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Dissident Versus Loyalist: Which Scientists Should We Trust?

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1.

The President of South Africa, Thabo Mbeki, recently raised considerable controversy in publicly questioning the link between the Human Immunodeficiency Virus, or HIV, and Acquired Immune Deficiency Syndrome, or AIDS. There is much at stake here. Mbeki is the most powerful policy-maker in South Africa, and his position on this matter could well determine whether or not thousands of persons are given, or are encouraged to take, anti-HIV medications for the prevention or treatment of AIDS.

As with most medical policy decisions, the decision to allocate funds to anti-HIV medication is made on the basis of testimony from scientists. The claim that HIV causes AIDS is a scientific claim, made on the basis of inference from complex experimentation, and the claim that such-and-such anti-HIV medication is effective is, similarly, a scientific question, made on the basis of statistical inference from controlled trials. What makes Mbeki's comments controversial is that he has been considerably influenced by what are now referred to as dissident researchers in one of the fields related to HIV and AIDS research. Mbeki has been reading research by and consulting with scientists who question a number of aspects of the orthodox view of HIV and AIDS, including the claim that HIV is a necessary cause of AIDS. Mbeki's claim that there may be gaps in the current understanding of HIV and AIDS and its applicability to the African demography of AIDS has brought about a vehement response from scientists convinced by the orthodox understanding. The most explicit sign that the opposition is in the majority is the so-called Durban Declaration, an open statement signed by over five-thousand scientists and stating that the evidence supporting the link between HIV and AIDS is "clear-cut, exhaustive, and unambiguous."[1]

Policymakers throughout the world make high-profile decisions on the basis of testimony of science, not only with respect to issues of public health, but also in their choice of routes for weapons development or space exploration, to cite just two high-profile examples. The rest of us make similar decisions when we decide to stop smoking cigarettes, take vitamins, or vote for a Green

political party, all of which are on the basis if testimony from science. All such decisions raise a troublesome and pressing issue with respect to the epistemological relationship between, on the one hand, the public and public policymakers, and, on the other hand, scientists. Do we have reason to believe a so-called Loyalist, someone who agrees with the dominant position in the scientific community, over a so-called Dissident, someone who is in some sense a member of that community but who disagrees in some salient aspect with the dominant position? Is a Loyalist in a better position to tell us the right theory than a Dissident?

To answer this question negatively would be to claim that there is no salient epistemic difference between the position of Dissidents and that of Loyalists. A scientist who disagrees with her community's dominant line will have a theory that is as equally worthy of hearing as a scientist who accepts the dominant theory. Mbeki clearly takes this line, as he powerfully and eloquently indicates in a letter written to a number of world leaders in April of 2000.

> Our search . . . is being stridently condemned by some in our country and the rest of the world as constituting a criminal abandonment of the fight against HIV-AIDS. Some elements of this orchestrated campaign of condemnation worry me very deeply. It is suggested, for instance, that there are some scientists who are "dangerous and discredited", with whom nobody, including ourselves, should communicate or interact. . . . Not long ago, in our own country, people were killed, tortured, imprisoned and prohibited from being quoted in private and in public because the established authority believed that their own views were dangerous and discredited. We are now being asked to do precisely the same thing that the racist apartheid tyranny we opposed did, because, it is said, there exists a scientific view that is supported by the majority, against which dissent is prohibited. The scientists we are supposed to put into scientific quarantine include Nobel Prize Winners, Members of Academies of Science and Emeritus Professors of various disciplines of medicine! Scientists, in the name of science, are demanding that we should cooperate with them to freeze scientific discourse on HIV-AIDS at the specific point this discourse had reached in the West in 1984. People who otherwise would fight very hard to defend the critically important rights of freedom of thought and speech occupy, with regard to the HIV-AIDS issue, the frontline in the campaign of intellectual intimidation and terrorism which argues that the only freedom we have is to agree with what they decree to be established scientific truths.[2]

In presenting this as an issue concerning "freedom of thought and speech," Mbeki reveals that he sees Dissidents and Loyalists as being on an equal epistemic level. A Dissident has just as much right to be heard by a public

policymaker as a Loyalist. To prohibit the position of a Dissident from being considered in the public sphere is to silence a position that has just as much epistemic right to be heard as the dominant position. There is nothing epistemically special, Mbeki thinks, about a scientific position being dominant. It is merely accepted by more scientists.

