

Attention, exhaustivity and non-cooperativity

Matthijs Westera

Institute for Logic, Language and Computation
University of Amsterdam

Göttingen, October 6th 2013

Two puzzles

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'In common conversation the confirmation of a part is meant to imply the denial of the remainder.'

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evoked questions

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Part I

1. Diagnosis
2. Theory
3. Results
4. Discussion

1. Diagnosis

- 1.1. The problem
- 1.2. Existing approaches
- 1.3. Towards a solution

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Wrong, it does!

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maxim of Relation

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2.1. Translation into logic

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- (3) a. John came, or Mary, or John and Mary. $p \vee q \vee (p \wedge q)$
b. John came. p
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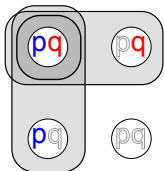
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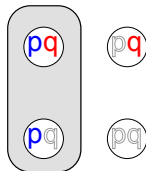
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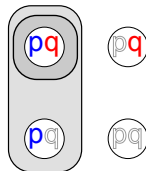
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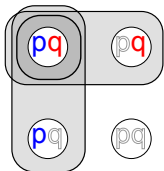
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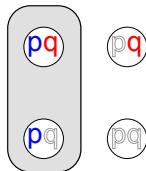
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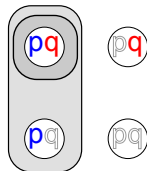
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Entailment

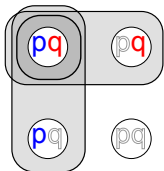
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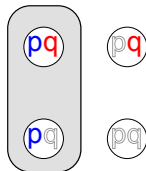
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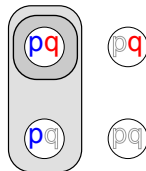
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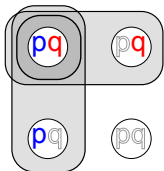
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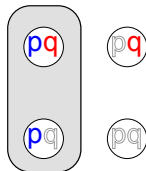
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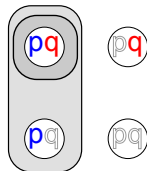
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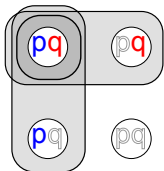
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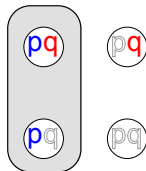
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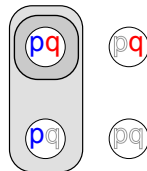
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Now, (3c) \models (3a), but (3b) $\not\models$ (3a).

2.3. Pragmatics

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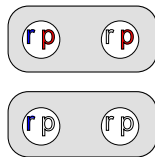
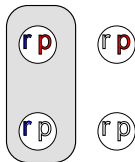
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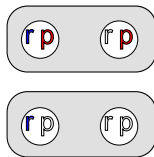
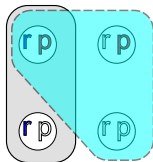
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For a cooperative speaker with information s , responding R to Q :

1. **Quality:** $s \subseteq \cup R$.
2. **Quantity:** For all $Q' \subseteq Q$, if $s \subseteq \cup Q'$ then $\cup R \subseteq \cup Q'$.
3. **Relation:** $\{r \cap s \mid r \in R\} \models Q$.

- (4) Did John go to the party?
It was raining.



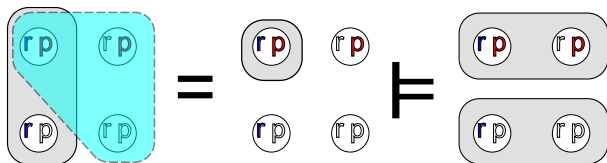
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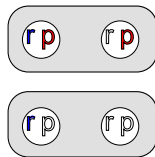
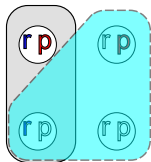
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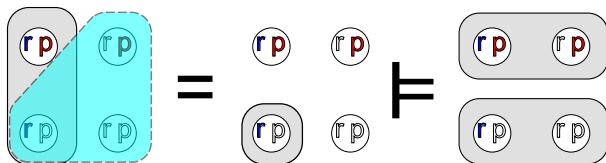
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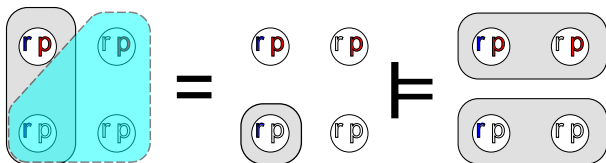


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- (4) Did John go to the party?
It was raining. \rightsquigarrow If it rained, John {went / didn't go}.



