

SOCIAL PREREQUISITES FOR THE PROPER FUNCTION
OF INDIVIDUAL REASON¹

Human beings form beliefs by way of a variety of psychological processes. Some of these processes of belief acquisition are innate; others are acquired. A good deal of interesting work has been done in assessing the reliability of these processes. Any such assessment must examine not only features intrinsic to the psychological processes themselves, but also features of the environments in which those processes are exercised; a mechanism which is reliable in one sort of environment may be quite unreliable in others. This is true not only of the physical environment; it is true of the social environment as well. This has important implications for how we should think about the exercise of individual reason, as well as the interpersonal practice of giving and asking for reasons.

There is a long philosophical tradition which regards human reason as a neutral court of appeal. The principles of logic, the laws of probability, and the principles of proper reasoning are neutral with respect to all substantive debates, according to this view, and that is precisely why they are well-suited to provide the neutral forum required for the proper resolution of intellectual issues. When an individual turns reflective and wishes to examine the credentials of his or her own beliefs, human reason is the neutral arbiter which allows for a proper understanding of what should be believed. By the same token, in the case of interpersonal disputes, a full airing of each party's evidence is all that is required for neutral reason to settle the issue of what to believe, at least until further evidence should become available. Resolving disagreements by deference to socially recognized experts will only work well in societies where the title of expert is conferred in appropriate ways. By contrast, deference to reason allows for the proper resolution of all intellectual issues, regardless of the physical or social environment in which it is brought to bear.

It is this view of human reason which I challenge here. There are social prerequisites for the proper exercise of human reason, I argue, just as there are social prerequisites for the proper exercise of deference to authority. Recognizing this fact opens up important lines of empirical inquiry, as well as motivating certain strategies of social and epistemic reform.

I

Let me begin with an example due to Frank Sulloway. In *Born to Rebel*, Sulloway argues that there are profound differences between individuals who are first-born and those who are laterborn in their openness to conceptual innovation: firstborns tend to be extremely conservative conceptually, rejecting innovative ideas out of hand, while laterborns tend to be extremely receptive to conceptual innovation.² During the period 1859-1875, laterborns were 4.6 times more likely to endorse Darwin's theory of natural selection than were firstborns.³ Similarly, in the period immediately following the publication of Copernicus's work, laterborns were 5.4 times more likely to endorse Copernican ideas than were firstborns.⁴ In studying twenty-eight scientific controversies, Sulloway found a consistent pattern.

Most innovations in science, especially radical ones, have been initiated and championed by laterborns. Firstborns tend to reject new ideas, especially when the innovation appears to upset long-accepted principles. During the early stages of radical revolutions, laterborns are 5 to 15 times more likely than firstborns to adopt the heterodox point of view. During the technical revolutions, laterborns are 2 to 3 times more likely to lend their support. For their own part, firstborns are drawn to reactionary innovations, a domain in which they are also the principal pioneers.

*Firstborns typically welcome conservative doctrines as potential bulwarks against radical change, supporting them 2 to 1 over laterborns.*⁵

Sulloway is not arguing, of course, that data have no effect on the views of the individuals studied. Indeed, as more and more data come in and the case for or against radical ideas becomes more clearcut, birth-order effects tend to evaporate. Nevertheless, the way in which theories are evaluated is clearly influenced in a pronounced way, if Sulloway is right, by non-evidential factors. Firstborns are profoundly biased against conceptually innovative ideas, while laterborns are profoundly biased in their favor.

Needless to say, the operation of these biasing factors is not self-presenting. Careful introspection, or reflection on the way in which one's own ideas are evaluated, does not reveal either a tendency to favor innovative ideas in laterborns, or a tendency to oppose them in firstborns. Sulloway could not have arrived at his conclusions by asking firstborns and laterborns to reveal their reasons for evaluating various theories as they do. The evaluation of complex scientific theories on the basis of large bodies of data inevitably involves inchoate judgments of relative plausibility, judgments which are difficult to formalize or even fully articulate. Patterns of these judgments may reveal the workings of biasing factors behind the scenes, but the operation of such factors is rarely available to those who reason under their influence. Certainly, in the Sulloway case, there is no evidence whatsoever that the influence of birth order on the evaluation of theories could have been detected by careful introspection. When firstborns and laterborns evaluate the epistemic credentials of controversial scientific theories, they are influenced by their birth order in ways of which they are typically ignorant.