The alternative view is that Mbeki is wrong to put these two on a par. The issue is not a matter of leaving open the debate for the free consideration of the various voices, for there is an epistemic difference between the positions of a Loyalist and a Dissident. Policymakers are better off taking testimony from Dissidents, precisely because Dissidents are dissidents from the scientific community, and thus, less likely to be reliable. We have more reason to act on a theory accepted by the whole community than we do to act on a theory accepted by some distinct minority within the community. Inasmuch as the claims that Loyalists make are in line with the community, they have an epistemic advantage. We have a reason to choose a Loyalist as a source of testimony over a Dissident.

A proponent of the view that the layperson has better reason to trust a Loyalist need not deny that dissidence is a good thing. She can wholly agree that Dissidents, as community members who question standing theories, are good for science.[3] Nor need she deny that any particular Dissident case may be right. However, she will say that when someone standing outside of science, like Mbeki, looks to science in order to ground some course of action, then he should take a Loyalist and not a Dissident as his informant. At any particular time, a Loyalist will be a more justified source of beliefs than a Dissident. There is reason to think that this view of our testimonial relationship to science is the correct one.

2.

It may be objected that the issue is not one of testimony, of our simply trusting expert authority, but of assessing the evidence ourselves. Policymakers should decide what to do on a case-by-case basis, examining the evidence for and against undertaking a particular course of action. On this account, there is no important epistemic difference between Dissidents and Loyalists. They are simply two experts offering their sides of the story. Policymakers should hear both sides, but ultimately they should do what they judge to be the best course of action. They should follow their own assessment of the evidence.

This may be is how some laypersons, including Mbeki, see our relationship to science. To claim that Loyalists have no epistemic advantage over Dissidents is to leave the debate open for the policymaker to make up his own mind. If there is nothing epistemically special about the community, then when individuals outside of science are faced with scientific disagreement, the best

that we can do is to trust our own epistemic assessment on the matter. This would not be a happy situation. The sorts of claims we are considering can be complex and difficult to understand, much less to assess their support. Policymakers, like the vast majority of us, have neither the time nor the background education to properly consider the case for both sides. We are in no position to properly assess which side is correct in any given scientific disagreement.[4] This fight is best left to the scientists themselves. It would be best if we could establish that policymakers did not need to trust their own less tutored assessment of scientific issues.

What is at issue in deciding between a Dissident and a Loyalist is the epistemic value of the scientific community. Does the fact that a theory is accepted by a community give us any more reason to believe it than a theory that is accepted, by relevantly similar methods, by an individual who is not a member of the community? Is there anything epistemically special about the fact that Loyalist scientists belong to communities? Answering "no" does not mean that science is epistemically bankrupt. It does mean, however, that the epistemic reliability of science wholly lies in characteristics of science other than that of communal acceptance. Answering "yes" entails that at least part of what makes science a good source of beliefs is the fact that the commitments of scientists to theories is a communal affair, and that entails that someone outside of science has more reason to act on the claims of a Loyalist simply because she is a Loyalist than to act on the claims of a suitably-qualified Dissident who has used acceptable methods to support an alternative claim.

If a Loyalist is a better informant than a Dissident, then it must be because on the subject matter at hand a Loyalist toes the party line, and because there is something more dependable about the party line. Therefore, a successful defense of Loyalists as better informants will rely on an account of scientific theory-acceptance that reveals that community theory-acceptance is in some way preferable to individual theory-acceptance.

3.

Getting our beliefs from science involves getting them from what we take to be sincere assertions from other persons. We may call this a testimonial source of beliefs. Testimonial sources are to be contrasted with individualist sources, which include perception or inference, and in which our beliefs do not come via the commitments of other persons.

In assessing a testimonial source of beliefs, or in comparing two testimonial sources of beliefs, we must consider how individuals come to make the assertions that they do. This does not mean that the justification of testimony *per se* depends upon the justification of an informant's commitments. There is an ongoing debate over whether the justification of testimony as a belief-

forming process reduces to the justification that the informant has for her own belief.[5] If reductionists are right, then our justification for gaining beliefs from someone else's testimony derives solely from her justification for holding the commitments to which she is testifying. Testimony is not, itself, a source of justification. However, whether or not reductionism is true, we must be allowed to compare testimonial sources, to determine whether one is better than another, and this will involve checking the processes by which the informants come to form the beliefs that they have. Even if the justification for ever trusting another person does not reduce to the justification that informants have for their beliefs, we can appeal to that type of justification to compare potential informants with regard to particular subject matters.

