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### Comments on Anderson

Commentary on Elizabeth Anderson's "Uses of Value Judgments in Science"

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Elizabeth Anderson's article uses a case study of divorce researchers who begin with different value commitments to provide criteria for judging the legitimacy of politically guided scientific inquiry. The case study, and Anderson's argument, is meant to address the following questions opened up by the underdetermination argument: how do we decide which values are appropriate and which inappropriate as background assumptions? Are there any constraints on the extent to which values or political commitments may legitimately guide scientific research? Anderson argues that the underdetermination argument has the following

weaknesses: 1) it treats all values and political commitments the same; 2) it assumes that all values have equal epistemic value; 3) it treats values and political commitments as "exogenous" (2): as external to the system of scientific inquiry. The exogenous nature of value judgments assumed by the underdetermination argument has two different but related interpretations: values enter scientific inquiry only as background assumptions, rather than as hypotheses, and values are not themselves revised in light of empirical evidence.

Anderson wants to use the divorce research case study to show that evaluative claims can enter science as hypotheses, not simply as background assumptions. In addition, she wants to argue that, like "factual" claims, evaluative claims can be subject to revision in light of countervailing empirical evidence. Finally, she wants to show that some (non-epistemic) value commitments can recommend themselves in virtue of their epistemic value.

The divorce research that Anderson analyzes is a good vehicle for addressing the faults she identifies in the underdetermination argument, since the case study shows that all values are not created equal with respect to scientific inquiry, since some values (like Stewart's feminist values) can prove themselves to be more epistemically fruitful and to encourage better habits of inquiry. In addition, Anderson's divorce case study shows the ways in which scientific inquiry can inform and constrain value judgments. In sum, Anderson tries to address the question of legitimacy by arguing that not all moral and political value judgments are equal because some can be more epistemically fruitful than others, and some value judgments are held in ways that allow for their revisability in light of empirical evidence.

Anderson's attempt to give a more nuanced and sophisticated account of value judgments than has, for the most part, appeared in feminist philosophy of science is an important contribution to the literature. And I am, like Anderson, very sympathetic to the holist program. Yet I will

take issue with her attempt to model value judgments on 'scientific' judgments. I think there are some important asymmetries here that Anderson overlooks, and I would like to push those a little farther. I have put 'scientific' in scare quotes here, too, since I will close the paper with some queries about what that term means, and whether Anderson's implicit commitment to the seamlessness of scientific inquiry is a commitment she wants to maintain.

### 1. Limits of symmetry between moral/political value judgments and factual judgments

In this section, I want to push a bit on Anderson's attempts to show that ethical judgments and factual judgments are closer kin than has traditionally been assumed, both in feminist philosophy of science, and in traditional accounts of objectivity. Anderson's claim that "science is value free only if values are science-free" (7), and the argument she presents to establish the revisability of ethical judgments in light of evidence is meant to emphasize the ways in which ethical judgments and factual judgments blend together in a variety of ways. Yet, while factual and ethical judgments might, in abstraction, be strikingly similar, there is an asymmetry between them that appears more clearly when they are placed in the context of inquiry.

The case study approach to answering the question of if (and when) values are legitimately deployed in scientific research is an appropriate methodology, given Anderson's overall commitment to an empiricist approach to the legitimacy question. Anderson does not try to say that there are some value commitments that are, in virtue of their content, more epistemically fruitful.<sup>1</sup> Instead, she poses the question as an empirical question: what can we learn from this particular case study? It may turn out that some categories of value judgments are, in virtue of their content, more epistemically fruitful than others, but that issue will be resolved, not *a priori* in virtue of that content, but only as a

result of empirical investigation. Thus, the case study presents empirical evidence to support Anderson's claims that not all moral and political values are epistemically equal, and to show that evaluative claims are not always "science-free"—that is, they are responsive to counter-evidence and can be supported by factual claims.

Anderson's conclusion—that moral and political values are responsive to evidence and counter-evidence—seems right, and her argument for that conclusion on the basis of divorce research is persuasive. In the case study, the question of whether divorce is good or bad for families is the evaluative question that is up for debate. As Anderson makes clear, what makes the Wallerstein *et al* study inferior to the Stewart study is not necessarily the content of the value commitments with which the investigators begin, but the fact that the Wallerstein study makes perspicuous a smaller range of relevant evidence than the Stewart study uncovers. The Wallerstein study begins with value commitments that are less fruitful epistemically than the commitments with which the Stewart study begins, and it is this fact that determines the relative legitimacy of the value commitments that serve as background assumptions, help to construct the object of inquiry, and inform methodological decisions. Value judgments here serve both as background assumptions and as hypotheses, since the empirical evidence gathered in the study is intended to support a conclusion to an evaluative question: is divorce bad for children?

