Remarks on a Conundrum in Bayesian Epistemology

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Three prominent views in the epistemology of disagreement:

- Equal weight view: I should assign as much weight to my epistemic peer's judgement as my own.
- Extra weight view: I should assign more weight to my assessment than the assessment of others.
- Right reasons view: The answer depends on how well I've assessed the evidence E for H. If E *in fact* supports H, then it's reasonable for me to stick to my initial evaluation that H is true.

Shogenji presents a probabilistic look at what he calls the *proportional weight* view, which generalizes the equal weight view. According to the proportional weight view, we are to give "everyone's judgement a weight that is proportional to their epistemic qualifications." (p. 3)

Bayesian assumptions:

- Degrees of belief (or credence) of rational agents are *probabilities*.
- C_i is a suitable probability function, with $C_i(p)$ denoting S_i's degree of confidence in p.
- S_i's degrees of confidence are updated in accordance with the Bayesian rule of *conditionalization*: $C_i^{+r}(p) = C_i(p \mid r) =_{df} C_i(p \wedge r)/C_i(r)$.

Some definitions:

- S_i and S_j *disagree* on p iff $C_i(p) \neq C_j(p)$.
- Q $= <q_1, \ldots, q_n>$ represent $S_i, \ldots, S_n$'s *epistemic qualifications*, where each q_i is a non-negative rational number, and $\sum_{i=1}^{n} q_i = 1$.
- S_i and S_j are *epistemic peers* iff Q $= (<.5, .5>)$.
- Geometic mean: $\mathrm{G}(x_1, \ldots x_n) = (\prod_{i=1}^{n} x_i)^{1/n}$
- Arithemtic mean: $\mathrm{A}(x_1, \ldots x_n) = (\sum_{i=1}^{n} x_i)/n$.

- Take a case of two subjects, S_1 and S_2, who are epistemic peers (i.e., Q = (<.5, .5>)).
  (*) $C_1(p) = x_1 \Rightarrow C_1(p \mid (C_2(p) = x_2, Q = (< .5, .5 >))) = .5x_1 + .5x_2$.
  - Example: Let p = The Detroit Tigers will win the World Series this year. Suppose $C_1(p) = .9$, while $C_2(p) = .4$, and assume S_1 and S_2 are epistemic peers. Then once S_1 learns that he disagrees with S_2 wrt to p, his new credence in $p = .5(.9) + .5(4) = .65$
- The values of Q depend on one's epistemic qualifications: "bigger weight to epistemic superior's judgment and a smaller weight to an epistemic inferior's judgment." (p. 3)

- A quick worry with (*): Assume some threshold view of belief, where the threshold for belief is at, say, .5. Suppose my credence in $p = .9$ and your credence in $p = .2$. Plugging into (*), we have: $.5(.9) + .5(.2) = .55$. By the threshold view of belief, I count as believing p. But, and this is admittedly a bit speculative, I think a lot of epistemologists would want to say that instead of continuing to believe p, I should *suspend judgment* on p, particularly given the extent to which we disagree over p.

- Shogenji's dilemma:

  EITHER adopt the geometic mean to state the proportional weight view, and respect conditionalization but violate the assumption that C_i is a probability function, OR adopt the arithmetic mean to state the proportional weight view, and respect C_i being a probability function, but violate the rule of conditionalization.

- The rest of the paper generalizes the argument, showing that there is no mean M such that M can respect the assumptions of C_i being a probability function and the rule of conditionalization.

Ways Out?

What are our options here? Four stand out:

- Option 1: Reject Bayesian claim that degrees of belief (or credence) of rational agents are *probabilities*.
- Option 2: Reject the Bayesian rule of conditionalization.
- Option 3: Adopt the "My way or her way" view.
- Option 4: Adopt the "My way or the highway" view.

Option 1 looks like a last resort. Going with option 2 makes one vulnerable to a *diachronic Dutch Book* (Teller 1973)—though I don't think diachronic Dutch Book arguments have the force they once did (Earman 1992). In what follows I'll look at options 3 and 4 in a bit more detail. I'll close with a few remarks about an alternative way to regiment the equal weight view.

