

Comment on Article by Gelman

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What fun! Andrew Gelman has given voice to many of the objections a Hypothetical Anti-Bayesian (HAB) might have. Leaving aside HAB's general grumpiness about the world passing him by, there are substantive points here worth responding to. As will not be a surprise, my viewpoint is Subjective Bayesian. Furthermore, the views I voice are actually what I think.

Subjective Probability

“Why **should** I believe your subjective prior?” I don't think you “should.” It is my responsibility as an author to explain why I chose the likelihood and prior that I did. If you find my reasons compelling, you may decide that your prior and likelihood would be sufficiently close to mine that it is worth your while to read my papers. If not, perhaps not.

The idea that a statistical analysis is, or ought to be regarded as, “objective” is an attempt to bamboozle readers into suppressing their disbeliefs. Even if there were consensus on an analysis, that just makes it many people's opinions, not the “truth.” As human beings, we are not endowed with the ability to identify objective truth. Thus to treat priors and likelihoods as subjective statements of belief is merely to admit what is manifestly the case.

The statement “as scientists, we should be concerned with objective knowledge” is an aspiration that no scientist can honestly meet. What we can objectively establish is that if this is your prior, that your likelihood and these your data then the resulting posterior is the following. If two Bayesians get different posteriors in that setting, at least one has made a provable error.

Randomization

If it were the case that Bayesianism and randomization were incompatible, this might be a serious issue. However, that's just not true (see (1) for elaboration on this point).

I agree that the design of experiments is a fruitful subject to study. I also think that Bayesians have a lot to offer in this study, since there is a lot of informal opinion that goes into design as currently practiced. I hope more Bayesians will take up the challenge of understanding from a Bayesian perspective the rich heritage of design.

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