For this very reason, attempts to resolve disagreements between firstborns and laterborns, at certain stages of investigation, are likely to result in little success. Firstborns will simply find certain sorts of considerations more persuasive than laterborns, while laterborns will find other considerations more persuasive than firstborns. It is not that either side in the controversy is ignoring

relevant data in any obvious way. Instead, the plausibility metric with which each side operates is simply different from the other's, and nothing in the data can be found by either side to bring about rational change of belief. Neither side is being obviously unreasonable, it seems, yet each, understandably, regards the other side as mistaken. In situations such as this, each side of the controversy may say of the other, "They just don't get it."

The Sulloway case is quite different from those in which an individual makes some sort of calculational mistake or simple error in reasoning. In cases involving such trivial errors, a dialectical discussion of reasons can often serve to end the disagreement and remedy the mistake. When one party notices that the other has made an error in adding two numbers, for example, pointing this out is likely to result in a rational and rapid resolution of the disagreement. And while second parties are often useful in detecting this sort of error, they are by no means necessary; merely checking over one's own work is often sufficient to detect this kind of error. In the case of hidden biases, however, such as birth order effects, careful reflection, checking one's own work, and discussing one's reasons with those who disagree are unlikely to remedy the problem.

The effect of hidden bias on the dynamics of disagreement depends on the social distribution of the biases. Thus, in a society where two-child families predominate, preferences for and against radical conceptual innovation will be fairly equally balanced. In societies where large families predominate, the conservative tendencies of firstborns will be a small minority.⁶ Where single-child families are favored, conceptual conservatism will be the norm.⁷ If laypeople adopt the seemingly obvious cognitive strategy of withholding opinion when the experts are nearly evenly divided on a question, and siding with the majority of experts when a clear majority favor one side of an issue, then reasonable lay opinion will be determined, in an important range of cases, by the size of the experts' families rather than truth-related features of the evidence. This is, to say the least, disturbing.

As Sulloway points out, firstborns, for reasons not entirely unrelated to their conceptual conservatism, tend to be more professionally

successful than laterborns. A randomly selected group of highly successful professionals is thus likely to be disproportionately firstborn. As Sulloway notes,

[this] has practical implication for the selection of scientific commissions and the evaluation of their conclusions. Because commissions tend to be packed with eminent individuals (and hence firstborns), their votes should perhaps be "weighted" to adjust for individual biases in attitudes toward innovation.⁸

If a commission of experts consisting entirely of firstborns were to examine some conceptually innovative idea and find little reason to endorse it, this would mean a great deal less than if a group of laterborn experts were to reach the same conclusion on the basis of the same evidence. If even laterborns think that some conceptual innovation is ill-advised, then it almost certainly is. That a group of firstborns should think some conceptual innovation unwarranted, however, would tell us more about the individuals evaluating the idea than it would about the advisability of the innovation.

If Sulloway is right, it would clearly be unwise to ignore information about birth order in considering the probity of expert opinion. Experts who evaluate a body of evidence to the best of their considerable abilities are likely to be influenced, in a great many cases and in important ways, by non-evidential factors. Asking the experts to focus more carefully on the evidence, or to reflect on the quality of their reasoning, is unlikely to temper the influence of the kind of biasing factors under discussion here. Thus, when reasons are privately scrutinized, or when they are publicly challenged and debated, biasing factors which play an important role in shaping the outcome of inquiry may easily go undetected. The ways in which inquiry is shaped by such biases will be largely determined by their distribution in the population involved in the inquiry. It would thus be a mistake to ignore the social distribution of bias and simply place our faith in the exercise of individual reason.

II

Let us consider a more familiar sort of case. Suppose that Mike is arguing in favor of a certain social policy: the policy he advocates, as he tells it, will produce far better effects than the available alternatives. Mike is intelligent and articulate. He presents arguments which draw on a large body of relevant evidence, and the arguments he offers are obviously valid. Let us suppose that we have good reason to believe that Mike is entirely sincere: he says exactly what he believes, and he has no intention to mislead anyone.

