Attentive Pragmatics: An Account of Exhaustivity and the Final Rise

Matthijs Westera

Institute for Logic, Language and Computation
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ESSLLI Student Session, August 9th 2013

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An implicature, the supposition of which is necessary for maintaining the assumption that the speaker is cooperative.

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Wrong, it does!

Outline

1. Diagnosis
2. Theory
3. Predictions
4. Conclusion
5. Related concepts and puzzles

1. Diagnosis

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maxim of Relation

2. Theory

2.1. Translation into logic

(3) a. Which colours (among red, green and blue) does John like?

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(3) a. John likes blue, red, or blue and red. $p \vee q \vee (p \wedge q)$

b. He likes blue. p

c. He likes blue, or blue and red. $p \vee (p \wedge q)$

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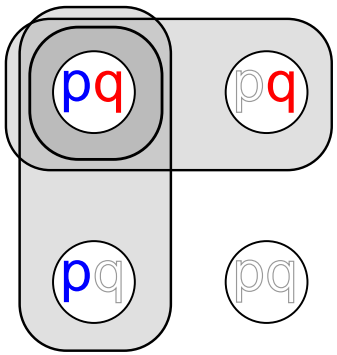
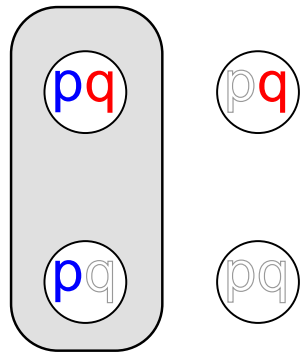
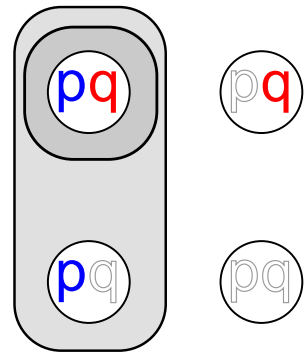


(3a) $[p \vee q \vee (p \wedge q)]$



(3b) $[p]$



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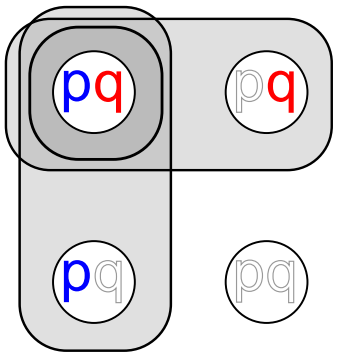

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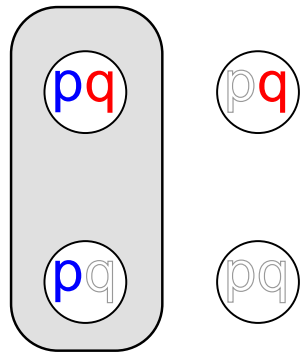

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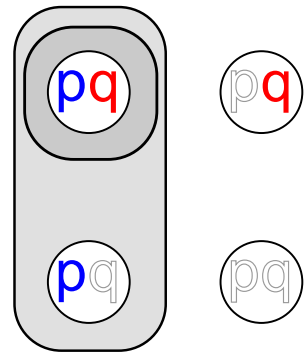

(3c) $[p \vee (p \wedge q)]$

Entailment

A entails B, $A \models B$, iff

(i) $\bigcup A \subseteq \bigcup B$; and

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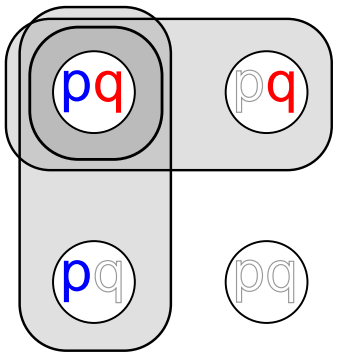

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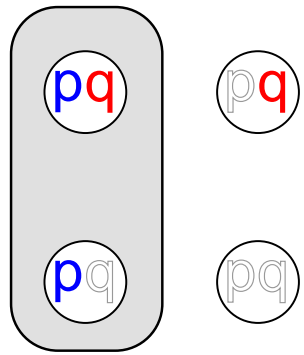

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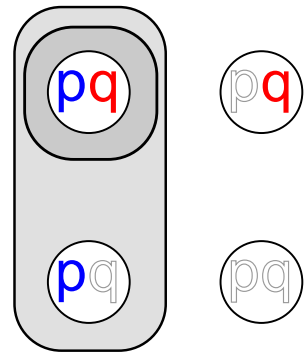

