High Negation Questions are always polarity focused and sometimes contain VERUM

Cory Bill and Todor Koev

Leibniz-Center General Linguistics (ZAS) and University of Konstanz

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We will be focusing on the following question forms:

1. Isn’t there a vegetarian restaurant in this town? (HNQ)
2. IS there a vegetarian restaurant in this town? (VrmQ)
3. ISN’T there a vegetarian restaurant in this town? (VrmHNQ)

These question forms all convey some kind of *speaker bias*. However, the bias has a unique profile in each case.

*Note*: Speaker bias reflects the speaker’s prior beliefs about the question prejacent. We will set aside other kinds of question bias (e.g. contextual bias, answer bias).
Main claims

- **Empirical claim**: Speaker bias varies across three dimensions.
  - *Polarity*: positive vs. negative bias
  - *Optionality*: optional vs. obligatory bias
  - *Strength*: weak vs. strong bias

- **Theoretical claim**: The settings of these bias dimensions are determined by a combination of two factors: *polarity focus* and *polar operator meaning*.
  - Polarity focus determines the polarity and optionality settings.
  - The meaning of a polar operator can influence the strength setting.
Structure of the talk

- Empirical evidence
  - Diagnosing bias polarity, optionality, and strength
  - Summary of findings
- Previous approaches
- Main ingredients of our account
  - Polar operators
  - Polarity focus
- Application of our account
  - Deriving bias polarity, optionality, and strength
  - Summary of proposal
- Conclusion
Empirical Evidence
Speaker bias can be either positive or negative.

(4) Isn’t Kai from Hawaii?
   \[ \Rightarrow \text{The speaker believed that Kai was from Hawaii.} \]  
   (positive bias)

(5) IS Kai from Hawaii?
   \[ \Rightarrow \text{The speaker believed that Kai was not from Hawaii.} \]  
   (negative bias)

(6) ISN’T Kai from Hawaii?
   \[ \Rightarrow \text{The speaker believed that Kai was from Hawaii.} \]  
   (positive bias)

Shortcut: Speaker bias is always of the opposite polarity to that of the question prejacent.

<table>
<thead>
<tr>
<th>Label</th>
<th>Polarity</th>
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<tbody>
<tr>
<td>HNQs</td>
<td>positive</td>
</tr>
<tr>
<td>VrmQs</td>
<td>negative</td>
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<tr>
<td>VrmHNQs</td>
<td>positive</td>
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Speaker bias can be either obligatory or optional.

**The By Any Chance test:** The neutrality marker *by any chance* is incompatible with any degree of speaker bias (Sadock 1971). So, it is only predicted to be infelicitous when combined with questions that obligatorily convey a bias.

(7)  #Doesn’t John drink alcohol, by any chance?  
(8)  DOES John drink alcohol, by any chance?  
(9)  #DOESN’T John drink alcohol, by any chance?

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<tbody>
<tr>
<td>HNQs</td>
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<tr>
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<tr>
<td>VrmHNQs</td>
<td>obligatory</td>
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Diagnosing bias strength

- Speaker bias can be either weak or strong.
- **The Follow-up test:** A biased question is paired with one of two follow-up sentences which spell out the speaker bias and explicitly assign to it different levels of epistemic certainty.
  - A sentence with *suspect* signals a *weak* preference for the prejacent.
  - A sentence with *be certain* signals a *strong* preference for the prejacent.

