Inquisitive pragmatics
Ignorance, possibility and exhaustivity

Matthijs Westera

Institute for Logic, Language and Computation
University of Amsterdam

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Structure

Setting the scene
   Aims of this talk
   Framework: unrestricted inquisitive semantics

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   Characterising relevance and goal
   Possibility and attentive ‘might’
   Escape hatches for the existential quantifier

Exhaustivity implicatures
   In inquisitive pragmatics
   Exhaustivity and focus
   Mention-some questions

Conclusion
Pragmatics
(Grice, 1975)

- The utterance of a sentence in context may convey more than the sentence’s literal meaning.
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- The utterance of a sentence in context may convey more than the sentence’s literal meaning.
- The context includes assumptions about the dialogue participants’ behaviour, in particular that they behave cooperatively, as captured by a set of maxims:
The utterance of a sentence in context may convey more than the sentence’s literal meaning.

The context includes assumptions about the dialogue participants’ behaviour, in particular that they behave cooperatively, as captured by a set of maxims:

- **Quality**: Say only what you believe to be true.
- **Relation**: Say only what you believe to be relevant.
- **Quantity**: Be just as informative as required for the goal of the conversation.
- **Manner**: Be concise, clear, etcetera.
Grice (1975) on the maxim of Relation
Grice (1975) on the maxim of Relation

Though the maxim itself is terse, it’s formulation conceals a number of problems that exercise me a good deal: questions about what different kinds and focuses of relevance there may be, how these shift in the course of a talk exchange, how to allow for the fact that subjects of conversation are legitimately changed, and so on.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘John or Mary came’.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘John or Mary came’.
2. Hence, that John or Mary came is relevant. (Relation)
Ignorance and possibility implicatures
Classical explanation

1. The speaker said ‘*John or Mary came*’.
2. Hence, that *John or Mary came* is relevant. (Relation)
3. Hence, that *John came* would be relevant too.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘John or Mary came’.
2. Hence, that John or Mary came is relevant. (Relation)
3. Hence, that John came would be relevant too.
4. Had the speaker believed that John came, she would have conveyed that instead (Quantity)
   → Ignorance
5. Hence she must not believe that John came.
6. She must believe that John or Mary came. (Quality)
7. Hence, she must consider it possible that Mary came. → Possibility
Ignorance and possibility implicatures

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1. The speaker said ‘John or Mary came’.
2. Hence, that *John or Mary came* is relevant. (Relation)
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5. Hence she must not believe that *John came*. → Ignorance

What is the conversational goal? /uni25B8 Quantity: Be just as informative as required.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘John or Mary came’.
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6. She must believe that John or Mary came. (Quality)
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5. Hence she must not believe that John came. → Ignorance
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘John or Mary came’.
2. Hence, that John or Mary came is relevant.
3. Hence, that John came would be relevant too. ??
4. Had the speaker believed that John came, she would have conveyed that instead
5. Hence she must not believe that John came.

• What are the relevant alternatives?
  • Semantically there is nothing special about a disjunct.
  • A syntactic explanation would not generalize.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘One of John and Mary came’.
2. Hence, that one of John and Mary came is relevant.
3. Hence, that John came would be relevant too. ??
4. Had the speaker believed that John came, she would have conveyed that instead
5. Hence she must not believe that John came.

What are the relevant alternatives?

- Semantically there is nothing special about a disjunct.
- A syntactic explanation would not generalize.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘Maybe John came’.
2. Hence, that *maybe John came* is relevant.
3. Hence, that *certainly John came* would be relevant too. ??
4. Had the speaker believed that *certainly John came*, she would have conveyed that instead.
5. Hence she must not believe that *certainly John came*.

- What are the relevant alternatives?
  - Semantically there is nothing special about a disjunct.
  - A syntactic explanation would not generalize.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘Most people came’.
2. Hence, that most people came is relevant.
3. Hence, that all people came would be relevant too. ??
4. Had the speaker believed that all people came, she would have conveyed that instead
5. Hence she must not believe that all people came.

What are the relevant alternatives?

- Semantically there is nothing special about a disjunct.
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Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘Five people came’.
2. Hence, that five people came is relevant.
3. Hence, that six people came would be relevant too. ??
4. Had the speaker believed that six people came,
   she would have conveyed that instead
5. Hence she must not believe that six people came.