Insofar as evaluative claims function, within inquiry, as hypotheses, Anderson's attempt to show that moral and political value judgments are much like factual judgments works. In the role of hypotheses, evaluations (and factual judgments) are explicitly put to the test, so to speak. When evaluative claims function as hypotheses, we have left open the possibility of not committing to them.

Yet, insofar as her conclusions about the defeasibility of value judgments are limited to the ways in which those judgments function as hypotheses rather than as background

assumptions, the scope of Anderson's conclusions about the legitimacy of deploying value judgments in science might need to be limited to inquiry that is aimed at asking evaluative questions. This, however, is not a problem as far as I am concerned, since I am skeptical of attempts to generalize from case studies to conclusions about the category of 'science in general'. I will say more about this later.

Turning to the role that value judgments play when they enter inquiry as background assumptions, however, the asymmetry becomes more pronounced. In order to show this, I want to take up Anderson's attempt to show, by means of the case study, that some non-epistemic value judgments can have greater epistemic value than others. In the divorce case study, the Stewart team's feminist values turn out to have this virtue, while the Wallerstein team's value commitments result in relatively poorer epistemic conditions.

But let us suppose, however, that we learn from further case studies that, for example, sexist values turn out to be more epistemically fruitful than feminist values. Would we, then, be led to accept sexist values in virtue of their greater epistemic value? Posed this way, the possibility points to the tension between epistemic values and moral or political values: would an increase in epistemic fruitfulness be a good trade off against moral and political values? Would we be willing to justify our acceptance of sexist values because such a revision would lead to greater epistemic fruitfulness?

We might be able to resolve the dilemma by reverting to a non-realist view of moral and political commitments—that, at least in this case, we will treat our values instrumentally, rather than as real commitments with normative force. Yet, it seems to me, were we able to do this, those value commitments would cease to be value commitments, since, by at least some understandings of moral values, what makes moral values what they are is the fact that they cannot be traded for increased epistemic value, nor could they be held "instrumentally" the way that certain

scientific background assumptions may be. A small case study of my own will serve to elaborate on the asymmetry I see between moral and political value judgments and "factual" judgments *qua* background assumptions.

Recent work in neuroscience has focused on brain circuitry, reward expectation, and behavior (for example, Gold 2003). The background assumptions that operate in these studies connect the expectation of reward (and its gratification) with certain patterns of brain activity to ask questions about how reward expectation might create 'behavioral biases.' In order to measure a subject's expectation of reward, and how that expectation might lead to behavioral biases, the investigators measure activity in particular areas of the brain and changes in the patterns of activity in those areas, along with changes in eye movements. The changes in eye movement are the stand-in for 'behavior,' while the brain activity stands in for 'decision-making.' As a philosopher, or perhaps simply as an interested and educated observer, I might doubt that the gratification of expectations of reward can be identified with brain activity. Similarly, I might doubt whether eye movements count as behavior. Yet, I can see the instrumental value of such assumptions. The investigator herself might even have doubts about the metaphysical commitment to mind-brain identity which is the major premise guiding such research, or she might be agnostic about that particular assumption, but she might be willing to commit to such assumptions with this anti-realist fiat: it is useful, but it is not necessarily true. Its instrumental value justifies its deployment regardless of its truth-value.

This points to a rather significant asymmetry between moral and political value judgments and "factual" claims *qua* background assumptions. Insofar as we can hold background assumptions without committing ourselves to their truth value (we may hold them provisionally, or instrumentally) they seem to be unlike value judgments, which seem to demand something more like a realist interpretation if they are to count as moral and political value judgments. When