If you and I are not familiar with the issue on which Mike speaks so eloquently, and we are largely ignorant of the relevant facts, we might reasonably withhold opinion even in the presence of such obviously valid arguments given by a sincere, intelligent, and apparently well-informed individual, even when we can think of no reason to object to any of the premises. In cases such as this, it is not uncommon for someone to wish to hear from the other side—someone with opinions different from Mike's—before making up his or her mind. This is clearly a reasonable thing to do.

Why is this such a reasonable thing to do, even in cases where one does not doubt the integrity of the individual presenting the arguments? We are all familiar with cases, both in others and in ourselves, where reasoned and thoughtful advocacy has been accompanied by bias. Many individuals pay more attention to information which supports a view they favor; information which supports a belief already held may be more easily remembered than information which conflicts with it; arguments in favor of a view already held may be found more persuasive, other things being equal, than arguments against such views. These home truths have all found extensive support in the experimental literature in social psychology.⁹ Thus, even well-intentioned individuals, sincerely engaged in a search after truth, will often be affected by biases of which they are unaware, thereby skewing the results of their inquiries. The desire to hear from the other side, in such cases, is fueled by a recognition of these facts. While advocates of contrary views are likely to be subject to biases of their own, the idea is that in hearing from all available sides of an issue, the

biases will, in effect, cancel one another out. This idea deserves some scrutiny.

Let us return to the case of Mike. If we are concerned that Mike may be subject to the kinds of biases just enumerated, listening to someone who disagrees with him may provide a useful check on the accuracy of his conclusions. If the data Mike present seem to offer powerful evidence for his conclusion, but we are concerned that he might have inadvertently overlooked or failed to remember relevant counterevidence, advocates of an opposing view are likely to have no such problems. They are equally susceptible to the kinds of bias which may be affecting Mike, but because their views are different, these biasing factors will only serve to highlight the very data which Mike has overlooked. If there are arguments for the other side which Mike has found less persuasive than he should, those on the other side are less likely to have found those arguments unconvincing. By listening to the advocates of a number of different views, the very factors which bias any single individual's investigation will work to make salient relevant data and relevant arguments which any single investigator would be likely to overlook. Attending to the public debate in this way may thus overcome at least some of the problems which would plague any of our individual informants were they to reach conclusions entirely on their own. The same is true, of course, of the first-person case, for it is not bias in others alone which is a concern here.

Needless to say, attending to the arguments and opinions of others is no panacea. If the public debate on an issue involves parties who are generally well-informed and largely reliable, even if subject to the sorts of biases discussed, then the strategy of attending to the diversity of available argument in order to overcome individual bias may well be a reasonably effective one. If, on the other hand, public debate on an issue is flooded with misinformation and largely unreliable inquirers, allowing oneself to be influenced by the content of that debate is only likely to mislead.

The most extreme cases here involve societies in which the vast majority of individuals are radically misinformed on a very wide range of issues. State-controlled media in totalitarian societies can create an environment in which

otherwise reasonable epistemic strategies will only serve to create and further entrench patterns of false belief. At the limit, imaginable situations of this sort create a social version of Descartes' evil demon: the social environment provides a source of misinformation which cannot be overcome by any reasonable means. The most interesting cases epistemologically, however, and to my mind the most important, are neither the social equivalent of the evil demon nor the largely benign cases at the other end of the spectrum which are easily resolved by attending to the public debate on whatever issue is at hand. The cases I have in mind are ones where a single source of bias skews public opinion, inquiry and debate in a common direction thereby making the commonsense strategy of comparing notes with others utterly useless in resolving the problem.

Although we all recognize not only the possibility, but the likelihood that parties to public debate are influenced, at least in part, by various biases, the topic of biasing factors is often kept out of bounds in the public discussion of important issues. If Mike is discussing some matter of public policy with people who see the matter differently than he does, it would typically be regarded as rude for him to bring up the possibility that those who disagree with him are influenced by bias. It would also, in many cases, be a very ineffective way to try to convince anyone. As a strategic matter, the character and psychological make-up of one's interlocutors is usually best left out of the discussion; it is important, instead, to focus directly on the public policy matters which are at issue. Mike should, it seems, keep his suspicions about the bias of his interlocutors to himself.

