(Innocent?) Bias in Argumentation

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When people observe intentional behavior, we assume that they attempt to understand it as implementing a plan intended to achieve some outcome.
(Jara-Ettinger, Schulz, and Tenenbaum 2020, p. 2)

Introduction I

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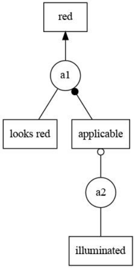

Legend
Circled a1,a2: arguments
Boxed items: premises
Arrow: support
Closed-dot arrows: presumptions
Open-dot arrows: attack
From (Gordon and Walton 2006)

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  2. *No idea* $\Rightarrow$ We cannot attribute to B the intention of *implying* that Paul could come.
  3. B *mentions* ($\neq$ endorses) a possible reason for believing that Paul could come.

Introduction III

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Paul is tall but (less/??taller) than his sister.
Paul is tall, (less/??taller) than his sister however.
Paul is tall, although he is (less/??taller) than his sister.
Paul read some of the papers but not all.
Paul read some of the papers, not all of them however.
Paul read some of the papers, not all of them, though.
Paul walked but (not very far/??very far).
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  1. Bayesian dependency.
  2. Not just Bayesian dependency (Utility).

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> E (evidence) confirms H (hypothesis) in K (common knowledge) iff $C(E, H, K) > 0$ for some confirmation measure C.
> (Adapt for disconfirmation and irrelevance)

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- Probabilities can be discretized (orderings for events)

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  3. Role of K?

Probability change I

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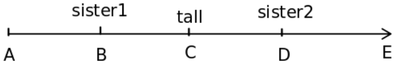

[tall] & [taller than sister]/[tall] compared to [taller than sister]

$$|CE|/|CE| > |BE|/|AE| \text{ (sister1)}$$

$$|DE|/|CE| > |DE|/|AE| \text{ (sister2)}$$

Probability change II

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- Probabilistic change operates only at the at-issue level (Dargnat and Jayez 2020; Ducrot 1972; Jayez 2005; Winterstein 2013) ⇒ no redundancy between the implicature and the *but* clause.

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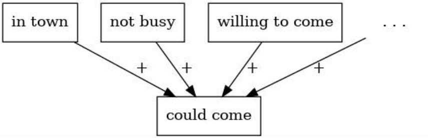

Probability change IV

- Two possibilities on initial situation: no condition holds (A) or at least one condition obtains (B). (Go back)

A **B**

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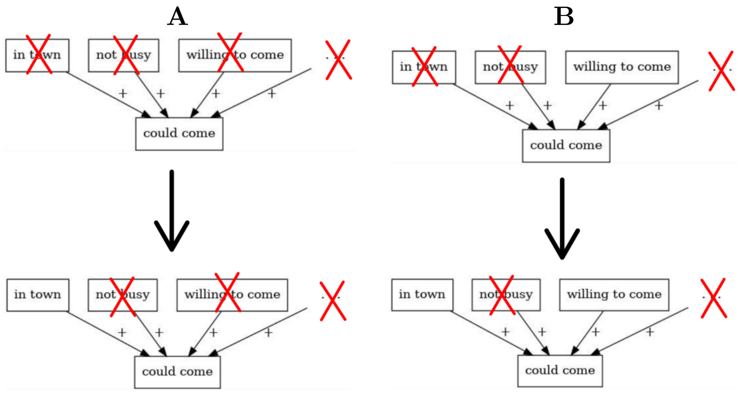

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- **If** [rain] $\rightsquigarrow$ [garden wet] **and** [garden wet] $\Rightarrow$ [rain], **then** [garden wet] $\rightsquigarrow$ [rain] & [cats in the garden].

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> If$_a$ the garden is wet (E) probably because it has been raining (H) and if$_b$, under the assumption$_c$ that it has been raining and there are cats in the garden, then$_c$ it has been raining,
> then$_{a,b}$ the fact that the garden is wet confirms that it has been raining and there are cats in the garden.

