The Central Thesis as Involving "Inference to the Best Explanation"

- The explanandum: (C) a set of independently formed cognitive states (of some agent a) S_1, S_2, \ldots, S_n are coherent (to some degree).
- Two competing explanations (independence of S_i favors R over CB):
- (CB) there is a coherence bias in a's S-formation process.
- (R) a's S-formation process is reliable.
- (*) If the reliability explanation R is "best", then this "enhances the credibility of" (confirms?) the S_i . What's the argument?
 - 1. $Pr(R \mid R \text{ is the best explanation of } C) > Pr(R)$
 - 2. $Pr(S_i \mid R) > Pr(S_i)$ [OK, but what about $\bigwedge_i S_i$?]
 - 3. : $Pr(S_i \mid R \text{ is the best explanation of } C) > Pr(S_i)$ [ditto]
- I'm willing to grant (ftsoa) that (1) and (2) are true. But, I don't see how (3) is supposed to follow. What are the missing premises?

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COMMENTS ON SHOGENJI'S "THE PROBLEM OF INDEPENDENCE IN JUSTIFICATION BY COHERENCE"

- Let coherence, be weak (i.e., logical) coherence, and coherence, be strong
- We have two clear facts: (i) T entails C_w , and (ii) C_s entails C_w .
- By "Truths are subject to a coherence constraint," the author means (at least) (iii) $Pr(C_s \mid T) > Pr(C_s)$. But, (iii) does not follow from (i) and (ii) alone.
- \therefore (b) $Pr(T \mid C_s) > Pr(T)$. So, by symmetry of Pr-raising, (c) $Pr(C_s \mid T) > Pr(C_s)$.
- This seems to show that T raises the probability that the B_i are correlated.

"Beliefs are Not a Good Candidate for Justification by Coherence"

- 1. Belief involves a commitment to truth.
- 2. Truths are subject to a coherence constraint (see next slide).
- 3. : Belief formation is subject to a coherence constraint.
- 4. ∴ Beliefs can be expected to be coherent (∴ not independently formed), and so no explanation is required for their coherence.
- 5. If no explanation is required for the coherence of beliefs, then no justification of beliefs by appeal to their coherence (e.g., via R being the "best explanation" of C) can get off the ground.
- 6. : Beliefs are not a good candidate for justification by coherence.
- **Dilemma**: Either (i) the "coherence" in (2) is a weak (e.g., logical) notion, or (ii) it is some stronger notion (e.g., non-trivial degree of positive Pr-correlation, as in Shogenji 1999). If (i), then (2) is clear, but (4) & (5) \Rightarrow (6). If (ii), then (4) & (5) \Rightarrow (6), but (2) is less clear.

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Relationships Between Truth and Two Kinds of Coherence

- coherence (i.e., a non-trivial degree of positive Pr-correlation).
- Let $T = \text{each member } B_i \text{ of belief set } \mathbf{B} \text{ is true (that is, } \bigwedge_i B_i), C_w = \mathbf{B} \text{ is}$ coherent_w (satisfiable), and $C_s = \mathbf{B}$ is coherent_s (B_i are Pr-correlated).
- Argument for (iii): (a) $Pr(\bigwedge_i B_i \mid C_s) > \prod_i Pr(B_i) \ge Pr(\bigwedge_i B_i \mid \neg C_s)$.
- This has odd consequences for confirmation theory. If E and H are both true, then this provides reason to think that E confirms H. So, we seem to have (a priori) reason to believe that any truth confirms any other truth. Is this right?

The Author's "Complexity Test" for Independence

- The author uses something like the following in his arguments motivating his "complexity test" for independence (this is almost a direct quote).
- (†) As the body of reliably formed beliefs grows more complex, a new appearance is more likely to cohere with existing beliefs if it is also reliably formed than if it is unreliably formed.
- This claim also seems to rely on a transitivity assumption. Let $\mathbf{B}' =$ the "union" of **B** and a newly formed appearance. T, C_w , and C_s are as before (but now regarding \mathbf{B}'), and $R = \text{all members of } \mathbf{B}'$ were reliably formed.
 - In (†), the author seems to be claiming that $Pr(C_s \mid R) > Pr(C_s)$. This relationship does not follow from (iii) $Pr(C_s \mid T) > Pr(C_s)$ and (iv) $Pr(T \mid R) > Pr(T)$ alone. What are the missing premises?
- Note: there are defensible forms of internalism which seem perfectly coherent with the author's "complexity test". For instance, the weak "supervenience internalism" defended by Feldman & Conee (2000).

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A Neat Result in Bayesian Epistemology (Shogenji + Fitelson) I

- I'll adopt Shogenji's own (1999, Analysis) Bayesian measure of the degree of coherence of propositions E_1, \ldots, E_n : $c(E_1, \ldots, E_n) = \frac{\Pr(E_1 \& \cdots \& E_n)}{\Pr(E_1) \times \cdots \times \Pr(E_n)}$.
- And, I will adopt my (2001, *Philosophy of Science*) Bayesian measure of the degree to which *E* confirms (or supports) $H: l(H, E) = \frac{\Pr(E \mid H)}{\Pr(E \mid \neg H)}$.
- Finally, I will need a salient Bayesian unpacking of " E_1 and E_2 are independent *vis-à-vis H*." We want a kind of independence that is consistent with a high degree of coherence between E_1 , E_2 , and H.
- Unconditional Pr-independence will not do, since this is not consistent with a high (or *any*) degree of coherence (in Shogenji's 1999 *c*-sense).
- As I have explained elsewhere (2001, *Phil. Sci.*), the appropriate sense of independence is *H-conditional* Pr-independence. That is, " E_1 and E_2 are independent *vis-à-vis H*" gets unpacked as "*H screens-off E*₁ *from E*₂."

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A Neat Result in Bayesian Epistemology (Shogenji + Fitelson) II

- **Theorem**.^a If (i) E_i and E_j (for all $i \neq j$) are independent vis- $\hat{\alpha}$ -vis H, and (ii) $l(H, E_i) = \alpha > 1$ (α constant, for all i), then (iii) $l(H, E_1 \& \cdots \& E_n)$ is a strictly increasing function of $c(E_1, \ldots, E_n)$.
- In words, this theorem states that (*ceteris paribus*) the more coherent a set of independent evidence is, the stronger the joint support that set provides.
- This is a straightforward Bayesian rendition of the (Lewisian) thesis that coherence should enhance the justificatory power of a collection of *independent and severally confirmatory* pieces of evidence.
- This approach is also more coherent with (occurrent) internalist constraints, since it involves only synchronic properties of the agent's Pr.
- Note: Bayesian epistemology is *not* consistent with the stronger (Bonjourian) thesis that coherence should enhance joint support *even if* the *E_i* are *not* severally confirmatory (shown by Huemer 1997 *SJOP*).

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^aThanks to Stephan Hartmann (Universität Konstanz) for an elegant proof of this theorem.