What are the relevant alternatives?

- Semantically there is nothing special about a disjunct.
- A syntactic explanation would not generalize.
Ignorance and possibility implicatures

Classical explanation

1. The speaker said ‘It’s warm’.
2. Hence, that it is warm is relevant.
3. Hence, that it were hot would be relevant too.
4. Had the speaker believed that it was hot, she would have conveyed that instead.
5. Hence she must not believe that it was hot.

What are the relevant alternatives?
- Semantically there is nothing special about a disjunct.
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Ignorance and possibility implicatures

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1. The speaker said ‘John or Mary came’.
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What is the conversational goal?

- Quantity: Be just as informative as required for the goal of the conversation.
Ignorance and possibility implicatures

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5. Hence she must not believe that *John came*.

What is the conversational goal?

- **Quantity**: Be just as informative as required to be maximally informative.
Ignorance and possibility implicatures
A first inquisitive account (Groenendijk and Roelofsen 2009, Ciardelli et al. 2009)

1. The speaker said 'John or Mary came'.
2. She must believe that John or Mary came. (inf. sinc.)
3. She must consider it possible that John came. (att. sinc.)
4. She raises the issue of whether John came or Mary.
5. This must be an issue, too, for herself. (inq. sinc.)
6. Hence, she must not believe that John came. → ignorance

However:

This seems too rigid: quiz contexts do require informative sincerity, but not inquisitive and attentive.

And also: what a waste!
Ignorance and possibility implicatures
A first inquisitive account (Groenendijk and Roelofsen 2009, Ciardelli et al. 2009)

- **Quality**: Say only what you believe to be true.
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A first inquisitive account (Groenendijk and Roelofsen 2009, Ciardelli et al. 2009)

- **Quality:** Propose $A$ only if
  (i) you believe in $\bigcup A$ (informative sincerity)
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Aims of this talk

Aim 1
To maintain the spirit of the classical explanation, using the richness of unrestricted inquisitive semantics to solve the two problems (characterizing relevance and goal).

Aim 2
To give a new account of exhaustivity implicatures, in particular those of responses to an initiative.
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Exhaustivity implicatures

(1) I saw John or Mary in the park.
    ~ I did not see both
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- Many expressions can implicate *exhaustivity*. 
Exhaustivity implicatures

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     2. … (as above)
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4. The speaker has an opinion as to whether they both came.
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- This holds for ‘old’ accounts of utterances in isolation, as well as newer accounts of responses to a question (Schulz and Van Rooij 2004, Spector 2007).
Exhaustivity implicatures

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- This holds for ‘old’ accounts of utterances in isolation, as well as newer accounts of responses to a question (Schulz and Van Rooij 2004, Spector 2007).
- And the new accounts are quite elaborate (but do not take my word for it).
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Aim 1
To maintain the spirit of the classical explanation, using the richness of unrestricted inquisitive semantics to solve the two problems (characterizing relevance and goal).
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Setting the scene
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  Framework: unrestricted inquisitive semantics

Ignorance and possibility
  Characterising relevance and goal
  Possibility and attentive ‘might’
  Escape hatches for the existential quantifier

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  In inquisitive pragmatics
  Exhaustivity and focus
  Mention-some questions

Conclusion
Framework: unrestricted inquisitive semantics

Whiteboard intermezzo!
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Conclusion
Relevant alternatives

Challenge
How to characterise which proposals may take the place of $X$ in:

4. ‘Had the speaker believed $X$, she should have said so.’
Relevant alternatives

Challenge
How to characterise which proposals may take the place of \( X \) in:

4. ‘Had the speaker believed \( X \), she should have said so.’

Assumed division of labour

- The goal is (typically) to settle a proposal in a most informative way.
- Relevance is closed under entailment.
Characterising the goal

Settling responses

A proposal is settled by a response \( B \) if \( \exists \alpha \in A \) s.t. \( B \subseteq \alpha \).

Comparative settling

A response \( B \) settles proposal \( A \) more strongly than a response \( B' \) if \( \exists \alpha \in A \) s.t. \( B \subseteq \alpha \) and \( B' \subseteq \alpha \).