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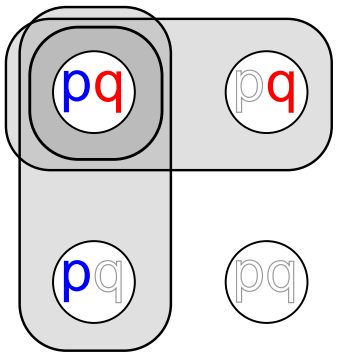

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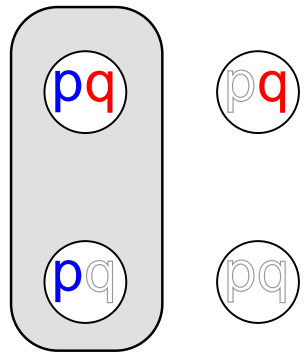

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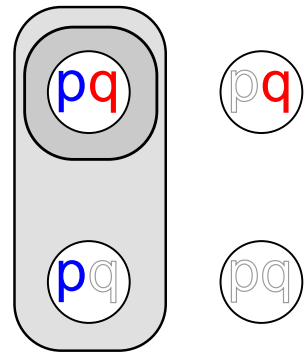

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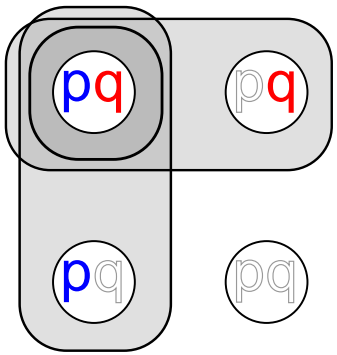

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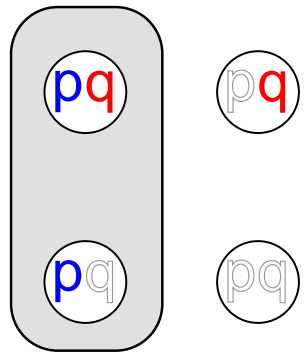

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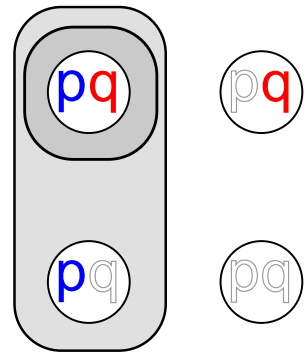

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Now, (3c) $\vDash$ (3a), but (3b) $\nvDash$ (3a).

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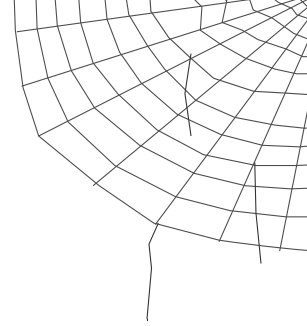

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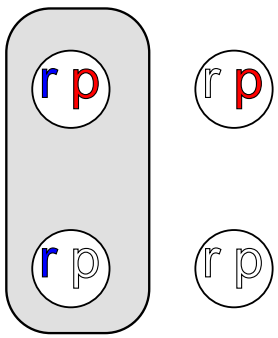

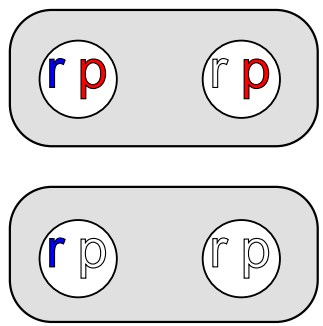

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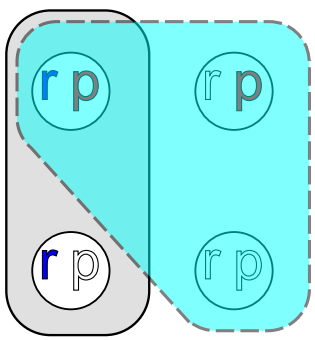

