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Commentary on Barron

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In Response to: Guillermo Barron's *Bias, Bayes, and group psychology*

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Is the fact that a claim comes from a biased source a reason to think the claim false? Obviously it is not a conclusive reason for rejecting the claim. The claim might have been generated independently of the bias, in some epistemically reliable manner. Even if the bias had some causal influence, the claim it generates might in a particular case dovetail with the facts, either accidentally or otherwise.

One might suppose, however, that bias is a reason for thinking the claim less likely to be true. Barron cites an argument by Elliott Sober that a person's belief is implausible if what caused the person to adopt it is independent of whether the belief is true. Barron refutes Sober's conclusion on Bayesian grounds. If a belief has been produced by a process causally independent of its truth, then by definition the posterior likelihood of arriving at this belief, supposing that the belief is true, [$P(R/Q)$ using Barron's abbreviations] is equal to the prior likelihood [$P(R)$ using Barron's abbreviations] of arriving at this belief, without making any supposition as to whether the belief is true. That is what it means for the method of arriving at a belief to be causally independent of the truth of the belief. Since the belief has actually been arrived at, the likelihood of arriving at it is not zero. Hence in the statement of Bayes' theorem the posterior and prior likelihood cancel out, and we are left with the information that the posterior probability that the belief is true [$P(Q/R)$ in Barron's notation] is equal to the prior probability that it is true [$P(Q)$ in Barron's notation]. The information that the belief has been arrived at in a manner causally independent of the truth of the belief is totally irrelevant to how confident a rational agent should be in its truth. Only the prior probability of the belief should count.

Barron's argument assumes that rational degree of confidence in a proposition is subject to Bayes' theorem, i.e., that the rational degree of confidence in a proposition Q given a proposition R equals the rational degree of confidence that both are true divided by the rational degree of confidence that Q is true. Such a view fits naturally with the view that rational degree of confidence is a probability function constrained by Kolmogorov's axioms. Reputable epistemologists have recently questioned this assumption (Pollock, 1995). For the sake of the discussion, however, I propose to accept it. Given acceptance of the assumption, then, Barron's argument does conclusively demonstrate, as he maintains, that arriving at a belief by a process causally independent of its truth is epistemically irrelevant to whether the belief is true. It is worth noting that Barron's refutation is still very much to the point, since Sober continues to maintain his thesis, on the basis of the same example, in the second edition of his textbook, published just last year (2000: 210-211).

I hesitate, however, to draw the further conclusion that evidence of bias is epistemically irrelevant. This conclusion would follow immediately, of course, if we defined "bias" as "arriving at beliefs in a way which is causally independent of their truth." If we mean something else by "bias," however, it becomes an open question whether evidence of bias is epistemically irrelevant.

What is bias? Barron appears to give us examples or species, but no definition of the genus. His examples are in fact odd. In ordinary speech, we would hardly attribute bias to a person who arrived at an estimate of the number of people in a room by drawing a slip of paper

from an urn. Nor would we necessarily attribute bias to “Goldman”’s negative authority whose pronouncements in a certain field have always been false; the person might just be ignorant. (As I point out later, Barron has misconstrued Goldman’s example; for the time being I will discuss the example as Barron construes it, attributing it to “Goldman” rather than to Goldman.) A more paradigmatic example of bias would be a pre-conceived inclination to believe that human behavioural traits are inherited, or the contrary pre-conceived inclination to believe that they are shaped by environmental influences. As Barron implies at the beginning of his paper, the biases we identify tend to be fundamental values which shape the questions we ask, the sources of information we consult, the hypotheses we formulate, what we observe, how we interpret it, and so on. The group bias he cites at the end of his paper fits this pattern; it is an inclination to discriminate against, derogate and stereotype members of an outgroup to which one contrasts one’s own ingroup, and it can lead to the rejection of outgroup beliefs simply on the ground that they are beliefs of the outgroup. (I note in passing that we identify bias in many contexts other than the adoption of a belief. The method of selecting a sample can be biased, and the behaviour of people and institutions can be biased for or against individuals on the basis of their sex, religious affiliation, skin colour, ethnic origin, etc.)