One way in which a testimonial source of beliefs can be better than another is by an absence of bias. If we can show that one person is less likely to be biased in the determination of her own avowals than another person, then, everything else being equal, we have more reason to trust the one rather than the other.

Doxastic bias, or bias in belief-formation, is the tendency to be moved to belief by considerations that are not related to the truth regarding the subject matter at hand. You might be biased toward believing that it will be a nice day tomorrow if it will be your birthday, or you might be biased toward a theory of your own devising. To be biased towards believing something is to lean toward believing it as a consequence of considerations that you do not think show to be true. The range of determinants thought by various writers to bias scientific theory acceptance includes scientifically desirable features of theories, like elegance, simplicity, or usefulness, as well as the self-interests of scientists themselves.

We can alternatively define a biased belief or theory-commitment as a belief or theory-commitment that is properly explained non-epistemically. Non-epistemic explanations are explanations that present a commitment as being brought about other than for the purpose of being committed to a truth about the subject matter at hand. As an illustration, consider an explanation that is ambiguous between an epistemic and a non-epistemic version.

> Jones is committed to a theory because Jones judges the theory to be more elegant than any of its rivals.

What makes this explanation epistemic or non-epistemic is Jones's own view of elegance. An epistemic version of this explanation portrays Jones as being committed to the theory because he believes that elegance is somehow correlated with truth. The involvement of this background belief shows that Jones is committed to the theory in order to be committed to a truth about the subject matter at hand.

Were we, as explainers, convinced that Jones does not hold some background belief like this, our explanation would be non-epistemic. A non-epistemic explanation of Jones's belief portrays Jones as committed to the theory because he simply prefers elegant theories. Jones accepts the theory because he values elegant theories, but not because he thinks elegance is an indication of truth. Jones is committed to the theory for some purpose other than being committed to a truth about the matter.

The non-epistemic version presents Jones as biased. To be biased toward commitment to a particular theory or type of theory is to be motivated toward committing ourselves to that theory by non-epistemic factors. It is to be committed to a theory but not for the purpose of gaining a truth about the matter. The non-epistemic explanation of Jones's theory-commitment depicts his bias toward elegant theories as having led him to be committed to the theory. The epistemic version also refers to Jones's preference for elegant theories, but not because he is biased toward them. Instead, Jones thinks that an elegant theory is more likely to be true, *ceteris paribus*, than a non-elegant theory.

Bias is something that we would like to be missing from our informants, scientific or otherwise. If we want to undertake a successful action with regard to some matter, then we will most likely want a truth about the matter, and we will want our informants to have been similarly motivated. We will want them to be committed for the purpose of committing themselves to the truth, and not for some other purpose, like achieving fame or making money. Consequently, if we can show that a Loyalist position is less likely to be biased than a Dissident position, then individuals standing outside science have some reason to give more credence to a Loyalist in our appeals to the authority of science.

4.

A doxastic commitment is unbiased if the commitment possesses each of two singly necessary and jointly sufficient characteristics. The first is that the believer's commitment is determined by her consideration of what she takes to be epistemic considerations. The second is that the commitment is readily affected by counterevidence. Each of these conditions of non-biased beliefs needs clarifying, especially the notion of being readily affected. Such refining, however, is more pertinent to the determination of whether these conditions hold in any particular case, and not to whether they in general look to be true of current scientific practice.

The motivation for the first condition should be obvious. If a commitment is held with the purpose of being committed to a truth, then the factors responsible for that commitment are factors that the subject takes to be truth-conducive. However, by itself this is not a sufficient criterion for epistemic

determination, because the subject may not give up the commitment if the responsible truth-conducive factors are taken away. For example, Jones may be committed to a theory because of its predictive power, but if Jones's commitment were to remain even if he were to discover that the theory does not have that power, then we would rightly retract the epistemic explanation of Jones's commitment. Compare someone whose belief that members of a certain race of people are intellectually inferior has been determined by reading that they have smaller skulls. In order to determine whether her belief is unbiased, we want to know whether she would be affected by challenges to, say, the proposition that there is a relationship between skull size and human intellect. If it is not, if she retains her belief that the members of the race are intellectually inferior in spite of our presenting strong evidence against this proposition, then we would question whether her belief that the race of people is intellectually inferior is epistemic. We would question whether she is looking for a truth about the intellectual abilities of the members of the race. Non-biased commitments must be sensitive to counterevidence.