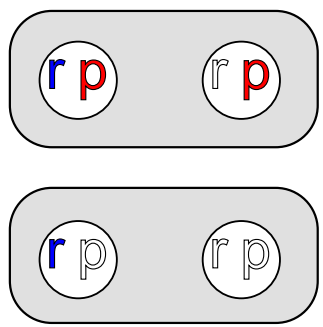

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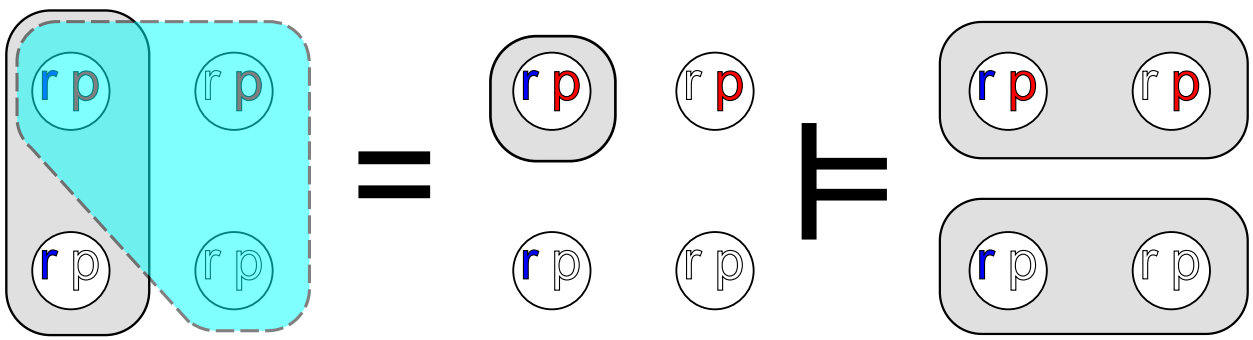

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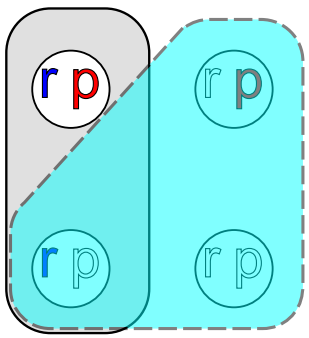

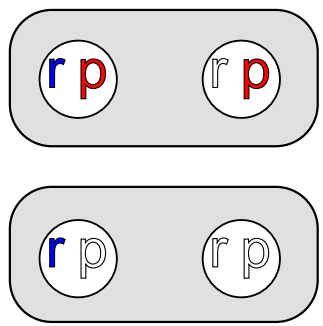

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1. **Quality**: $s \subseteq \bigcup R$.
2. **Quantity**: For all $Q' \subseteq Q$, if $s \subseteq \bigcup Q'$ then $\bigcup R \subseteq \bigcup Q'$.
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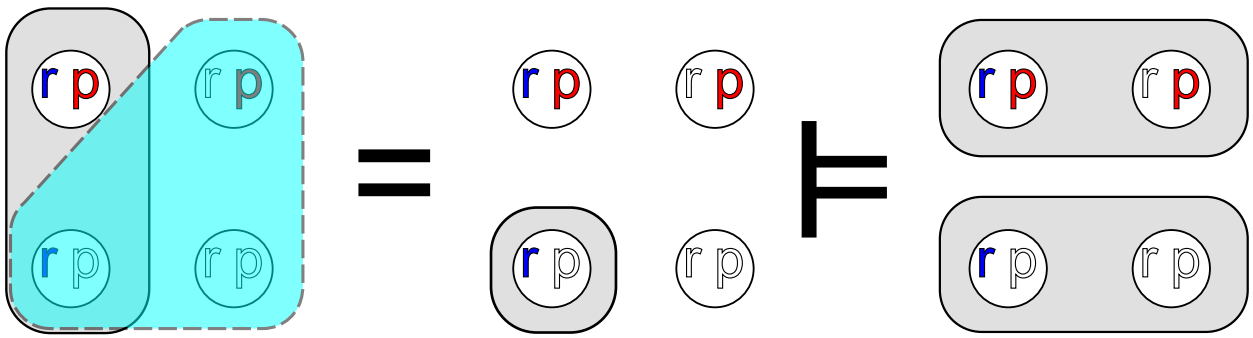
(4) Did John go to the party?
It was raining.