Proposal under discussion

In the context there is a proposal under discussion, the PUD → but see Liz' talk tomorrow.

Default assumption

The PUD is the most recently made proposal. Quantity: Make your possibilities as informative as required for the goal of the conversation.
Characterising the goal

Settling responses

A proposal $A$ is settled by a response $B$ iff $\exists \alpha \in A$ s.t. $\cup B \subseteq \alpha$. 
Characterising the goal

Settling responses
A proposal $A$ is settled by a response $B$ iff $\exists \alpha \in A$ s.t. $\bigcup B \subseteq \alpha$.

Comparative settling
A response $B$ settles proposal $A$ more strongly than a response $B'$, if $\exists \alpha \in A$ s.t. $\bigcup B \subseteq \alpha$ and $\bigcup B' \not\subseteq \alpha$. 
Characterising the goal

Settling responses
A proposal $A$ is settled by a response $B$ iff $\exists \alpha \in A$ s.t. $\cup B \subseteq \alpha$.

Comparative settling
A response $B$ settles proposal $A$ more strongly than a response $B'$, if $\exists \alpha \in A$ s.t. $\cup B \subseteq \alpha$ and $\cup B' \nsubseteq \alpha$.

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In the context there is a proposal under discussion, the $PUD$. 
Characterising the goal

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$\triangleright$ Quantity: Make your possibilities as informative as required for the goal of the conversation.
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Proposal under discussion
In the context there is a proposal under discussion, the $PUD$.

Default assumption
The $PUD$ is the most recently made proposal
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▶ Quantity: Make your possibilities as informative as required
to maximally strongly settle the $PUD$. 
Characterising relevance

The context provides a set of relevant proposals, the \(REL\), that is closed under entailment: if \(A \in REL\) and \(B \cup A\), then \(B \in REL\).

Intuition: To entail what was previously said, is to provide support. When it is relevant that John came, it is also relevant that John came and it's the birthday of Prince Charles.

Being over-informative is a matter of Quantity: division of labour.

Default assumption The \(PUD\), with all proposals that entail it, are the only relevant proposals.

Warning: This is unrestricted entailment!
Characterising relevance

Relevant proposals

The context provides a set of relevant proposals, the $REL$, that is closed under entailment:

if $A \in REL$ and $B \models A$, then $B \in REL$. 

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Relation 

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- Being over-informative is a matter of Quantity: division of labour.

Default assumption

The $PUD$, with all proposals that entail it, are the only relevant proposals.

- **Relation**: Only say what you believe to be relevant.
Characterising relevance

Relevant proposals

The context provides a set of relevant proposals, the $REL$, that is closed under entailment:
if $A \in REL$ and $B \models A$, then $B \in REL$.

Intuition:
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Default assumption

The $PUD$, with all proposals that entail it, are the only relevant proposals.

> **Relation**: Let your proposal entail the $PUD$. 
Characterising relevance

Relevant proposals

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Intuition:

\begin{itemize}
  \item To entail what was previously said, is to provide support.
  \item When it is relevant that John came, it is also relevant that John came and it’s the birthday of Prince Charles.
  \item Being over-informative is a matter of Quantity: division of labour.
\end{itemize}

Default assumption

The \textit{PUD}, with all proposals that entail it, are the only relevant proposals.

\begin{itemize}
  \item \textbf{Relation}: Let your proposal entail the \textit{PUD}.
\end{itemize}

Warning: This is \textit{unrestricted} entailment!
Ignorance and possibility implicatures
New inquisitive pragmatics account

1. The speaker said 'John or Mary came'.
2. The PUD must contain the possibilities that John came, and that Mary came. (Relation, Quantity)
3. Had the speaker known that John came, she could have settled it more strongly. (Quantity)
4. Hence, she must not believe that John came. → ignorance
5. But she must believe that John or Mary came. (Quality)
6. Hence she must consider it possible that Mary came. → possibility
Ignorance and possibility implicatures

New inquisitive pragmatics account

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Structure

Setting the scene
   Aims of this talk
   Framework: unrestricted inquisitive semantics

Ignorance and possibility
   Characterising relevance and goal
   Possibility and attentive ‘might’
   Escape hatches for the existential quantifier