It is important to recognize, however, that this point about the discussion of bias is not merely a point of etiquette or a practical point about how to convince people. There is an epistemological point here as well. In many cases, we may better get at the truth of the matter by simply ignoring issues of biasing factors and dealing directly, instead, with the matter at hand. If Mike's opponent is unaware of relevant information because he is influenced by confirmation bias, Mike may simply bring up the information which his opponent has ignored. Mike can be more certain that his opponent has ignored the information, or at least failed to mention it, than he can that this is due to

any sort of bias. From the point of view of a third party who approaches the disagreement not knowing what to think about the issue, if each party sticks to a discussion of the policy issue itself, the biases of each individual, should they have any, will thereby be compensated for.

The idea that the biases will cancel one another out, however, clearly applies only in cases where the various parties involved in public discussion are subject to different biases. When Mike's opponent has a tendency to overlook information in favor of some policy, and Mike himself has a tendency to overlook information which counts against it, discussion of the policy matters themselves will overcome the problems which the individual biases create. But if Mike and his opponent are subject to a common bias, or, more generally, if the entire public discussion of some issue is shaped by a single bias, then the very idea of focusing on the policy issue and ignoring questions about bias will only serve to further entrench the errors which the bias creates.

The suggestion that the discussion of certain issues is shaped by biases of this sort should be a familiar one. Marx claimed that issues of public policy are systematically distorted by the interests of the ruling class. Feminists have claimed that issues involving the place of women in society are systematically distorted by the interests of men. Biases involving race, it has been argued, have a very large part in shaping the entire character of discussion of public policy issues in many different societies. In each of these cases, a single source of bias is claimed to influence at least a very large percentage of the participants in public discussion of a wide range of issues. Because the kinds of bias under discussion are ones which are unavailable to introspection, sincere and well-meaning individuals who are influenced by this sort of bias might easily be unaware that their beliefs are distorted in this way. Because the participants in public discussions of topics touched by these biases may all be operating with the same bias, public discussion of these issues does not provide the usual corrective to the defects of individual reason. On the contrary, in situations where a single bias is shared by the vast majority of individuals engaged in public discussion, the effects of bias are further entrenched by public discussion, thereby

reinforcing the illusion of accuracy which private reflection encouraged. Although any single example is bound to be controversial, the general point is utterly straightforward: when inquiry on a topic is influenced in a population by a bias which is almost universally held, epistemic strategies which would otherwise serve to correct individual biases will only serve to reinforce the effects of the widely shared bias.

This is not to say, of course, that when biases of this sort operate, they are entirely immune to detection. First, there may be some members of the population who, for a variety of reasons, simply fail to share the common bias. Second, the question of whether inquiry on certain topics is widely distorted by a certain bias, once it is raised, is not automatically itself an inquiry which is tainted by the very bias at issue. And third, even when a biasing factor is likely to be at work in an inquiry designed to detect the bias, this is not to say that this kind of influence will assure that bias goes entirely undetected. Each of these points requires discussion.

Public discussion of an issue will be influenced in adverse ways if a common bias is held by a sufficiently large proportion of the population. Even in these cases, however, there may be many individuals who do not share the common bias. Not everyone shares the interests of the ruling class; not everyone shares in the interests of male domination; and so on. The importance of this point should not be exaggerated. Indeed, as Marxists and feminists have often argued, even those who would not otherwise be expected to share the prevailing bias—those who are not members of the ruling class, say, or women, whose interests are harmed by the widely shared bias—may come themselves to share the biased way of viewing matters precisely because the public discussion of ideas, shaped as it is by the prevailing bias, exerts such a strong influence. When socially recognized experts are largely in agreement that a certain claim is true—whether those experts have a common social class, or a common gender, or a common birth order—reasonable people who would otherwise think differently, if they were to have an independent opinion at all, will often be swayed by the majority of experts. Nevertheless, not everyone always is.

