High Negation Questions are always polarity focused and sometimes contain VERUM

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Empirical basis

- 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

Diagnosing bias polarity

- Speaker bias can be either positive or negative.

(4) Isn't Kai from Hawaii?
$\rightsquigarrow$ *The speaker believed that Kai was from Hawaii.* (positive bias)

(5) IS Kai from Hawaii?
$\rightsquigarrow$ *The speaker believed that Kai was not from Hawaii.* (negative bias)

(6) ISN'T Kai from Hawaii?
$\rightsquigarrow$ *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.

Label	*Polarity*
HNQs	positive
VrmQs	negative
VrmHNQs	positive

Diagnosing bias optionality

- 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? (obligatory bias)

(8) DOES John drink alcohol, by any chance? (optional bias)

(9) #DOESN'T John drink alcohol, by any chance? (obligatory bias)

Label	*Optionality*
HNQs	obligatory
VrmQs	optional
VrmHNQs	obligatory

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)

Label	*Strength*
HNQs	weak
VrmQs	strong
VrmHNQs	strong

Summary of findings

Label	*Example*	*Polarity*	*Optionality*	*Strength*
HNQs	*Isn't it raining?*	positive	obligatory	weak
VrmQs	*IS it raining?*	negative	optional	strong
VrmHNQs	*ISN'T it raining?*	positive	obligatory	strong

- 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.
$\rightsquigarrow$ *It is <u>true</u> that Oliver is from Australia.*

Semantics for VERUM

- The VERUM operator has no truth-conditional content but does introduce a **conflicting evidence presupposition** (CEP).

  (14) $[\![\text{VERUM}]\!](p) = p$,
  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. (contradiction context)
  B: No, he IS from Australia.

  (16) *Out of the blue...* (neutral context)
  A: Is it raining?
  B: #It IS raining.

Polarity focus

- We adopt Rooth's alternative semantics for focus (Rooth 1985; 1992).
  - Every linguistic expression α has two semantic values: **ordinary** $[\![\alpha]\!]^o$ and **focus** $[\![\alpha]\!]^f$.

    (17) $[\![\text{cat}]\!]^o = cat$, $[\![\text{cat}_F]\!]^o = cat$

    (18) $[\![\text{cat}]\!]^f = \{cat\}$, $[\![\text{cat}_F]\!]^f = \{cat, dog, ...\}$

  - The focus value of a complex expression is composed from the focus values of its constituents in a pointwise fashion.
  - A focus domain ϕ 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) $[\![\text{VERUM}_F]\!]^f = [\![\text{not}_F]\!]^f = \{\lambda p.p, \lambda p.\neg p\}$

- *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 ϕ and the focus antecedent C must meet Rooth's (1992) constraint on contrasting phrases: $C \in [\![\phi]\!]^f \wedge C \neq [\![\phi]\!]^o$.

(20) Didn't Jane graduate highschool? (HNQs)

a. $[\text{Q } [\text{not}_F \text{ [Jane graduate highschool]}]_\phi \sim C]_\psi$

b. $[\![\psi]\!]^o = \{graduate, \neg graduate\}$

c. $[\![\phi]\!]^f = \{graduate, \neg graduate\}$

d. $[\![\phi]\!]^o = \neg graduate$

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

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

- *Note*: The speaker bias is always of the *opposite* polarity to that of the focus domain!

Deriving bias optionality

- 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 [VERUM$_F$ [Kim join the team]]$_\phi$ $\sim$ C] (biased)

Deriving bias strength

- 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.

Summary of proposal

Label	*Example*	*Polarity*	*Optionality*	*Strength*	*Analysis*
HNQs	*Isn't it raining?*	positive	obligatory	weak	not_F
VrmQs	*IS it raining?*	negative	optional	strong	VERUM or VERUM_F
VrmHNQs	*ISN'T it raining?*	positive	obligatory	strong	not_F + VERUM

- 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

Conclusion

- 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.

Outlook

- 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!