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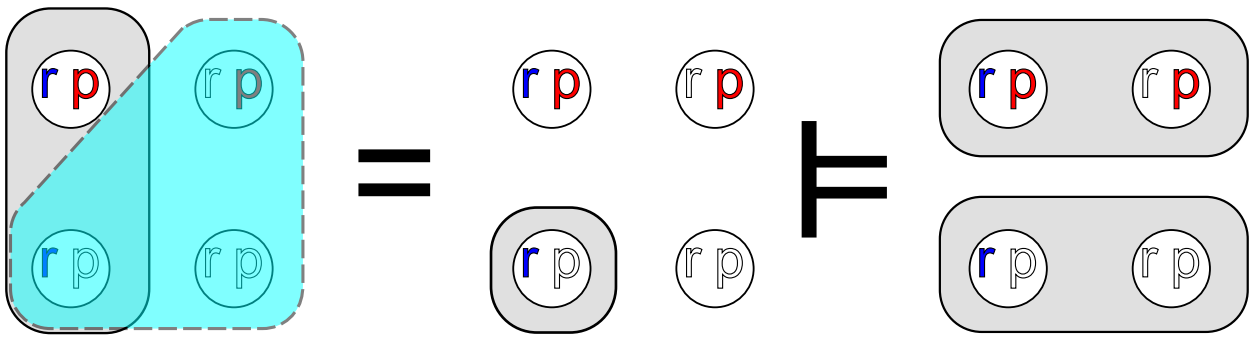
It was raining. $\rightsquigarrow$ If it rained, John {went / didn't go}.



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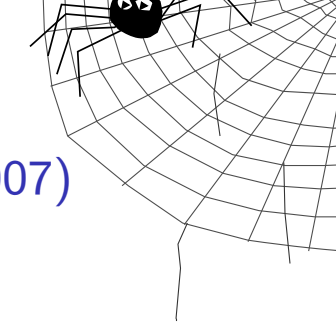

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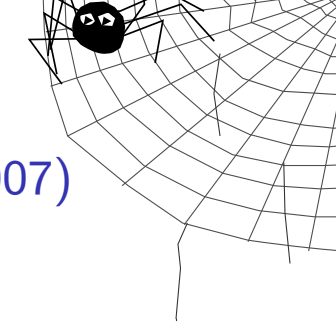

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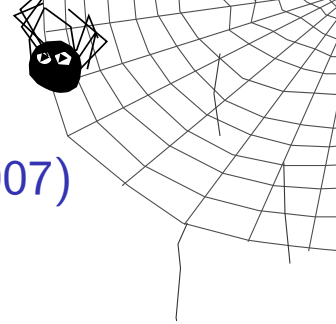

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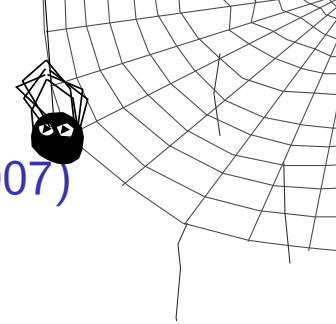

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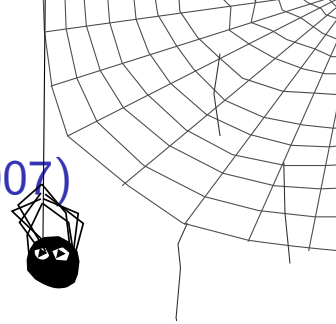

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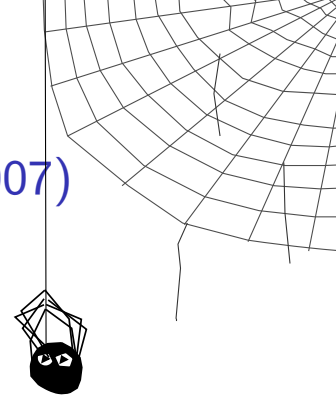

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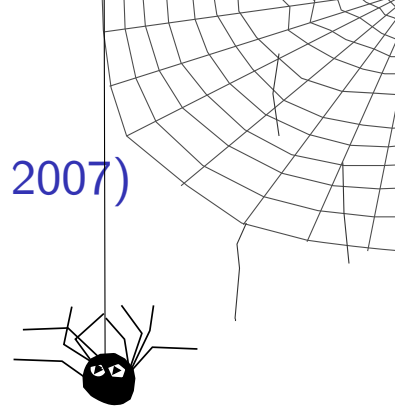