Moreover, biases typically operate to influence opinion within a restricted domain. Thus, according to Sulloway, birth order has effects on beliefs that involve significant conceptual innovation; it has no effect, for example, on perceptual belief. Arguably the most plausible version of claims about the effects of class interests and gender has these factors playing a prominent role within certain restricted domains, and little if any role in many others. Even in cases where a certain biasing factor thus plays a distorting role within a given domain, the question of whether individuals are influenced by such a factor may well be outside the bias's likely domain of influence. If we wonder whether investigators in a certain environment are subject to a shared visual illusion, for example, we can use measuring instruments to determine the accuracy of their perceptual judgments with little danger that this investigation will itself be unduly influenced by the very bias it is designed to detect. Some such investigations may fall within the scope of the alleged common bias, but there is no reason to think that this is true in all cases.

Finally, even in those cases where an inquiry into the question of bias is itself likely to be influenced by the bias under investigation, should it exist, this need not rule out the possibility of conducting an investigation in a way which is likely to get at the truth. While evil demons and other designing agents may tamper with inquiries so as to produce results which perfectly simulate any desired outcome at all, naturally occurring biases are unlikely to be so effective in hiding their own operation when subjected to responsible inquiry. To take a very simple case, my own vision, without correcting lenses, is badly distorted; even when I examine objects at close range, my view of them is influenced by imperfections in my eyes. This does not mean, however, that were I to try to determine visually whether my vision is influenced by distorting factors, any such investigation would yield the result that it is not. My vision both near and far, in both my right and left eyes, is quite distorted, but the pattern of distortion is different at varying distances and in each of my eyes: my vision is more accurate close up than it is from far away, and more accurate in my right eye than it is in my left. This allows me to get some sense of the extent of my visual

difficulties, even though there is no distance, in either eye, from which I have an undistorted view of things. Biasing factors in belief acquisition, like visual imperfections in the eye, are unlikely to introduce smooth distortions over the entire range in which they operate so as to make their own operation wholly invisible.

Consider an analogy with the calibration of measuring instruments. Individual measuring instruments may be less reliable than we would like in detecting certain phenomena. Some of their results may be artifacts of the devices themselves, less an indication of features of the phenomena they are designed to detect than features of the design of the instrument. Nevertheless, in spite of the fact that no instrument is perfectly reliable, we are able to use such measuring instruments to achieve a great deal of knowledge about the world. Individual devices may be checked against one another. When there is independent reason to believe that the individual devices are at least roughly reliable, areas of agreement among the various devices serve as further evidence of their reliability. When one device is at odds with most of the others, this serves as evidence that the device is in error. By using different devices with dramatically different mechanisms to get at a single phenomenon, we are able to run independent checks on the reliability of each device.

We may think of the attempt to canvas the opinions of others as analogous to the use of different measuring instruments to bootstrap our way to greater reliability. When biases are properly distributed in the population, such a process is effective in improving reliability. But when virtually the entire population is subject to a single source of bias, the result is much like using one measuring instrument to check on the reliability of another which is its identical twin.

The concern about the distribution of bias is just a concern about the possibility of calibrating the mechanisms of belief fixation. And just as in the case of measuring instruments, concern about this sort of issue can be addressed in a very wide range of ways. While there is no guarantee that even the best designed plans for calibration will succeed, it would be foolish to assume that attempts at calibration are either unnecessary or pointless.

III

What should be done, then, in order properly to address these concerns about the distribution of bias? It would be a mistake to suppose that a democratic approach would be constructive here and that every voice should be heard in the conduct of inquiry. Not all voices are equally valuable. Some people are far better informed than others on a given issue, and adding ignorance and misinformation to the public discussion of ideas does not aid in getting at the truth. Just as adding a number of hopelessly inaccurate measuring instruments only gets in the way of the task of proper calibration, giving every point of view, however misguided, an equal place in public discussion serves no useful epistemic purpose.¹⁰ The epistemic case for including perspectives which are not represented in public discussion is not that more perspectives are better, however inaccurate they may be. In the many cases where inquiry has been advanced by the inclusion of perspectives which had previously played little role in public discussion, the positive contribution of the missing perspectives lay in the needed corrective they supplied to a pattern of inquiry gone awry. Not every perspective can play such a corrective role; some perspectives, if added to public discussion, only serve to distort or distract.