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3. Results

3.1. Examples

3.2. Formal results

3.3. And more conceptually...

3.1. Examples

(3) a. John came, Mary came, or both came ($p \vee q \vee (p \wedge q)$)

b. John came. (p)

c. John came, or Mary and John. ($p \vee (p \wedge q)$)

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(3) a. John came, Mary came, or both came ($p \vee q \vee (p \wedge q)$)

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c. John came, or Mary and John. ($p \vee (p \wedge q)$)

1. $s \subseteq |p \vee (p \wedge q)|$

(Quality)

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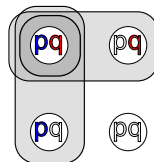
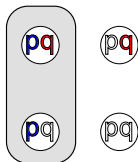
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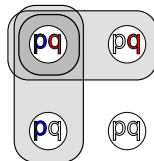
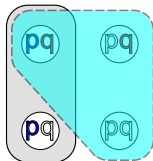
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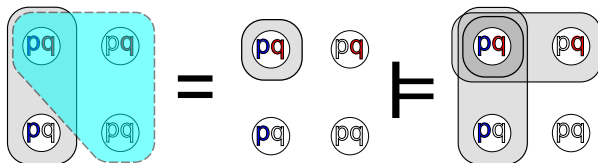
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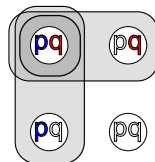
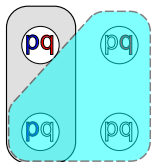
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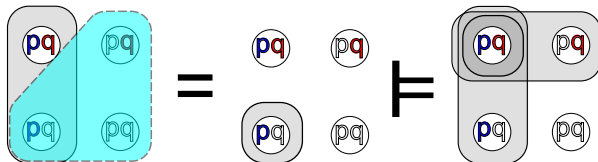
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3. $s \subseteq \overline{|p|} \cup |q|$ or $s \subseteq \overline{|p|} \cup \overline{|q|}$ (Relation)

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4. $s \subseteq |\overline{q}|$ exhaustivity!

$$p \neq p \vee q \vee (p \wedge q)$$

c. John came, or Mary and John. ($p \vee (p \wedge q)$)

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3. - (Relation)

$$p \vee (p \wedge q) \neq p \vee q \vee (p \wedge q)$$

3.2. Formal results

Recall: A entails Q , $A \models Q$, iff

(i) $\cup A \subseteq \cup Q$; and

(ii) for all $q \in Q$, $q \cap \cup A = \emptyset$ or $q \cap \cup A \in A$

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Recall: A entails Q , $A \models Q$, iff

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Relation implicature for singleton answer

And if responding $\{a\}$ to Q for some $a \in Q$:

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Main conclusion:

- ▶ If pragmatic reasoning is sensitive to *attentive content* (which it must be, to distinguish between (3b) and (3c));
- ▶ then *exhaustivity is a conversational implicature*.

4. Discussion

- 4.1. 'Alternatives'
- 4.2. Semantics
- 4.3. Semantic desiderata
- 4.4. 'Gricean' ?
- 4.5. Grice vs. grammar
- 4.6. Other maxims of Relation
- 4.7. Relatedness and knowledge
- 4.8. Logical relatedness

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Beware:

- ▶ These 'alternatives' are fully determined by the maxims.
- ▶ Speakers need not reason in terms of alternatives.