Epistemic bias thus appears to be a pre-conceived tendency to systematically favour, or systematically oppose, a certain type of belief. By definition, it is not an effect of the truth of any belief to which it causally contributes. But bias involves more than such limited causal independence; it involves also a systematic leaning in a certain direction.

Is such a systematic leaning a reason to doubt the truth of a belief to which it contributes? It could be, if there were a reason to think that the inclination in question tended to produce false beliefs. “Goldman”’s negative authority, if motivated by bias, would be a case in point. As the number and variety of uniformly false claims in a given field made by this negative authority increases, it is rational to increase our confidence that the next claim made by this “authority” will be false. “Goldman”’s negative authority is like a clock which you have always observed to tell the wrong time; you can rely on it to be false, with a high degree of confidence. Note that this reliance does not depend on there being any intrinsic epistemic relation between the falsehood of previous claims by the negative authority and the falsehood of the present claim. Further, Barron’s Bayesian argument does not apply to “Goldman”’s negative authority, because the fact that the “authority” makes a certain claim in the given field may be causally dependent on the claim’s being true, or at least systematically (negatively) correlated with it. In fact, the known falsehood of this person’s previous claims in the field gives one reason to assign a lower likelihood to the person’s making a claim in the field, given that the claim is true, than to his making the claim, given only our other background information. Since the posterior likelihood is lower than the prior likelihood, the posterior probability is also lower than the prior probability.

To support a probabilistic inference from evidence of bias in the author of a claim to the falsehood of that claim, one needs to assume that people with the bias in question who have advanced a claim of the type in question generally make false claims. And one needs to look at the most specific characterizations of the type of bias and the type of claim for which one has evidence of the frequency of false claims in the class, following the principle that inductive generalization and extrapolation is justified only relative to the most specific classification of the individuals one is reasoning about. (Knowing only that Tweety is a bird, one can reasonably infer that Tweety probably can fly. But if one also knows that Tweety is a penguin, and that penguins cannot fly, then one cannot reasonably infer that Tweety can fly.) Thus, for example, if

one had good evidence that socio-biological explanations of human sexual behaviour advanced by male chauvinists were generally false, then evidence that the author of such an explanation was a male chauvinist would be good grounds for thinking that the explanation was probably false (assuming that one had no more specific overriding information about this male chauvinist or the type of behaviour being explained). Note however that such an inference need not involve a lowering of the prior probability one assigned to the explanation, before learning that the male chauvinist had proposed it.

I think therefore that, under such specific conditions, evidence of bias can be a good reason for thinking that a claim is false. I suspect, though, that such conditions are rarely met. And it seems difficult to think of other conditions under which evidence of bias would be a good reason for thinking a claim false. So Barron's point holds in most cases.

Barron is also correct, I think, to hold that in many cases where bias is involved in the production of a claim, it is nonetheless rational to increase one's confidence that the claim is true. This is because, especially in scientific contexts, bias is not the sole causal factor; the author of the claim may in fact have carefully examined some relevant evidence. Barron's example of the chicken sexer who identifies all male chicks as male and 99% of female chicks as female, though not strictly speaking an example of bias, is a case in point. Knowledge of bias in the author of a claim seems to provide a reason to scrutinize more carefully the method which the author used to arrive at the claim, the plausibility of the data reported, and so forth—as in the case of the critical examination of the twin studies of the eugenicist Cyril Burt on the heritability of IQ scores.

Barron's concluding caution about group bias is well taken. It speaks, however, against the commission of the genetic fallacy in arguing from the bias of a source to the falsehood of what that source claims. Barron has ably reinforced the majority view that such genetic arguments are fallacies. Given internalization of the fallaciousness of the genetic argument, awareness of bias in a source can have the epistemically salutary effect of encouraging closer scrutiny to the methodology and evidence used by that source.

