

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, \dots, 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. $\therefore \Pr(S_i \mid R \text{ is the best explanation of } C) > \Pr(S_i)$ [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?

"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. \therefore Belief formation is subject to a coherence constraint.
 4. \therefore Beliefs can be expected to be coherent (\therefore *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. \therefore 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.

Relationships Between Truth and Two Kinds of Coherence

- Let coherence_w be weak (*i.e.*, logical) coherence, and coherence_s be strong coherence (*i.e.*, a non-trivial degree of positive Pr-correlation).
- Let *T* = each member B_i of belief set **B** is true (that is, $\bigwedge_i B_i$), $C_w = \mathbf{B}$ is coherent_w (satisfiable), and $C_s = \mathbf{B}$ is coherent_s (B_i are Pr-correlated).
- 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.
- Argument for (*iii*): (a) $\Pr(\bigwedge_i B_i \mid C_s) > \prod_i \Pr(B_i) \geq \Pr(\bigwedge_i B_i \mid \neg C_s)$.
 \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. 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).
(\dagger) 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 **B'** = the "union" of **B** and a newly formed appearance. *T*, C_w , and C_s are as before (but now regarding **B'**), and *R* = all members of **B'** were reliably formed.
 - In (\dagger), 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).

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, \dots, E_n : $c(E_1, \dots, E_n) = \frac{\Pr(E_1 \& \dots \& E_n)}{\Pr(E_1) \times \dots \times \Pr(E_n)}$.
- And, I will adopt my (2001, *Philosophy of Science*) Bayesian measure of the degree to which E confirms (or supports) H : $l(H, E) = \frac{\Pr(E|H)}{\Pr(E|\neg H)}$.
- 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 ."

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-à-vis* H , and (ii) $l(H, E_i) = \alpha > 1$ (α constant, for all i), then (iii) $l(H, E_1 \& \dots \& E_n)$ is a strictly increasing function of $c(E_1, \dots, E_n)$.
- 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*).

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