Explaining exhaustivity in terms of Attentional Quantity

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Aim: a better account of exhaustivity

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Aims of this talk:

- discuss five serious problems for the standard recipe;
- show how the attention-based account easily solves them.

Problems for the standard recipe

Standard recipe: for some relevant, non-asserted alternative φ:

- $\neg\Box\varphi$ (maxim of I-Quantity)
- $\Box\varphi \vee \Box\neg\varphi$ (competence/opinionatedness assumption)
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Except insofar as problem E seems to involve embedded exh.

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1. “Destructive” problems (A,B,C)
2. “Constructive” problems (D,E)
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Purported evidence *for* reliance on competence assumption:

(Soames 1982)

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(Discussion?)

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This works for *any* account of exh. that bypasses I-Quantity.

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Kroch, 1972 (a.o.):

- If relevance is symmetrical (closed under negation),
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Given this, there may not even be a symmetry problem here:

(9) Q: Who (of John, Mary and Bill) was at the party?
A: John and Mary.

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Now what could this strategic question be? and why?

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(11) Q: I need to know (of these five people here) who was present and who was absent.
A: John was present, and Mary was present.
Q: Wow, only two?! That's disappointing!

Solution:

- A split the prior question into:
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In sum: the symmetry problem solves the symmetry problem.

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1. “Destructive” problems (A,B,C)
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(Discuss: is exh. on questions and assertions the same phenomenon?)

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- Hurford 1974; Katzir & Singh 2013.)

2.3. Interim summary

Problems:

A. Exhaustivity without a competence assumption;

B. Exhaustivity without I-Quantity (quiz);

C. The symmetry problem;

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- D and E point to a new recipe based on *A-Quantity*.

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- The starting point for the standard recipe.

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A-maxims: For an attentional intent $\mathcal{A}$ and a QUD $\mathcal{Q}$:

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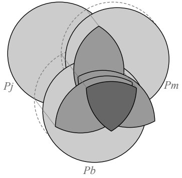

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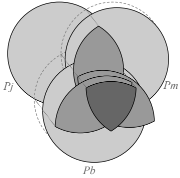

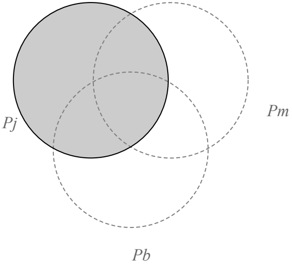

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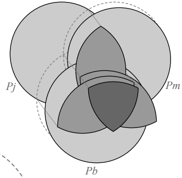

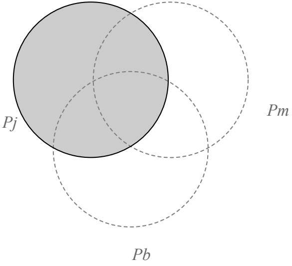

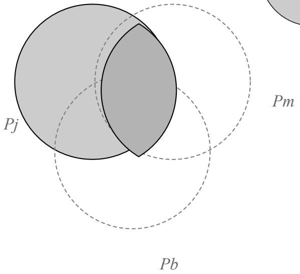

3.3. Illustration of A-maxims

(13) a. John. *(Exh.: not Mary or Bill.)*
b. John, or both John and Mary. *(Exh.: not Bill.)*
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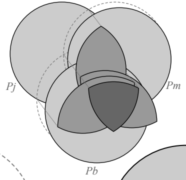

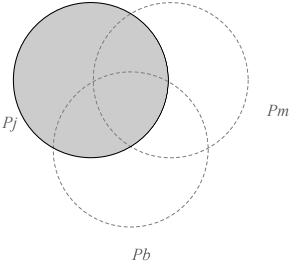

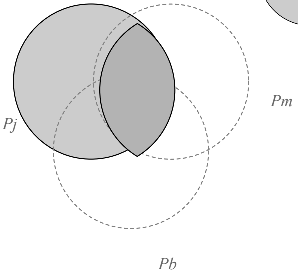

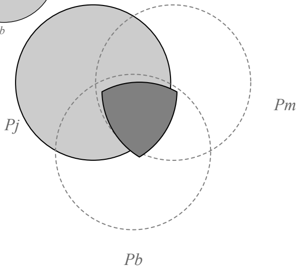

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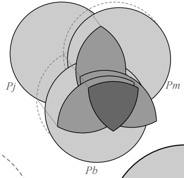

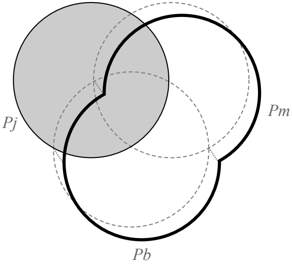

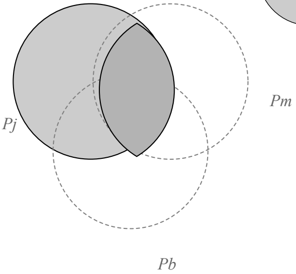

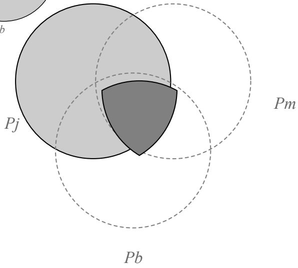

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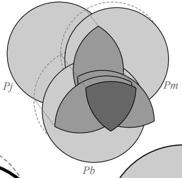