In the course of his stimulating paper, Barron makes some inferences and claims which I would question. I mention them here, for completeness:

1) He takes Alvin Goldman to endorse an argument from an agent's epistemic history to the probable falsehood of some further claim about the subject on which the agent has a bad track record. But the argument Goldman endorses, which he gets from Wesley Salmon, is rather different. It is the argument: "The vast majority of statements made by *X* concerning subject *S* are false. *P* is a statement made by *X* concerning subject *S*. Therefore, *P* is false." (Goldman 1999: 153) This argument, as Goldman notes, is a special case of the statistical syllogism, which is inductively valid.

2) The "suppressed premise" which Barron attributes to Sober in his argument (1) has the defect that it makes the stated premise unnecessary. Thus it is not a plausible explanation of why Sober thinks his conclusion follows from his stated premise. For such an explanation, I have argued, we need a covering generalization. In this case, the most plausible candidate seems to be: "Generally speaking, the number of people in a room is not the same as the number on a slip of paper drawn at random from an urn containing 100 slips of paper each numbered from 1 to 100." Note that this is a much more specific assumption than the assumption that the belief was arrived by a process causally independent of whether it was true.

3) In discussing his matrix of examples of independent and dependent methods of belief formation which generally yield true beliefs and generally yield false beliefs, Barron infers from the fact that pointless random choice generates a belief in one case which is almost certainly true that the independence relation can reliably produce true beliefs. Since one instance of a true result does not prove that a reliable method was used to arrive at it, Barron needs to specify the method more in order to draw this conclusion. Perhaps the method is to arrive at numerical estimates by drawing a slip of paper from Sober's urn and announcing that the number on the slip is not the number to be estimated. Such a method would reliably produce true beliefs, because of the low prior probability that the number of members of some class is the same as the number on a slip of paper randomly drawn from a set of 100 slips numbered from 1 to 100.

4) In response to Annette Baier's assertion that genetic arguments require us to ignore the origins of a claim as irrelevant, Barron objects that knowing that a claim comes from unsavoury origins will be good reason not to increase one's degree of assent. How is not increasing one's assent different from ignoring the origins of the claim? Ignoring the origins, I suppose, amounts to letting the fact that someone has made the claim make no difference to the degree of confidence one has in the truth of the claim.

5) Incidentally, I have some difficulty with Barron's talk of degrees of assent and degrees of belief. It seems to me that assent and belief are either-or concepts: either one assents to the truth of p , or one does not; and similarly with belief. One might perhaps more felicitously talk about the degree of confidence with which one assents to a claim, or believes it.

6) Barron adopts Nozick's view that the existence of bias is revealed in the probability that an agent will assert Q given that Q is true. But Nozick in the place cited is talking about bias in selection by the media of what they report. He is not talking about bias which influences the beliefs one adopts.

7) I agree that the low prior probability of a claim is not good evidence that bias has entered into its creation. But Nozick's point is irrelevant to this contention. What seems to support it is rather that many claims have a low prior probability. Specific numerical results of experiments or systematic observations, for example, have a low prior probability. So claims with low prior probability can easily emerge from highly reputable sources who have followed impeccable methodology and have not allowed biases to influence the results they have obtained and reported.

8) Barron attributes to Donald Brown the view that political bias can increase a researcher's credibility. Although one might use Brown's example to support such a view, Brown himself does not do so. His point is rather that one can argue powerfully for a human universal on the ground that a determined effort to show that a trait is not universal has been unsuccessful. This is just an example of a non-fallacious argument from ignorance, which does not rely on the political bias of the researchers.

9) The objection that group bias is an epistemic pattern which must be doing some useful work for us does not seem reasonable to me. First of all, the pattern is not specifically, or even mainly, epistemic. Secondly, one cannot assume that every common attitudinal or behavioural trait which has a genetic basis has been specifically selected for. It might be a vestige, which has survived because it happened to be associated with something which was selected for. Or it might simply be non-deleterious. In this case, ingroup bias is a well-known phenomenon among

primates generally, and is on the face of it unlikely to have had any epistemic payoffs for our primate ancestors among whom it first emerged.

References

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