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Is the argument from inductive risk merely research ethics?

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Is the argument from inductive risk at heart simply an argument about research ethics? If so, does it really challenge the value-free ideal as an ideal? After all, proponents of the value-free ideal do not generally argue that ethics should not place constraints on research. Perhaps the argument from inductive risk merely points out that in some situations, our ethical duties restrict our ability to strive towards the ideal?

Once, while waiting for the coffee to drip in the break room at the Department of Philosophy at Tampere University, I started a discussion about this question with Panu, but then something else came up, and we never managed to finish the discussion. This, therefore, is my answer to his question as I understood it.[1] In brief: Yes, the argument from inductive risk is at heart a research-ethical one, or rather just an ethical one. But what this shows is that the value-free ideal is untenable as an ideal –precisely because even its proponents usually agree that researchers are ethical agents with all the usual ethical responsibilities.

I will start by introducing the value-free ideal and the argument from inductive risk and then argue that ideals ought to be able to guide action. Finally, I claim that

[1] It is fully possible that I misunderstood Panu's argument (and I could not check this, because he is not supposed to know about this book). If that is so, this paper is an exercise in argumentation against an imaginary stance – a fairly common thing in philosophy.

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the argument from inductive risk does not just point out some constraints to our ability to follow the value-free ideal but shows that it is undesirable as an ideal.

While much earlier versions of the demand that science be value-neutral or value-free can be found (see Proctor 1991), it is common to name Max Weber as the first explicit proponent of the value-free ideal. He formulated it to argue that social sciences can and should strive for objectivity:

> Accordingly, cultural science in our sense involves "subjective" presuppositions insofar as it concerns itself only with those components of reality which have some relationship, however indirect, to events to which we attach cultural significance. [...] But it obviously does not follow from this that research in the cultural sciences can only have results which are "subjective" in the sense that they are *valid* for one person and not for others. Only the degree to which they interest different persons varies. In other words, the choice of the object of investigation and the extent or depth to which this investigation attempts to penetrate into the infinite causal web, are determined by the evaluative ideas which dominate the investigator and his age. In the *method* of investigation, the guiding "point of view" is of great importance for the *construction* of the conceptual scheme which will be used in the investigation. In the mode of their *use,* however, the investigator is obviously bound by the norms of our thought just as much here as elsewhere. For scientific truth is precisely what is *valid* for all who *seek* the truth. (Weber 1904/1949, 82–84.)

In other words, while "the value-ideas which dominate the investigator and his age" unavoidably influence what is studied in the social sciences, the actual research can and ought to be free of values. After Weber's time, the ideal became more widely and explicitly accepted, and for example Kuhn's (1977) distinction between epistemic and non-epistemic values has influenced its formulations. Here are two characterisations by its contemporary proponents:

> The ideal of value free science states that the justification of scientific findings should not be based on non-epistemic (e.g. moral or political) values. (Betz 2013, 207.)

> For example, it is no abandonment of epistemic ideals to reject a research project aimed at developing a doomsday device. Building a doomsday device is simply not the sort of research project most people consider valuable to pursue. But it would be an abandonment of epistemic ideals and scientifically unacceptable if one used ethical criteria in the evidential assessment that a doomsday device is technologically feasible. (Hudson 2016, 187–188.)

Adversaries of the ideal have also given characterisations of it – here are two examples:

> It does not hold that science is a completely value-free enterprise, acknowledging that social and ethical values help to direct the particular projects scientists undertake, and that scientists as humans cannot completely eliminate other value judgements. However, the value judgements internal to science, involving the evaluation and acceptance of scientific results at the heart of the research process, are to be as free as humanly possible of all social and ethical values. (Douglas 2009, 45.)

> There are various ways one might interpret the value-free ideal (VFI), but the most common way is the claim that only scientific or "epistemic" values can influence scientific reasoning or inference, while the only place for other values, including social and ethical values, should be in external aspects of science, such as choice of research projects or decisions about acceptable methods. [...] [T]he VFI is an all-or-nothing affair – either social and ethical values should play a role in the internal phases of scientific reasoning, or they should not. (Brown 2024, 2/31.)

To summarise, the value-free ideal states that while non-epistemic values can legitimately influence the "external aspects" of science, such as the choice of research projects, only epistemic values – that is, values that promote the attainment of truth – have a legitimate role in the central stages of scientific research, especially in the assessment of evidence and the justification of findings.