Exhaustivity implicatures
   In inquisitive pragmatics
   Exhaustivity and focus
   Mention-some questions

Conclusion
Attentive ‘might’
(Ciardelli, Groenendijk & Roelofsen, 2009, 2010)
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Idea:

- ‘Might $p$’ draws attention to $p$ without committing to anything.
Attentive ‘might’
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- ‘Might $p$’ draws attention to $p$ without committing to anything.
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- The epistemic flavour of ‘might’ is (primarily) an implicature.
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- ‘Might $p$’ draws attention to $p$ without committing to anything.
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- This explains the equivalence between a and b below:

(2) a. John might be in London or he might be in Paris
b. John might be in London and he might be in Paris
Attentive ‘might’
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▸ ‘Might $p$’ draws attention to $p$ without committing to anything.
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▸ This explains the equivalence between a and b below:

(2) a. John might be in London or he might be in Paris
   b. John might be in London and he might be in Paris

(3) a. John might speak Russian or he might speak French
   b. John might speak Russian and he might speak French
Purely attentive ‘might’

- They rely on attentive sincerity for the epistemic flavour...
Purely attentive ‘might’

- They rely on attentive sincerity for the epistemic flavour...
- I have assumed that possibility derives from ignorance.
Purely attentive ‘might’

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Prediction
The epistemic flavour of ‘might’ disappears with the ignorance implicature.
Purely attentive ‘might’

- They rely on attentive sincerity for the epistemic flavour...
- I have assumed that possibility derives from ignorance.

Prediction

The epistemic flavour of ‘might’ disappears with the ignorance implicature.

(4) a. Teacher: Next one: the streets are wet. Has it been raining?
    b. Student: Well, if the streets are wet, it must have been raining.
    c. Teacher: Ah, but the neighbour might have been washing his car.
    d. Student: The neighbour doesn’t have a car!
    e. Teacher: Very good! Another one correct.
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  Mention-some questions

Conclusion
A short narrative

A person in a white coat came to me yesterday. It was a man, with short hair, grayish black. He claimed to be from the planet K-Pax. His name was Prott.

Observation
For disjunction, the first two explanations are unavailable.
A short narrative

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(6) John, Mary, Prott or Suzy came to me yesterday. It was a man, with short hair, grayish black. He claimed to be from the planet K-Pax. His name was Prott. . . .
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Observation
For disjunction, the first two explanations are unavailable.
An intuitive explanation

Explanation
An intuitive explanation

Explanation

- Semantically, disjunction and existential quantification are indistinguishable.
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- Semantically, disjunction and existential quantification are indistinguishable.
- Disjunction, but not the existential quantifier, explicitly mention two possibilities, thereby:
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- Semantically, disjunction and existential quantification are indistinguishable.
- Disjunction, but not the existential quantifier, explicitly mention two possibilities, thereby:
  - indicating the speaker’s ability; and
  - locking on a particular level of granularity.
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- Semantically, disjunction and existential quantification are indistinguishable.
- Disjunction, but not the existential quantifier, explicitly mention two possibilities, thereby:
  - indicating the speaker’s ability; and
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- This rules out the first two explanations in case of disjunction.
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- Semantically, disjunction and existential quantification are indistinguishable.
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  - indicating the speaker’s ability; and
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- For existentials, these provide an escape hatches to block ignorance implicatures.
Escape hatches in pragmatic reasoning

1. The speaker said 'A man came to me'.
2. Had the speaker known John came, she should have said it.
3. Hence, she must not believe that John came.

Prediction
Existentials trigger ignorance implicatures only when the ability and granularity escape hatches are ruled out.
1. The speaker said ‘A man came to me’.
Escape hatches in pragmatic reasoning

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Existentials trigger ignorance implicatures only when the ability and granularity escape hatches are ruled out.
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1. The speaker said ‘*One of John and Bob came to me*’.
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Sneak preview: Scalar modifiers
This afternoon

(7) a. At least three boys came
   b. More than two boys came
Sneak preview: Scalar modifiers
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Observation
Superlative modifiers mention a possibility explicitly, while comparative modifiers do not.
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Conclusion
Exhaustivity of an utterance in isolation

Analogously to the classical approach

1. The speaker said 'John or Mary came'.
2. This entails the PUD.
3. Hence, that John came and maybe Mary too also entails the PUD.
4. Had the speaker known this, she should have conveyed it.
5. Hence, she must not believe that John came.
6. The speaker has an opinion as to whether they both came. (Competence assumption)
7. Hence, she must believe that not both came.
Exhaustivity of an utterance in isolation
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Exhaustivity in general

The exhaustivity of utterances in isolation may not be very interesting:

In a context where the competence assumption can be made, typically the exhaustivity itself can be assumed.