The second condition on unbiased believing is intended to capture this intuition. If a belief deserves an epistemic explanation, then it must be oriented toward the truth. Believers must show themselves to be after the truth about the subject matter at hand, and not some other non-cognitive goal, and to be truth-oriented, a commitment must be sensitive to counterevidence. The opposite of an evidence-sensitive belief might be called an *idée fixe*. A belief that is fixed or rigid in the face of evidence to the contrary reveals the subject to be committed to something other than truth about the matter at hand. Consequently, if we can see that a person's belief is responsive to counterevidence, then we know that it is truth-oriented. Like the first condition of non-biased believing, this is not a sufficient condition, because it is possible for a non-epistemically determined belief to be apparently evidence-sensitive. A case of wishful thinking, for example, may be susceptible to perceptual counterevidence. The deluded belief of a boss in her employee's honesty will surely not survive her catching him with his hand in the till.

5.

The two conditions of non-biased believing are properties of communal scientific theory acceptance. One of the most important lessons about scientific practice to be learned from the work of Thomas Kuhn is that the final stage of theory acceptance is communal.[6] The end of the process of investigation and debate is characterized by a remarkable unity in the scientific community in its acceptance of theories. Kuhn further claims that this feature is a defining characteristic of scientific communities. A community is not a scientific community until its members accept theories with unity. Indeed, Kuhn also sug-

gests that this characteristic constitutes scientific progress. When all members of a community accept a theory, the community as a whole can move on to a new area of study.[7] A practice of unanimous commitment will inevitably lead to clear and community-wide patterns of doxastic change, patterns that can be readily interpreted as progress. By contrast, in a field like philosophy or history, Kuhn suggests, the lack of communal agreement means that it is harder to come by any community-wide long-term change that can be construed as progress.

Whether or not Kuhn is right to define either scientific communities or scientific progress in terms of unity in acceptance, there is something to his claim that such unity is a striking characteristic of scientific communities. Although there is enormous conflict between individual scientists on current areas of study, there is notable agreement on previously-debated claims. Conflict over theory acceptance inevitably ends in community-wide acceptance. If there were not considerable unity in scientific theory acceptance, then the notion of a scientific dissident would have no purchase. The very notion of an intellectual dissident gets its grip from an individual being set in opposition to a powerful and disagreeing opponent. While a political dissident is up against individuals who hold positions of power, such a hierarchy of power does not characterize science. Thus, the opponent of a scientific dissident is the community, or some majority of the community, itself. Scientific dissidents are dissidents from an entire scientific community. Again, we can contrast science with philosophy. While there are dominant and prevailing views in philosophy, the philosophical community is not characterized by the unity that allows for a meaningful notion of a philosophical dissident.

Essential to the community-wide nature of scientific theory acceptance is the public nature of scientific discourse. It is essential to the community's unity in acceptance that all members of the community have ready access to claims and their defenses. In this regard, we can see scientific publishing, and scientific theory-acceptance, as a two-stage public peer reviewing process. In the first stage an article passes a given journal's editors and reviewers, and is published. It is made public, presented to the community at large. The entire community acts as the second stage of peer review for an article. If published claims are not challenged, then they are available for incorporation by the community in some form. Such findings can be said to be accepted into the community's theoretical edifice. If the claims made in a published article are not challenged by members of the community, and do not disappear into obscurity, then they become part of the community's commitments.

Insofar as this route to acceptance is followed, both conditions of unbiased believing are met. The first is met because the publication and public consideration of the claim at hand will be solely concerned with evidence for the claim. In no theoretical discourse will the public defense of claims be non-

epistemic.[8] Scientists do not defend their theories by pointing out that they are, say, good for society or easy to teach. Therefore, insofar as communal acceptance of a claim is dependent upon publication and defense of the claim, then communal acceptance will be the result of the consideration of epistemic support for it.