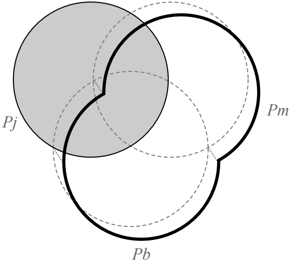

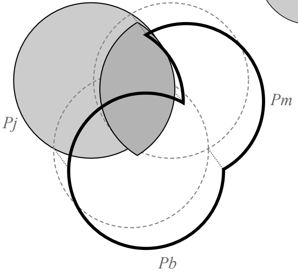

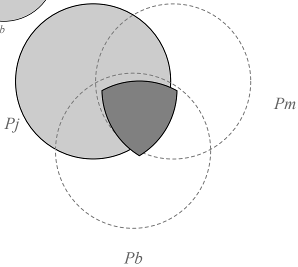

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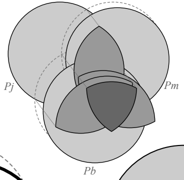

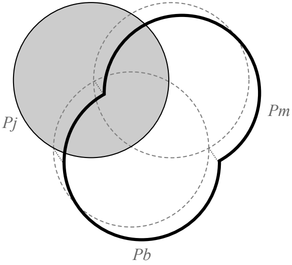

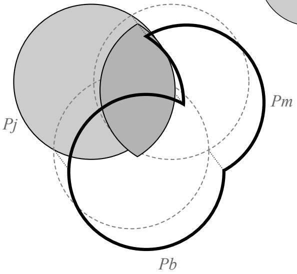

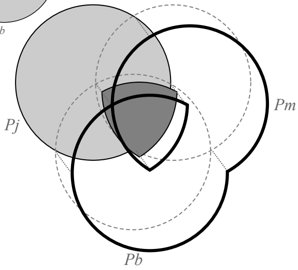

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Repeated:

$$\text{A-Quantity}(\mathcal{Q}, \mathcal{A}) = \forall a \begin{pmatrix} (\mathcal{Q}(a) \wedge \neg \mathcal{A}(a)) \rightarrow \\ \Box \begin{pmatrix} \neg {}^{\vee} a \vee \\ \exists b (\mathcal{A}(b) \wedge (b \subset a) \wedge {}^{\vee} b) \end{pmatrix} \end{pmatrix}$$

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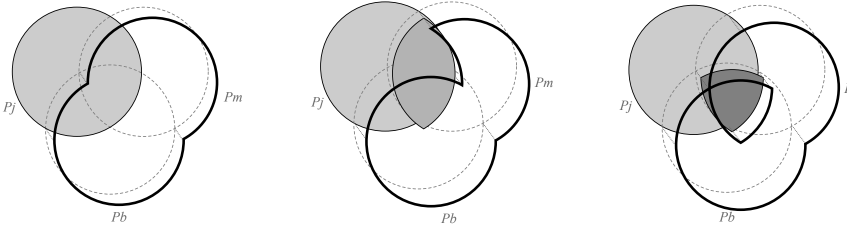

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Alternative, equivalent definition:

$$\textsc{Exh}(\mathcal{Q},\mathcal{A}) = \bigcap_{\substack{a \in \mathcal{Q} \\ a \notin \mathcal{A}}} (\overline{a} \cup \bigcup_{\substack{b \in \mathcal{A} \\ b \subset a}} b)$$

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- my account makes very different predictions (e.g., problems A, B, D

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As technical devices our operators are very close, but again:

- explanatorily our accounts are very different;
- and empirically they make very different predictions.

Outline

1. "Destructive" problems (A,B,C)
2. "Constructive" problems (D,E)
3. Formal, attention-based account
4. Discussion

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- governed by the A-maxims;
- exhaustivity derives from A-Quantity:
  - "intend to draw attention to all relevant propositions that you consider possible independently of anything stronger to which you intend to draw attention."
- the predicted implications are technically similar to the patterns described by (some) existing operators.

4.2. Is this what rationality looks like?

$$\text{I-Quality}(p) = \Box^{\vee} p$$

$$\text{I-Relation}(\mathcal{Q}, p) = \mathcal{Q}(p)$$

$$\text{I-Quantity}(\mathcal{Q}, p) = \forall q \left(\begin{pmatrix} \text{I-Quality}(q) \wedge \\ \text{I-Relation}(\mathcal{Q}, q) \end{pmatrix} \rightarrow (p \subseteq q) \right)$$

$$\text{A-Quality}(\mathcal{Q}, \mathcal{A}) = \forall a \, (\mathcal{A}(a) \rightarrow \Diamond({}^{\vee} a \wedge \forall b \, ((\mathcal{Q}(b) \wedge b \subset a) \rightarrow \neg^{\vee} b)))$$

$$\text{A-Relation}(\mathcal{Q}, \mathcal{A}) = \forall a (\mathcal{A}(a) \rightarrow \mathcal{Q}(a))$$

$$\text{A-Quantity}(\mathcal{Q}, \mathcal{A}) = \forall a \left(\begin{pmatrix} \text{A-Quality}(\{a\}) \wedge \\ \text{A-Relation}(\mathcal{Q}, \{a\}) \end{pmatrix} \rightarrow \mathcal{A}(a) \right)$$

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