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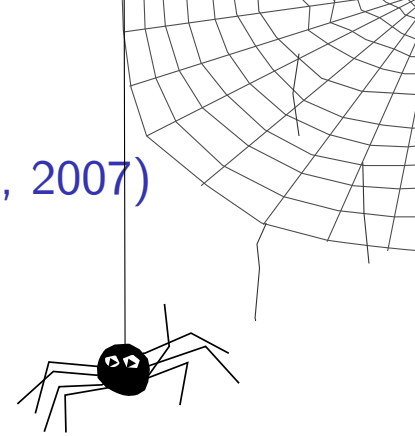

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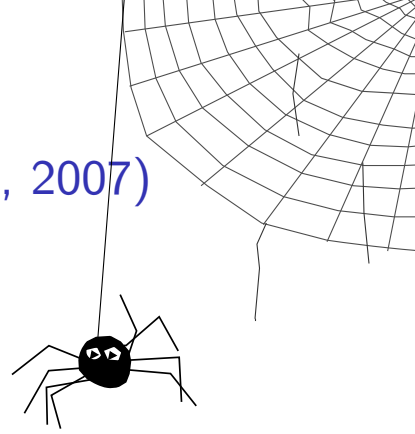

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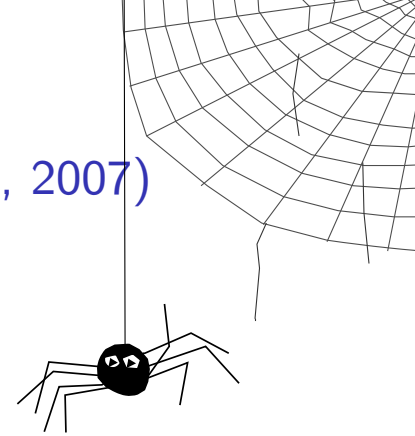

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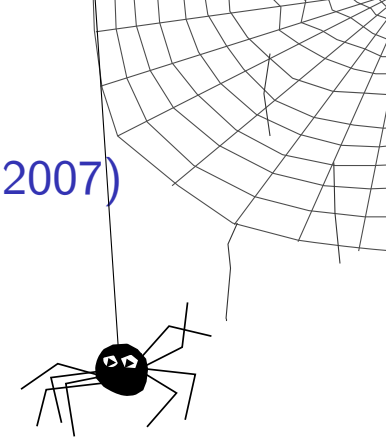

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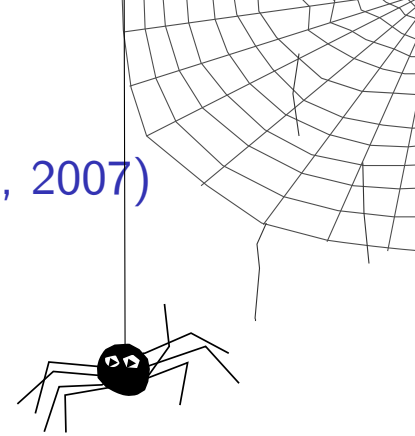

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(3) a. John likes blue, red, or blue and red. $(p \vee q \vee (p \wedge q))$

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c. He likes blue, or blue and red. $(p \vee (p \wedge q))$

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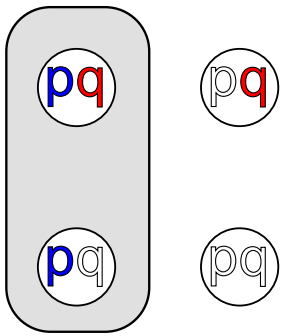

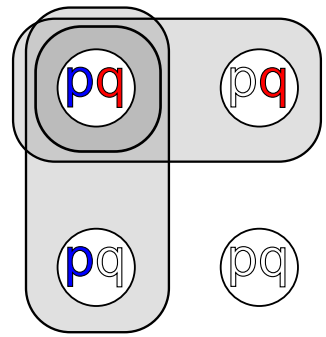

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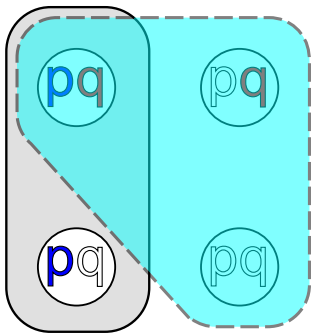