The argument from inductive risk (AIR) is one of the most influential arguments against the value-free ideal. There are several earlier versions, notably one by Rudner (1953), but here I will focus on Douglas's (2000; 2009) more recent and stronger formulation.

The argument starts by stating that scientists have the same moral responsibilities as everyone: they are responsible for their actions as scientists in the same way they are responsible for their actions as human beings in general. Therefore, it is their responsibility to consider the predictable, non-epistemic consequences of any errors they make in their research: a scientist, as a scientist, has no special licence to recklessly or negligently cause risk to others. Because of this, the predictable consequences of their research, including the predictable future use of their results, must influence their decisions when they face risks of error. Such risks, inductive risks, are ineliminable in all empirical research. For instance, when a scientist chooses between a method that is known to produce some false negative results but rarely false positive ones, and another that is known to produce some false positive results but rarely false negative ones, they must consider the predictable consequences of the choice: would one type of error be more perilous than the other? Or when they evaluate whether they have strong enough evidence to make an inductive leap to

the acceptance or rejection of a hypothesis, they must take into account what the non-epistemic cost of an error might be. Such considerations require non-epistemic values. An Assyriologist interpreting weathered cuneiform signs can legitimately take more and different kinds of risks of error than a medical researcher developing a vaccine. Researchers face inductive risks throughout the research process. Therefore non-epistemic values must also influence the internal stages of the process.

This contradicts all the formulations of the value-free ideal that I mentioned above. It clearly contradicts the idea that non-epistemic values must not influence the internal stages of the research process. And more specifically, it contradicts the idea that the justification of scientific findings or the assessment of evidence should not be based on non-epistemic values. The Assyriologist can legitimately accept a hypothesis with weaker evidential support than the medical researcher, meaning that non-epistemic values have a legitimate role in the assessment of evidence and the justification of scientific findings.

As noted, AIR is not so much a research-ethical argument as simply an ethical argument. It is based on the idea that a researcher is responsible for the foreseeable consequences of their actions; recklessness and negligence are unacceptable, even in the role of a researcher. As Panu said, many proponents of the value-free ideal have no objection to this.

For what follows, it is important to note that AIR does not only demonstrate that a researcher must allow non-epistemic values to influence their decisions in situations where their research has foreseeable non-epistemic consequences. It also shows that a researcher has a duty to assess whether there are any such foreseeable consequences that should be taken into account. As Douglas emphasises, such assessments are often done collectively in the field in question. But sometimes it is the individual scientist conducting cutting-edge research who is in the best position to grasp the potential implications and risks of their work. (Douglas 2009, 83–84.)

Does this threaten the value-free ideal as an ideal? Several philosophers have argued that it does not: even if unattainable, it remains a good ideal (e.g. Hudson 2016) or worth pursuing (Menon & Stegenga 2023). In a recent article, Matthew J. Brown (2024) has presented what I find to be strong arguments against various versions of this idea.[2] I will focus on what I take to be a version of one of these arguments.

Suppose we gave up the requirement that the value-free ideal is an "all-or-nothing affair" (Brown 2024, 2/31); in other words, if we treated it like the requirement to use the research methods that are epistemically best for the task at hand. While this is ideally how we should act, we are prepared to make concessions if the epistemically best method is not ethically acceptable. Research ethics places constraints on research. Similarly, we could think that AIR simply identifies a type of situation where, for ethical reasons, our ability to follow the value-free ideal is restricted.

[2] Brown's Sisyphean paper, which addresses numerous recent attempts to defend the value-free ideal, was published a week before the completion of this piece. I can recommend it highly, even though it made finishing this paper somewhat challenging.

I will argue that this does not work, and that the analogy does not hold. For my argument, I need a criterion that I can use when assessing whether an ideal is good or not. When discussing normative ideals, Brown presents a good basis for such a criterion: he argues that normative ideals ought to be able to guide action, and normative ideals in science must be able to do so in science: "we are not concerned with what is epistemically preferable, but what is preferable all things considered. We don't want an epistemic ideal, but a *scientific* ideal, that is, an ideal to guide scientists who have both epistemic and social duties." (Brown 2024, 17/31.)

What would make the value-free ideal a poor ideal for science? In my view, it would be a poor, undesirable ideal if it guided action in a harmful or unjustified way, forbidding something that is always legitimate in science.