The second condition of unbiased believing is met because scientific communal acceptance of claims is dependent upon there not being any counter-claims made within the community. Scientific communal acceptance of a theory is dependent upon publicly asserting, and waiting for public acceptance of, a claim. Publishing serves not only to communicate the claim, but it furthermore allows it to be countered. Whether or not a community accepts the claims made in a journal article depends upon whether members of the community mount epistemic challenges to them. Community-wide acceptance is thus dependent upon lack of challenge within the community. The lack of challenge, and the community's subsequent use of the theory, means that the community as a whole has accepted it.

It follows that the acceptance of a theory by a scientific community is evidence-determined and evidence-sensitive. Acceptance does not occur if members of the community successfully question the theory at hand. It is important, in this regard, that not only public consideration of, but also challenges to, a given claim will be epistemic. Non-epistemic concerns are not a part of public scientific discourse. Scientists do not challenge each others' theories by pointing to their pragmatic shortcomings. They challenge theories by questioning the evidence for them, or by forwarding evidence for alternative incompatible claims. Only if evidential concerns are not forthcoming from the community will a claim gain community-wide acceptance. Like any believer, a scientist will not be swayed by a challenge if she does not appreciate that challenge. Not just any challenge will prevent a claim from being accepted. But scientific endeavor, with the end of community-wide acceptance, is such that challenges can be publicly aired, and such a capacity is to allow the possibility of challenge blocking community-wide acceptance.

If this is right, then both conditions of unbiased believing are characteristic of community-wide theory acceptance, and thus we have reason to presume that a theory acceptance by a community is for the purpose of gaining some truth about the matter. The public discursive nature of science, which is a necessary constituent of the unified theory acceptance by a community, is also the source of its lack of bias. The communal acceptance of a theory is dependent upon evidential considerations, as well as whether or not the members of that community evidentially challenge that acceptance. Thus, there is reason to presume that we should see community-wide acceptance as being truth-oriented.

6.

The conclusion we have come to does not apply to explanations of theory commitments of an individual scientist, unless the explanations are wholly in line with the commitments of the community. The acceptance by the community, dependent as it is upon publication and potential public evidential challenge, is to be seen as truth-oriented. We cannot be so assured with respect to an individual's acceptance. The lesson to be drawn is that when we are looking to science as an authority, we have at least one reason to listen to the members of the community who are loyal to the party line, and not to those who dissent from it. We have no assurance that the commitments of Dissidents are not the result of bias.

It does not follow that Dissident scientists are never right or justified in their commitments. President Mbeki's recent revival of the debate over HIV and AIDS has generated the usual negative rhetoric from the dominant community. Members of the dominant community have declared the claim that HIV causes AIDS an irrefutable fact, and they have referred to Dissidents as crazy and attention-seeking. None of what has been said here entails any of this. No reason has been given to think that any given Dissident position, including this one, is either unjustified or wrong. All that has been established is that Dissidents are susceptible to non-epistemic bias in a way that individuals who toe the community line are not. Policymakers and other laypersons standing outside of science, like Mbeki, need to hedge their bets with the dominant community, and not with dissenting individuals trying to influence the community. While the dominant community may not be right, we have reason to think that Loyalists are not being moved by bias, and that may be the best that we, and policymakers, can do.

Notes

1. Robert Johnston, Matthew Irwin and David Crowe, *Nature* 406 (6791), (6 July 2000), p. 3.
2. See www.virusmyth.com.
3. See Phillip Kitcher, *The Advancement of Science* (Oxford: Oxford University Press, 1993), ch. 8.
4. See John Hardwig, "Epistemic Dependence," *Journal of Philosophy* 82 (7), (1985) pp. 335–349.
5. See Elizabeth Fricker, "Telling and Trusting: Reductionism and Anti-Reductionism in the Epistemology of Testimony," *Mind* 104, (1995), and C. A. J. Coady, *Testimony* (Oxford: Oxford University Press, 1992).
6. Thomas Kuhn, *The Structure of Scientific Revolutions* 2nd ed., (Chicago: University of Chicago Press, 1970).
7. Ibid., Postscript, § 6.
8. See Richard Foley, "Some Different Conceptions of Rationality," in Ernan McMullin, ed., *Construction and Constraint* (Notre Dame, Ind.: Notre Dame University Press, 1988).