4.2. Semantics

Restriction

A restricted to b , $A_b := \{a \cap b \mid a \in A, a \cap b \neq \emptyset\}$

Semantics (Roelofsen, 2011)

1. $[p]$ = $\{\{w \in \mathbf{Worlds} \mid w(p) = \text{true}\}\}$
2. $[\neg\varphi]$ = $\{\overline{U[\varphi]}\}$ if $\overline{U[\varphi]}$ is nonempty; \emptyset otherwise.
3. $[\varphi \vee \psi]$ = $([\varphi] \cup [\psi])_{|\varphi| \cup |\psi|} = [\varphi] \cup [\psi]$
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- ▶ *Unrestricted Inquisitive Sem.* (Ciardelli, 2009; Westera, 2012)

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Attentive semantics is not the only suitable semantics:

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Minimally, the semantics must lack the *absorption laws*:

- ▶ Absorption: $p \vee (p \wedge q) \equiv p \equiv p \wedge (p \vee q)$

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(cf. Groenendijk and Stokhof, 1984; cf. 'mention-some').
- ▶ Wh-words are existential quantifiers over sets.

4.4. 'Gricean'?

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Besides: this is the only way.

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Response:

- ▶ Grice *can* do it; and the grammatical approach needs him.

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(4) Did John go to the party?

It was raining. \rightsquigarrow If it rained, John {went / didn't go}.

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Within a world, everything is related.

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Just as [logical consequence] rules the validity of argumentation, [logical relatedness] rules the coherence of information exchange.

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Logical consequence is logical relatedness.

End of Part I

Two puzzles

(1) Of John, Bill and Mary, who came to the party?

a. John came ↘. \leadsto Mary and Bill didn't.

b. John came ↗.

\leadsto ...wait, there's more.

\leadsto ...perhaps that implies sth. about M&B?

\leadsto ...but I'm not sure.

\leadsto ...did I make myself clear?

▶ Part I

▶ Part II

Part II

5. Analysis
6. Results
7. Discussion

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(1) Of John, Bill and Mary, who came to the party?

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↪ ...wait, there's more.

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c. John came ↗ ^H.

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(1) Of John, Bill and Mary, who came to the party?

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↪ ...wait, there's more.

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(Quantity)

c. John came ↗ H .

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1. The final rise marks the violation of a maxim.

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1. The final rise marks the violation of a maxim.
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This proposal is new in its generality, not in spirit.

6. Results

6.1. Example

6.2. Formal results

6.3. General results

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(Except in sarcastic pretense)

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(i) $s \subseteq \overline{UA} \cup UQ$; and

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And if responding $\{a\}$ to Q for some $a \in Q$:

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Quantity violation

For some $Q' \subseteq Q$, $s \subseteq \cup Q'$ and $\cup R \not\subseteq \cup Q'$.

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The enabling innovation is the 'attentive' maxim of Relation.

7. Discussion

- 7.1. Evoked questions
- 7.2. Other uses of the rise
- 7.3. Objective/subjective cooperativity

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It was raining \nearrow^L . \leadsto *Does he like rainy parties?*

He only likes rainy parties \nearrow^L ? \leadsto *Was it raining?*

Connecting this to the literature is a work in progress.

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Contrastive topic (Büring, 2003):

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Future work!

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But an account based on *objective* maxims would also work:

- ▶ Final rise: 'For some maxim, I'm not sure whether or how I comply with it'.

End of Part II

General conclusion

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Part II:

- ▶ If, furthermore, the final rise conveys the violation of a maxim
- ▶ then the many readings of the final rise are predicted.

The End

Articles

- ▶ *Exhaustivity through the maxim of Relation*
(LENLS proceedings, see staff.science.uva.nl/~westera/)
- ▶ *'Attention, I'm violating a maxim!'*
(submitted, available through me)

Thanks to the *Netherlands Organisation for Scientific Research* (NWO) for financial support; to F. Roelofsen, J. Groenendijk, C. Cummins, K. Von Fintel, A. Ettinger, J. Tyler, M. Križ, the audiences of *SemDial*, *S-Circle* (UCSC), *SPE6*, *ICL*, *CISI*, *ESSLLI*, *StuS*, *LIRA*, and many anonymous reviewers for valuable comments.

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Chierchia, *et al.* (2008), and much subsequent discussion

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The 'embedded' implicature of (6) is in fact predicted.

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