(8) I saw John or Bob in the park.

The exhaustivity of responses to questions is much more robust:

(9) Was John or Bob in the park? - Yes, John was.

So can we do without the competence assumption in this case?
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The exhaustivity implicature of a response

(Westera 2012)
The exhaustivity implicature of a response  
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Intuition: 

1. The initiator said ‘John or Mary came’.

Because attending can be done without committing, no competence assumption is required. We need a maxim that says: do not unattend without a reason. → We already have one!
The exhaustivity implicature of a response  
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Intuition:

1. The initiator said ‘John or Mary came’.
2. The responder said ‘John came’, leaving the possibility that Mary came unattended.
The exhaustivity implicature of a response
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The exhaustivity implicature of a response
Reformulation of (Westera 2012)

1. The speaker said 'John or Mary came'.
2. The responder said 'John came'.
3. This does not entail the PUD. (*Relation)
4. The responder could have said 'John came, and maybe Mary too', which does entail the PUD.
5. But she did not. The reason must be that she wants to avoid the implicature that possibly Mary came.
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Reformulation of (Westera 2012)

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6. She must believe that Mary did not come.
Unrestrictedness and exhaustivity

- Intuitively, without attentive content there is no unattending, hence no exhaustivity.
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Exhaustivity and unrestrictedness
If compliance and entailment are the same order, no exhaustivity is needed.
Exhaustivity and focus

(10) a. John or Mary came to the party.
    b. JOHN ↑ or MARY ↓ came to the party.
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Question-answer congruence of focus (Rooth, 1996)
The position of focus in an answer corresponds to the questioned position in a wh-question, or the disjuncts in an alternative question.
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Focus and Contextual Question (Beaver and Clark, 2008)

A focused constituent presupposes a question under discussion, the Contextual Question, to which it claims to be an exhaustive answer.
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  - Focus serves the purpose only of highlighting that it is a response to the PUD, ensuring the implicatures are recognised.
Some examples
On the whiteboard!

(11) Who came to the party?
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Sneak preview: Scalar modifiers
(this afternoon)
Scalar modifiers ‘at least’, ‘more than’, etc., likewise presuppose a question(/proposal) under discussion.
Structure

Setting the scene
  Aims of this talk
  Framework: unrestricted inquisitive semantics

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  Characterising relevance and goal
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Mention-some questions
E.g., (Schulz and Van Rooij, 2005)

- Responses to wh-questions can be interpreted exhaustively or non-exhaustively.
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(12) A: Where can I buy an Italian newspaper?
    B: In the little shop around the corner
    $\n\not$ not anywhere else
A possible explanation
(Westera, 2012, inspired by Schulz and Van Rooij, 2005)

1. The initiator asked 'Where can I buy an Italian newspaper?'
2. She considers this proposal to be relevant.
3. The responder said 'in the shop around the corner'.
4. This leaves all other places unattended.
5. The reason must be that she considers those places irrelevant.

However:

Canceling an implicature of the initiator, we would expect the response to be marked.

Are those other places really irrelevant? Is there really no exhaustivity implicature?

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An alternative explanation: domain restriction

Natural language quantifiers come with a contextual domain restriction \((\text{DR})\) (e.g., Stanley and Szabó, 2000). Hypothesis

The domain of quantification in mention-some contexts is restricted to places to which the speaker is easily directed.

However, the hypothesis makes a more dramatic prediction:

Prediction

There exist no mention-some disjunctions.
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(14) A: Will your father or mother be home?
B: Yes, my father will be home. /slash.left/uni219D/my mother will not be home.

Tentative explanation:/uni25B8/But there is a modal 'will' there, over which it is hard for
negation to scope./uni25B8/The exhaustivity implicature is: it is not the case that my
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