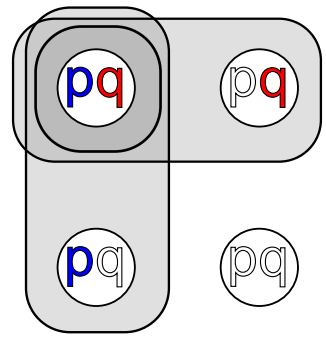

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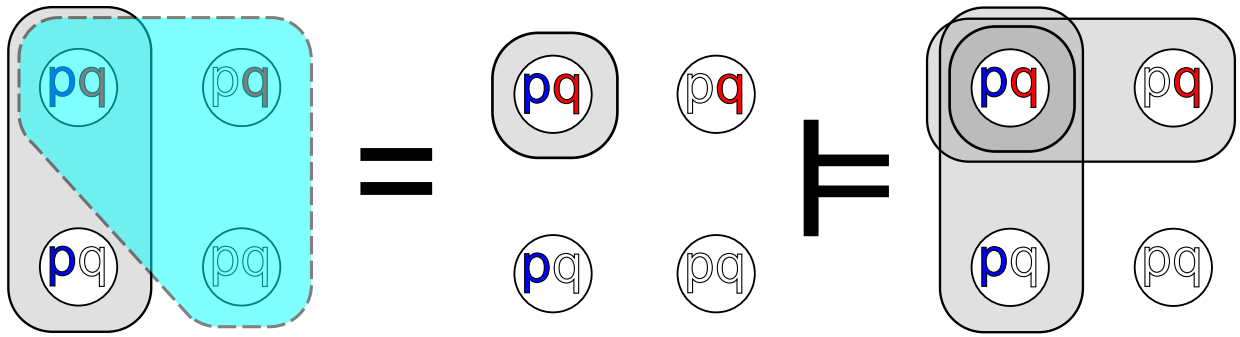

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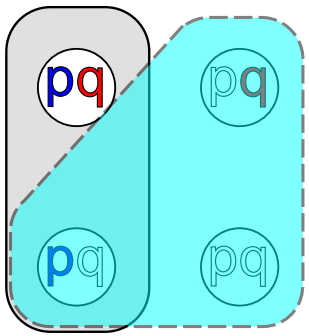

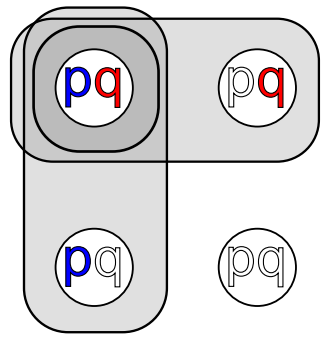

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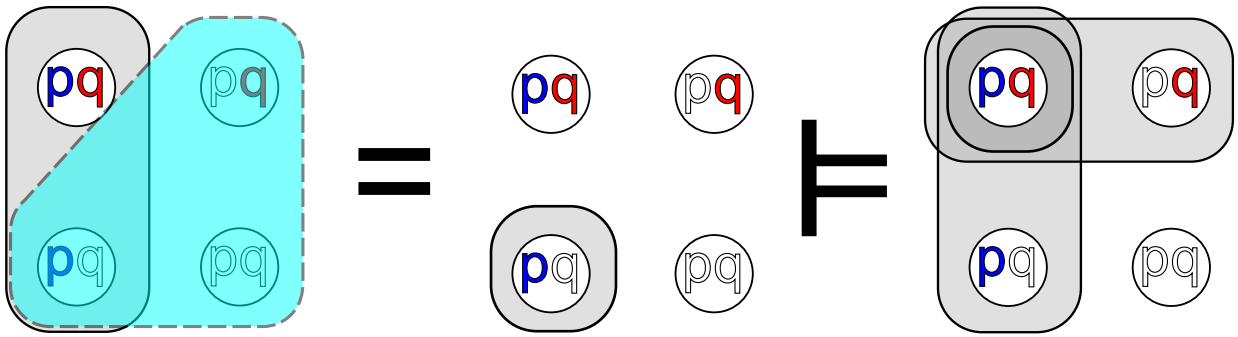

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4. $s \subseteq \overline{|q|}$ exhaustivity!

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- then the epistemic step follows from the cooperative principle.

Take-home messages:

- Pragmatic reasoning is sensitive to attentive content.
- *Exhaustivity implicatures are conversational implicatures*.

5. Related concepts and puzzles

5.1. The opinionatedness assumption

Most existing work (Sauerland, 2004):

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Counterexample:

(5) I'm asking the wrong person, but which colours does J. like?
He likes blue. $\rightsquigarrow$ He doesn't like red.