we treat evaluative claims as hypotheses, we are neither treating them instrumentally, nor as true value judgments, since they do not yet have any normative force. If my hypothesis is that divorce can be good for children—and this is merely an hypothesis, rather than a background assumption—then I have yet to make up my mind about whether it does, in fact, merit my adherence. Yet, as background assumptions, value judgments cannot really be “up for revision” the way hypotheses can, nor can they be held instrumentally (the way factual or metaphysical assumptions can) and still constitute value judgments. That is, insofar as value judgments seem to require a more realist commitment to their truth value than do factual claims, as background assumptions they seem to be more recalcitrant to revisability. We might give up certain factual background assumptions for other factual background assumptions in order to gain epistemic fruitfulness, for instance, but it is not clear that we could switch our value judgments at will in the same way. Insofar as the judgments in question are truly value judgments, then they will not be revisable to the extent that factual claims can be.<sup>2</sup> In the context of inquiry, then, there is a tension between the role of background assumption and the role of value judgment. The normative force of value judgments—linked to the realistic attitude that defines them—sits uneasily alongside the in-principle revisability of background assumptions. It is only when they cease to function as value judgments that they are revisable in the way that factual statements are. While background assumptions that are factual might be held instrumentally, as in the case of the premise of mind-brain identity in my case study above, value judgments cannot be so held and still remain value judgments. Thus, I take it that there are important asymmetries between factual claims, and moral and political value judgments, depending on the role they play within the context of inquiry.

## **2. On the term ‘science’: is there such a thing?**

As I said earlier, the fact that the case study Anderson presents is research which attempts to give an explicitly evaluative answer to a question about divorce might limit the extent to which we can generalize from this case study to draw conclusions about the legitimacy of value judgments in science generally. Much of the research we call ‘scientific’ is aimed at answering questions that seem to have no evaluative content, even if they might, in some contexts, have relevance to evaluative judgments. Yet I am skeptical generally of the coherence and usefulness of the term ‘science’ in its general sense, and while I think the case study method is a real advance in feminist science studies, it does point out the arbitrary nature of the category, and the limited applicability to the category of conclusions based on such studies.

I want to advocate an acceptance of the extensional definition of the term, in contrast to the usual attempts to define ‘science’ in terms of a method, or in terms of its objects. Yet, if we do that, we must, I think, give up on attempts to draw conclusions about ‘science’ from studies of particular sciences.

Popper thought that the sciences shared a method of falsification. Yet, much of the later analysis of how science is actually carried out—an empirical enterprise, rather than one of rational reconstruction—shows that Popperian falsificationism fails to capture much of the process of scientific reasoning. If we reject the Popperian impulse here, and notice, as much of 20<sup>th</sup> century philosophy of science has, that the myriad of disciplines we call ‘science’ seem to share a method only in the most trivial way, then we are left scratching our heads about why we would want to move from case studies in particular disciplines to conclusions about ‘science in general.’

It seems to me that Anderson accepts the Quinean view that science is just a more sophisticated version of our everyday reasoning—a view I will call the ‘seamlessness view’ since it assumes that everyday reasoning is seamlessly

connected to science and scientific reasoning. On the seamless view, 'science' is merely a more sophisticated version of our everyday reasoning. On this reading, the term 'science' is simply a stand-in for any kind of inquiry that is fact-based or evidence based. If so, then it seems that the issue of the legitimacy of using moral and political value judgments in science should be a pseudo-problem, since it is the kind of reasoning we do everyday. We cannot draw any particularly interesting conclusions about scientific reasoning that we could not draw from our everyday reasoning.

Do we want to take the strong normative stance *vis-à-vis* science that is implied instead by a Popperian version of falsificationism? Without such a strong definition, I am not sure that there is much value to making claims about 'science' as a general category. When one considers the differences among, for example, physicists or psychologists alone, one is presented with a dizzying array of approaches and methods. The case study method is compelling, but it is compelling because the local issues about the negotiation of comparative methodologies, the question of what kinds of evidence are relevant, and the goals of researchers illuminate philosophical issues so well. Yet, to then try to extend this to all the disciplines and sub-disciplines called 'science' seems to ignore the fact that there are such significant variations even among sub-disciplines of the same 'science'.

### 3. Summary

While I am sympathetic to Anderson's holism, I think there are some significant asymmetries between 'factual' claims and moral and political value judgments that are elided if we try to model such value judgments on factual claims. Yet, Anderson's attempt to address the undertheorization of value judgments that has plagued philosophy of science generally is an important contribution to the literature, and I have tried to push on those issues more in this commentary.

In addition, I have queried, more generally, the value of making claims about 'science' in general. Without a strong definition of science, the questions of legitimacy that Anderson seeks to address are either pseudo-problems, or they resist answer by means of the case study method. I have advocated an extensional definition of science which would take the case study method as primary, but which would eschew drawing conclusions about science more generally.

### References

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<sup>1</sup> I take it that part of what distinguishes standpoint epistemologies is a commitment to the stronger claim: some value commitments are more epistemically fruitful, in all cases, in virtue of their content. I take it that Anderson is not committed to this stronger view.

<sup>2</sup> For an interesting, but different, discussion of the asymmetries between factual claims and value judgments, see Lichtenberg (1994).