(10) Isn’t Diego from Peru? That is to say, I suspected / #I was certain he was.  
    (weak bias)

(11) IS Diego from Peru? That is to say, #I suspected / I was certain he wasn’t.  
    (strong bias)

(12) ISN’T Diego from Peru? That is to say, #I suspected / I was certain he was.  
    (strong bias)

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<tr>
<td>HNQs</td>
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<td>strong</td>
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Summary of findings

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<th>Label</th>
<th>Example</th>
<th>Polarity</th>
<th>Optionality</th>
<th>Strength</th>
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</thead>
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<tr>
<td>HNQs</td>
<td>Isn’t it raining?</td>
<td>positive</td>
<td>obligatory</td>
<td>weak</td>
</tr>
<tr>
<td>VrmQs</td>
<td>IS it raining?</td>
<td>negative</td>
<td>optional</td>
<td>strong</td>
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<td>VrmHNQs</td>
<td>ISN’T it raining?</td>
<td>positive</td>
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- Each question form has a unique speaker bias profile.
- Looking at VrmHNQs, their polarity and optionality settings align with HNQs, while their strength setting aligns with VrmQs.
Previous Approaches
Previous approaches

- **Epistemic approach** *(Romero & Han 2004; Repp 2013; Goodhue 2019; Silk 2019)*
  - Epistemic operators (e.g. VERUM, FALSUM), when applied to $p$, convey that the speaker is certain that $p$ should or should not be added to the common ground.
  - In questions, speaker bias is derived via reasoning about why the speaker would question the hearer’s certainty in the question prejacent.

- **Decision-theoretic approach** *(van Rooy & Safarova 2003)*
  - The speaker chooses a question form that accords with her beliefs and desires (the speaker tries to maximize the utility value of the question prejacent).
  - Speaker bias is derived via reasoning by the hearer about why the speaker chose a given question form.

- **Projected discourse development approach** *(Krifka 2015; Malamud & Stephenson 2015; AnderBois 2019)*
  - Different question forms influence in a variety of ways the further development of a discourse.
  - Speaker bias is derived through reasoning about which answers are projected in the discourse.
Main Ingredients of our Account
Polar operators

- Polar operators are clause-level elements that entail the prejacent proposition or its negation.
- We will discuss two such operators today:
  - Negation
  - VERUM
- Negation flips the truth value of a proposition.
- VERUM is realized as verum accent (aka “verum focus”), i.e. a pitch accent on the finite auxiliary that (in declaratives) has the effect of emphasizing the truth of the prejacent (Höhle 1992).

(13) Oliver IS from Australia.
    ⇝ It is true that Oliver is from Australia.
The VERUM operator has no truth-conditional content but does introduce a **conflicting evidence presupposition** (CEP).

\[
\text{[VERUM]}(p) = p, \\
\text{provided there is conflicting evidence about } p
\]

This semantics accounts for the felicity of a verum accent in **contradiction** contexts, which satisfy the CEP, and their infelicity in **neutral** contexts, which do not satisfy the CEP.

(15) A: Oliver is not from Australia. 
     B: No, he IS from Australia.

(16) Out of the blue... 
     A: Is it raining? 
     B: #It IS raining.
We adopt Rooth’s alternative semantics for focus (Rooth 1985; 1992).

Every linguistic expression \( \alpha \) has two semantic values: ordinary \( [\alpha]^o \) and focus \( [\alpha]^f \).

\[
\begin{align*}
(17) & \quad [\text{cat}]^o = \text{cat}, \ [\text{cat}_F]^o = \text{cat} \\
(18) & \quad [\text{cat}]^f = \{\text{cat}\}, \ [\text{cat}_F]^f = \{\text{cat, dog, ...}\}
\end{align*}
\]

The focus value of a complex expression is composed from the focus values of its constituents in a pointwise fashion.

A focus domain \( \phi \) is linked via a squiggle operator \( \sim \) to an appropriate antecedent \( C \).

We view polarity focus as regular focus marking on a polar operator. Specifically, we assume the following focus semantic values for focused polar operators.

\[
(19) \quad [\text{VERUM}_F]^f = [\text{not}_F]^f = \{\lambda p.p, \lambda p.\neg p\}
\]

Note: We assume that in HNQs focus on negation is manifested by a high structural position (not prosodically). For this reason, polarity focus is always present in HNQs.
Proposal
Deriving bias polarity

- The focus domain $\phi$ and the focus antecedent $C$ must meet Rooth’s (1992) constraint on contrasting phrases: $C \in \llbracket \phi \rrbracket^f \land C \neq \llbracket \phi \rrbracket^o$.