Option 3: "My way or her way"

- According to the "my way or her way" view, when there's disagreement, one "must pick a single person, either oneself or someone else, and ignore all others...the view disallows any systematic weighting of different judgments." (p. 17)

- Shogenji's argument against the view:

  This...seems unreasonable. For example, when the best experts in the field disagree among themselves, why does one have to either insist on one's own (poorly informed) judgment or pick a single expert and completely ignore others? Why can't we seek a balanced view by giving appropriate weights to different opinions? (p. 17)

- There might be something of an ambiguity here regarding what the disagreement is about.
- In some cases of disagreement—say, in physics, or psychology—I agree with Shogenji that it's unreasonable to stick to the one's own opinion or someone else's, given the systematic and deep nature of the disagreements in these fields.
- But in other cases I don't think it's unreasonable to defer to a single individual, especially if the individual is an *expert advisor*.
- More formally, supposing I have a credence function C and for any credence function C^* that I take my advisor to have, deferring to a single individual via (†) seems reasonable.
  (†) $C(H \mid \text{advisor has } C^*) = C^*(H)$ (Elga forthcoming).
- Depending, then, on the context of disagreement, I think the "my way or her way" view could be made defensible.

- Now Shogenji could avoid this sort of reply by saying that the special case I described above doesn't help the "My way or her way" strategy because the view should be applicable to *all* logically possible cases (in which, of course, the original individual credence functions are probability functions).
- If we take this line, then we're committed to what's sometimes called the *the universal domain assumption*, which seems fairly standard in the literature, though it's not beyond dispute.

Option 4: “My way or the highway”

- According to the “my way or the highway” view, in a case of disagreement, one is to stick with one’s own judgement in “total disregard for other people’s judgments.” (p. 4)
- I think the view really boils down to the *right reasons* view mentioned above, since it does not incorporate other people’s probability assignments.

- Here's Tom Kelly's (2005) characterization of the right reasons view:

  On the present view, the rationality of the parties engaged in such a dispute will typically depend on who has in fact correctly evaluated the available evidence and who has not. If you and I have access to the same body of evidence but draw different conclusions, which one of us is being more reasonable (if either) is in fact better supported by that body of evidence. No doubt, especially in the kinds of cases at issue, it will often be a non-trivial, substantive intellectual task to determine what the totality of relevant evidence supports. (p. 180)

- Shogenji offers the following argument against the "my way or the highway" view (though it is on the "my way or the highway" view proposed against the proportional weight view, and not against the equal weight view, which he takes to be a special case of the proportional weight view):

  ...it is an unreasonable position as an alternative to the proportional weight view, for it means that even a total novice should make no adjustments at all in her degree of confidence when all experts (whom she acknowledges to be her epistemic superiors) disagree with her. (p. 16)

There appear to be *two* arguments in this passage.

- First, the "novice" problem: on the "my way or the highway" view, novices can totally disagree with experts on some subject Δ and yet stick to their view(s) on Δ, even though they are less (epistemically) qualified than the experts. But consider: If the novice is *right* about Δ and the experts have it wrong, do the intuitions work against the view? Not clear to me.
- Second, regardless of whether one is a novice, the view lets you stick to your opinion on Δ, even when *all* experts disagree with you about Δ. Again consider: if I'm *right* about Δ and all the experts just have it wrong, do the intuitions still work against the view? Again, not clear to me.
- This is admittedly a bit speculative, but I think almost every "unreasonable"-syle argument against the right reasons view depends crucially on the set up and assumptions of the case, and once we make clear that one of the participants is *right*, the intuitions, if any, against the right reasons view will not be very strong.

Another (Formal) Approach

- Let's focus on the equal weight view and let's assume two peers, S_1 and S_2, disagree over p (i.e., $C_1(p) \neq C_2(p)$).
- One approach, the averaging approach, says S_1 should move to a new function C_1', which takes the average of the initial $C_1(p)$ and $C_2(p)$.
- But perhaps the equal weighter could give up on the averaging approach, and thereby avoid Shogenji's arguments.
- The idea would be look for credence functions C_i' which are "closer" to the peer's credence function (where we'd use some standard distance measure, i.e., Euclidean distance).

References

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