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Hitchcock 1996

$C(H_1, H_2, E) =_{\text{df}} \mathsf{Pr}(H1|H2) = 0$ and $\mathsf{Pr}(H_1|E \;\&\; (H_1 \vee H2)) > \mathsf{Pr}(H_1|\neg E \;\&\; (H_1 \vee H2))$
But,
$\mathsf{Pr}([\text{cats}]|[\text{wet}] \;\&\; [[\text{cats}] \vee [\text{no cat}]]) \not> \mathsf{Pr}([\text{cats}]|[\neg\text{wet}] \;\&\; [[\text{cats}] \vee [\text{no cat}]])$

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red = assumptions
blue = probability calculus

$$\dfrac{\dfrac{\dfrac{\dfrac{\dfrac{\mathrm{Pr}(H|E) > \mathrm{Pr}(H)}{\mathrm{Pr}(E|H)\mathrm{Pr}(H)/\mathrm{Pr}(E) > \mathrm{Pr}[H]}}{\mathrm{Pr}(E|H)/\mathrm{Pr}(E) > 1}}{\mathrm{Pr}(E|H) > \mathrm{Pr}[E]} \quad \dfrac{\dfrac{\dfrac{\mathrm{Pr}(H|H+) = 1 \quad \mathrm{Pr}(E|H \mathbin{\&} H+) = \mathrm{Pr}(E|H)}{\mathrm{Pr}(E|H+) = \mathrm{Pr}(E|H)} \quad \mathrm{Pr}(H+|E) = \mathrm{Pr}(E|H+)\mathrm{Pr}(H+)/\mathrm{Pr}(E)}{\mathrm{Pr}(H+|E) = \mathrm{Pr}(E|H)\mathrm{Pr}(H+)/\mathrm{Pr}(E)}}{\mathrm{Pr}(H+|E)\mathrm{Pr}(E) = \mathrm{Pr}(H+)\mathrm{Pr}(E|H)}}{\mathrm{Pr}(H+|E) > \mathrm{Pr}(H+)} \quad C(B,A) \text{ iff } \mathrm{Pr}(B|A) > \mathrm{Pr}(B)}{C(H+,E)}$$

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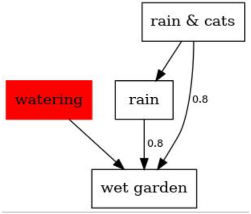

$\mathsf{Pr}([\text{watering}]) = 0$
$\mathsf{Pr}([\text{rain}]|[\text{wet garden}]) = x$
$\mathsf{Pr}([\text{rain}]) = y$
$y < x, 0 < y < 1$
$\mathsf{Pr}([\text{rain}]|[\text{rain } \& \text{ roses}]) = \mathsf{Pr}([\text{rain}]|[\text{rain}]) = 0.8$

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- Systems without left and/or right weakening (Restall 2000; Sperber and Wilson 1986).

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Observing an event C
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(reward1 + cost c1)
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$$\left.\begin{array}{l} \text{c1} < \text{c2} \\ \Pr(C|A \,\&\, B) = \Pr(C|A) \end{array}\right\} \Rightarrow \begin{array}{c} \langle\text{reward1,cost1}\rangle \\ \text{preferred over} \\ \langle\text{reward2,cost2}\rangle \end{array}$$

Utility II

- A new version of the birthday party example.

(2) **Context**: A wants to know whether Paul intends to join his birthday party. It's vacation time, so Paul is perhaps not in town.

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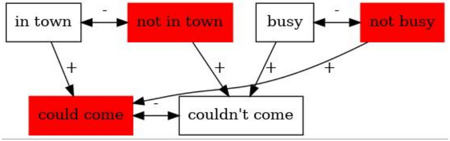

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4. So, what does B's answer amount to?

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goal: explain ¬[could come]	
reward	**cost**
explain by [busy]	process
exclude ¬[in town]	process
only if [in town] relevant to [could come]	

Conclusion

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- What about ‘sophisticated’ argumentation (analogy, schemes, etc.)?

Thank you !

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