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Counterexample:

(5) I'm asking the wrong person, but which colours does J. like?
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Instead, in my approach:

- Opinionatedness follows from Quality + Relation implicatures

5.2. 'Alternatives'

Existing approaches (since Gazdar, 1979?):

- 'Why did the speaker not say "$p \wedge q$"?'

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More take-home messages

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

5.3. 'Embedded' implicatures

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

(6) Which books did every student read?
Every student read O. or K.L. $\rightsquigarrow$ No student read both.

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

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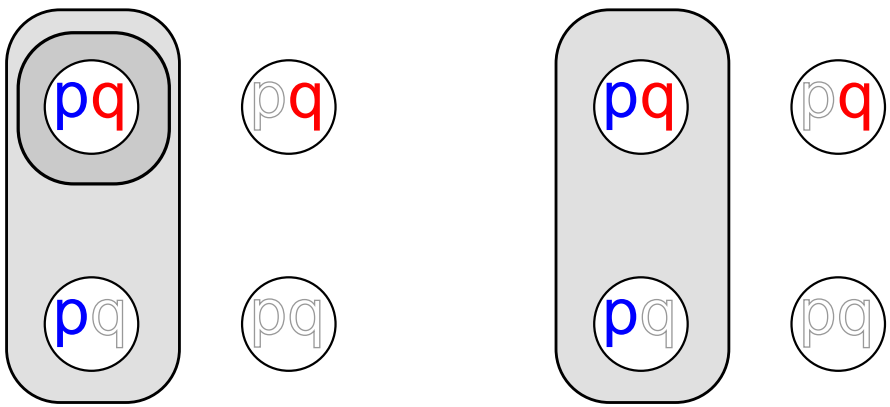

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Article

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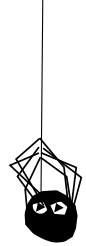

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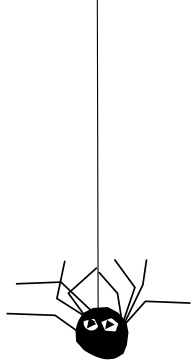

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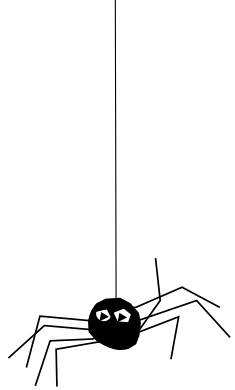

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Appendix A. Semantics (Roelofsen, 2011)

Ingredients

- *Possibility*: a set of worlds (a, b)
- *Proposition*: a set of possibilities $(A, B, [\varphi])$
- *Informative content*: $|\varphi| := \bigcup[\varphi]$
- *A restricted* to b, $A_b := \{a \cap b \mid a \in A, a \cap b \neq \varnothing\}$

Semantics of relevant fragment

1. $[p] = \{\{w \in \textbf{Worlds} \mid w(p) = \text{true}\}\}$
2. $[\varphi \vee \psi] = ([\varphi] \cup [\psi])_{|\varphi| \cup |\psi|} = [\varphi] \cup [\psi]$
3. $[\varphi \wedge \psi] = ([\varphi] \cup [\psi])_{|\varphi| \cap |\psi|}$

Entailment

A entails B, $A \vDash B$, iff (i) $\bigcup A \subseteq \bigcup B$ and (ii) $B_{\bigcup A} \subseteq A$.

Appendix B. Roberts's (1996) 'relevance'

- 'My' Maxim of Relation: $R_s \vDash Q$
- Roberts's *relevance*: $R_{CG} \vDash Q$ (CG = Common Ground)

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- They need only be able to *figure it out*.

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E.g., in case of exhaustivity:

1. $s \subseteq |p|$ (Quality)
2. $s \nsubseteq |q|$ (Quantity)
3. $s \subseteq \overline{|p|} \cup |q|$ or $s \subseteq \overline{|p|} \cup \overline{|q|}$ (Relation)

---

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

Appendix C. The final rise

(7) Which colours (among red, green and blue) does John like?
He likes blue↗.

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Appendix D. 'Gricean'?

"that there are, or appear to be, divergences in meaning between, on the one hand, [...] the FORMAL *devices -* $\neg, \wedge, \vee$*,[...] and, on the other, [...] their analogs or counterparts in natural language - such expressions as not, and, or, [...]"* (Grice, 1975)

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- The semantics treats informative content classically.
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- Also for att. content, the connectives are algebraically 'basic'.

Besides: this is the only way.

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