

REASONS TO BELIEVE AND REASONS TO NOT

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1 AGM and evidential relevance

Two intuitive principles:

(RS) If $B \notin K$, then $A \triangleright B \in K$ iff $B \in K * A$

(RU) If $B \in K$, then $A \triangleright B \in K$ iff $B \notin K * A$

1st attempted strengthening:

(Sup-) $A \triangleright B \in K$ iff $B \in K * A$

(Und-) $A \triangleright B \in K$ iff $B \notin K * A$

But (Sup-) and (Und-) respectively entail:

(STriv) If $A, B \in K$, then $A \triangleright B \in K$

(UTriv) If $A \in K$ and $B \notin K$, then $A \triangleright B \in K$

2nd attempted strengthening:

(Sup) $A \triangleright B \in K$ iff $B \in (K \dot{-} B) * A$

(Und) $A \triangleright B \in K$ iff $B \notin (K * B) * A$

Good news:

- (Sup) entails (RS) and is inconsistent with (STriv) on pairs of triviality
- (Und) entails (RU) and is inconsistent with (UTriv) on pairs of triviality

2 Transmission principles and their failure

2.1 Support and right-weakening

A right-weakening principle for support:

(RW) If $C \in \text{Cn}(B)$ and $A \triangleright B \in K$, then $A \triangleright C \in K$

(RW) is implausible:

Zebra: $A_Z =$ It's a B&W striped equidae; $B_Z =$ It's a zebra; $C_Z =$ It's not a painted mule

Here: $C_Z \in \text{Cn}(B_Z)$, but intuitively: (i) $A_Z \triangleright B_Z \in K$, and (ii) $A_Z \triangleright C_Z \notin K$

A plausible restricted right-weakening principle:

(RRW) If $C \in \text{Cn}(B)$ and $A \triangleright B \in K$, then $A \triangleright C \notin K$ iff $A \triangleright B \notin K \dashv C$.

Good news: (Sup) entails (RRW). Further bad news for (Sup-): (Sup-) entails (RW).

2.2 Undermining and right-strengthening

A right-strengthening principle for undermining:

(RS) If $B \in \text{Cn}(C)$ and $A \triangleright B \in K$, then $A \triangleright C \in K$

(RS) is implausible:

Archer: $A_A =$ Najmeh missed the target; $B_A =$ Najmeh is a pro archer; $C_A =$ Najmeh is a pro archer but is not wearing her glasses

Here: $B_A \in \text{Cn}(C_A)$, but intuitively: (i) $A_A \triangleright B_A \in K_A$, and (ii) $A_A \triangleright C_A \notin K_A$

A plausible restricted right-strengthening principle:

(RRS) If $B \in \text{Cn}(C)$ and $A \triangleright B \in K$, then $A \triangleright C \in K$ iff $A \triangleright B \in K * C$

Good news: (Und) entails (RRS). Further bad news for (Und-): (Und-) entails (RS).

3 Defeaters

The Emmental example:

Emmental: $A_E =$ There's been a recent local seizure of counterfeit Swiss Emmental; $B_E =$ The label states that it's Swiss Emmental; $C_E =$ It's Swiss Emmental

(Und) and (Sup) jointly entail:

If (1) $B \triangleright C \in K$, (2) $A \triangleright (B \triangleright C) \in K$, (3) $C \notin K$ and (4) $A \triangleright C \notin K$, then $A \triangleright C \in K * B$.

The Self-Defeat example:

Self-Defeat: $A_R =$ John claims that his assertions are not generally reliable; $B_R =$ John's assertions are not generally reliable.

Here: $B_R \triangleright (A_R \triangleright B_R) \in K_R$ and (hence) $A_R \triangleright B_R \notin K_R$

(Und) and (Sup) jointly entail:

If $B \triangleright (A \triangleright B) \in K$, then $A \triangleright B \notin K$

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