(20) Didn’t Jane graduate highschool? (HNQs)
   a. $[Q \ [\not F \ [Jane \ graduate \ highschool]] \phi \sim C]_\psi$
   b. $\llbracket \psi \rrbracket^o = \{graduate, \neg graduate\}$
   c. $\llbracket \phi \rrbracket^f = \{graduate, \neg graduate\}$
   d. $\llbracket \phi \rrbracket^o = \neg graduate$
   e. $C = graduate$

- The speaker is questioning the focus domain while simultaneously pointing to its polar alternative, so she must have a preference for that alternative.

- Other question forms:

(21) $[Q \ [\text{VERUM}_F \ [Jane \ graduate \ highschool]] \phi \sim C]$ (VrmQs)
   $\llbracket \phi \rrbracket^f = \{p, \neg p\}$, $\llbracket \phi \rrbracket^o = p$, so $C = \neg p$

(22) $[Q \ [\not F \ [\text{VERUM} \ [Jane \ graduate \ highschool]]]] \phi \sim C]$ (VrmHNQs)
   $\llbracket \phi \rrbracket^f = \{p, \neg p\}$, $\llbracket \phi \rrbracket^o = \neg p$, so $C = p$

- Note: The speaker bias is always of the opposite polarity to that of the focus domain!
Polarity focus must be interpreted, therefore, when a question contains polarity focus, it obligatorily conveys speaker bias.

HNQs and VrmHNQs structurally focus the negative polar operator, therefore, the questions are obligatorily biased.

(23) # By any chance, didn't Kim join the team?
(24) # By any chance, DIDN'T Kim join the team?

VrmQs are optionally biased (Goodhue 2019; Gutzmann et al. 2020; Bill & Koev 2021). This suggests that a VERUM operator may but need not be focused.

We propose that a VrmQ is ambiguous between two LFs. While VERUM’s CEP ensures that both LFs require conflicting evidence about the prejacent, only the variant with polarity focus conveys a bias.

(25) DID Kim join the team?
    a. [Q [VERUM [Kim join the team]]] (unbiased)
    b. [Q [VERUMF [Kim join the team]]φ ∼ C] (biased)
Speaker bias derived purely from polarity focus (as in HNQs) is weak in strength.

(26) Isn’t Mary coming to the party? That is to say, I suspected she would.

This is because such questions are simultaneously presenting the two polar alternatives as valid answers (via Q), while also gesturing towards one of these alternatives (via \(\sim C\)).

The result of combining these somewhat contrasting signals is the generation of a weak speaker bias.

When biased, VrmQs convey a strong bias.

(27) IS Mary coming to the party? That is to say, I was certain she wouldn’t.

This is because of VERUM’s CEP. That is, since the context is already conflicted w.r.t \(p\), whenever the speaker is biased they are strongly biased.

This is also the reason why VrmHNQs convey a strong bias.

Note: We assume that VERUM in VrmHNQs is never focus-marked, or else we would derive both a positive and a negative speaker bias.
VrmHNQs match HNQs in polarity and optionality because both necessarily generate polarity focus on a negative element.

VrmHNQs match VrmQs in strength because both convey a bias in a context that satisfies VERUM’s conflicting evidence presupposition.
Conclusion and Outlook
Speaker bias varies in polarity, optionality, and strength.

Any particular feature combination arises through two factors: polar operators and polarity focus.

- Polarity focus determines the polarity and optionality settings.
- The semantics of the polar operator may additionally strengthen the bias.
In addition to the questions we have considered today, our analysis can straightforwardly capture the speaker biases conveyed by the following question forms:

(28) Is there REALLY a vegetarian restaurant in this town?
(29) Is there NOT a vegetarian restaurant in this town?
(30) There is not a vegetarian restaurant in this town, is there?
(31) There is a vegetarian restaurant in this town, isn’t there?
Thank you!