The problem, of course, lies in determining which of the various perspectives serves to enlighten public discussion and which of them do not. And here, as in the case of calibrating measuring instruments, there is no merely formal solution. We must do the best we can, always recognizing that the best we can may not be good enough. A responsible community of inquirers must take seriously the suggestion that its inquiries on certain topics are distorted by a common bias, and it must do what it can to determine whether such charges are true. Here, as elsewhere, responsible inquiry may improve our epistemic position and further enhance our understanding of the world, but it is not guaranteed to do so.

IV

We should not think of the exercise of individual reason as a neutral court of appeal for resolving factual matters, nor should we think that the public discussion of reasons by responsible persons is automatically neutral between differing points of view. The social distribution of bias plays a role in shaping the character of public discussion, and understanding the distribution of bias may be essential for advancing our understanding of many matters. There are social prerequisites for the proper function of individual and public reason.

Notes

- ¹ I first addressed this issue in "Distrusting Reason," *Midwest Studies in Philosophy*, 23(1999), 181-196. Philip Kitcher has addressed a number of related themes in "The Division of Cognitive Labor," *Journal of Philosophy*, 87(1990), 5-23; "An Argument about Free Inquiry," *Nous*, XXXI(1997), 279-306; and, at greater length, in *Science, Truth and Democracy*, Oxford University Press, 2001.
- ² *Born to Rebel: Birth Order, Family Dynamics, and Creative Lives*, Pantheon, 1996.
- ³ *Ibid.*, 39. This figure corrects for the greater number of later-borns in the population.
- ⁴ *Ibid.*, 39.
- ⁵ *Ibid.*, 53.
- ⁶ This oversimplifies somewhat. Sulloway discusses the influence of family size: see, for example, the chart on 99.
- ⁷ Again, this oversimplifies somewhat. As Sulloway points out, only children, while conceptually conservative, are not nearly as conservative as firstborns in multi-child families. See *ibid.*, 22-3.
- ⁸ *Ibid.*, 537, n. 43.
- ⁹ See, for example, Peter Wason, "On the Failure to Eliminate Hypotheses in a Conceptual Task," *Quarterly Journal of Experimental Psychology*, 12(1960), 129-140; C. Lord, L. Ross, and M.

Leper, "Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence," *Journal of Personality and Social Psychology*, 34(1979); and Richard Nisbett and Lee Ross, *Human Inference: Strategies and Shortcomings of Social Judgment*, Prentice Hall, 1980, chapter 8. For a recent collection of papers on these and related issues, see T. Gilovich, D. Griffin, and D. Kahneman, *Heuristics and Biases: The Psychology of Intuitive Judgment*, Cambridge University Press, 2002.

¹⁰ I would not want to assume that the sole purpose of the public discussion of ideas is epistemic; it should not be. There are other legitimate interests which the public discussion of ideas may serve. Nevertheless, getting at the truth is one very important function of the public discussion of ideas, and it is worth asking how such discussion should be organized so as to serve that purpose effectively. We can only determine how potentially competing interests may be balanced against one another if we understand the extent to which those interests are advanced or impaired. My interests in this paper are exclusively epistemic. For an extremely interesting discussion of the ways in which epistemic concerns may conflict with others, see Kitcher's "An Argument about Free Inquiry," and *Science, Truth and Democracy*, cited in note 1.

Hilary Kornblith is Professor of Philosophy at the University of Massachusetts, Amherst. His areas of research include epistemology, the philosophy of mind and metaphysics. He has authored *Knowledge and its Place in Nature* (2002); *Inductive Inference and its Natural Ground* (1993) and has edited *Epistemology: Internalism and Externalism* (2001) and *Naturalizing Epistemology* (1985). His most recent articles include "Précis of Knowledge and its Place in Nature" and "Replies to Alvin Goldman, Martin Kusch and William Talbot" (*Philosophy and Phenomenological Research*, forthcoming); "How to Refer to Artifacts" (in *Creations of the Mind: Essays on Artifacts and their Representation*, forthcoming); "Does Reliabilism Make Knowledge Merely Conditional?" (*Philosophical Issues*, 2004); "Sosa on Human and Animal Knowledge" (in *Sosa and His Critics*, 2004); "Conditions on Cognitive Sanity and the Death of Internalism" (in *The Externalist Challenge: New Studies on Cognition and Intentionality*, 2004).