Could one think that the value-free ideal forbids a researcher from acting in a way that, in light of AIR, is their duty, but such cases are exceptions where the normally prevailing ideal must be temporarily set aside? Could AIR, then, simply highlight a type of situation where acting according to the ideal is not possible due to overriding ethical reasons? In other situations—that is, when research has no foreseeable non-epistemic consequences—the value-free ideal would nevertheless guide action as we would like it to do.

AIR is often taken to imply that if research has no foreseeable non-epistemic consequences, then researchers have no ethical obligations that would require non-epistemic values to play any role in the central stages of the research process. But if we accept the criterion for a poor ideal that I formulated above, the key question is whether it is still legitimate for a researcher to allow non-epistemic values some role in the central stages of the research process. If it is legitimate in situations where the research has no foreseeable non-epistemic consequences, then the value-free ideal forbids actions that are generally legitimate, making it a poor ideal.

Does AIR show that it is legitimate to give non-epistemic values a role in the central stages of research even in such situations? I believe it does. Remember that a researcher has a duty to assess whether their research could have some foreseeable non-epistemic consequences such that they should be taken into account when weighing inductive risks. Failing to make this assessment would be negligent. And one needs non-epistemic values for making such an assessment: What counts as a sufficiently foreseeable consequence? Is a remote possibility of some future application enough if the associated risks are particularly severe? One cannot answer such questions without non-epistemic values.

But a diligent researcher might not be satisfied with making this assessment just once. This is because such matters cannot necessarily be fully determined before the research begins; concerns about the possible non-epistemic consequences of a research project may well arise when the research is already in progress. Douglas (2009, 83) gives an example of a situation where researchers' judgments about the foreseeable consequences of their work changed in this way: before December 1938, nuclear physicists could not imagine the atomic bomb, but after the discovery of fission they could. Such a change can happen at any stage of research. To use my

imaginary example, an Assyriologist might realise midway through their research that one possible interpretation of the weathered cuneiform inscription they are studying could be politically sensitive and presenting it might in principle lead to violence.

It is therefore legitimate for a researcher to assess the matter throughout the research process: are there, at this stage of my project, any foreseeable non-epistemic consequences of the work in progress that would require, for instance, tightening the criteria for accepting or rejecting a hypothesis, or using a different method in the analysis of the data? Such assessments require non-epistemic values even if the answer is negative – for example, if the Assyriologist ultimately decides that the risk is so small that it can be ignored, and that there is no need to make any changes in the ways in which they weigh inductive risks. Even in such a case non-epistemic values have played a role in the assessment of evidence.

Brown makes this point in his answer to Menon and Stegenga (2023), who suggest that researchers should often adopt value-mitigating strategies rather than make explicit value judgements:

> While there may be contexts where value-mitigation may be a good idea, in other cases it is crucial that scientists use (non-epistemic) values to weigh inductive risks, as they admit. More importantly, there is no way to tell ahead of time which kind of case we are in; so, on Menon's and Stegenga's own view, scientists will have to continue weighing non-epistemic values throughout inquiry in order to determine whether value-mitigation is permissible or superior to explicit value judgment. Whether to pursue value-mitigating strategies must be judged in each case according to non-epistemic values, effectively undermining the idea that this approach is value-free. (Brown 2024, 19–20/31.)

Whether the kind of monitoring and occasional reassessment I have described can be considered a duty depends on the context, but it is certainly always legitimate. As Douglas argues, scientists can be expected to "meet basic standards of consideration and foresight that any person would share, with the reasonable expectations of foresight judged against the scientist's peers in the scientific community" (Douglas 2009, 84). While this sets limits on what can be considered a duty, scientists are still allowed to go beyond their duty. We cannot predict at which stage of research it might be possible to recognise a potential non-epistemic consequence of the work we are doing. Therefore, it is always legitimate for a researcher faced with inductive risks to pause and consider whether their assessment of the foreseeable consequences of their work remains unchanged, and whether they need to adjust how they weigh inductive risk.

In other words, the argument from inductive risk shows that it is generally – and not just in some cases – legitimate for researchers to allow non-epistemic values to have a role in the central stages of the research process. It is legitimate (and in some

situations desirable or even an obvious duty) to monitor whether, during the course of the research, any foreseeable consequences have emerged that would warrant adjusting the criteria used in weighing the risks of error. Such vigilance requires non-epistemic values. Therefore, the value-free ideal is a poor ideal for science: it forbids researchers from doing something that is legitimate.

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