) Ogni candidato che ha partecipato al concorso non lo ha (*mica) superato.
'Every candidate x_i : x_i took the exam, NEG x_i (*MICA) passed it.'

it to always occur (Korotkova 2016b). Italian contributes to this question by suggesting that a more fine-grained parameter is necessary, i.e., a mechanism for variation between particular constructions or items. We have suggested two possibilities that could account for the data in Italian: variation among question-like clause types (following Bhadra 2017) or variation in the scope of particles (following, roughly, syntactic work on the left periphery).

We end with a prediction: there might be *many* languages that show mixed flip behavior, when the right semantics-pragmatics interface elements (e.g., particles) are examined, and the scope of interrogative flip extends beyond strict definitions of evidentials — and understanding the conditions for anchoring behavior at a fine-grained level is crucial to an account of force at the semantics-pragmatics interface.

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