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### Getting to the Point

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

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### 1. Introduction

I mean the subtitle of my essay both as praise for the clarity with which Elizabeth Anderson writes about what is at stake in debates about values in science, and as a promise to outline an even more direct route to the heart of the matter. I begin with a quick review of the steps in Anderson's argument that seem necessary and, indeed, laudable, followed by a brief discussion of those steps in her argument that we might fruitfully skip. The hope is that we will arrive at roughly the same location but with a firmer foothold.

In what follows, I borrow Anderson's (and Longino's) terminology, using "cognitive values," to refer to the more

obviously epistemic values most philosophers and scientists share regarding the accuracy, simplicity, scope, consistency, and fruitfulness of any given scientific hypotheses, theory, or research program. I use "non-cognitive values" or simply "value judgments" when referring to almost any other value claim that might be brought to bear in a scientific setting, for good or ill. These include claims that are intended to have normative force but are typically seen to fall outside the strictly-speaking cognitive or epistemic realm, such as political and moral claims more generally. However, by the end of my essay, I hope to have shown that, on the terminological front, we should discontinue our use of the phrase "non-cognitive values," because, as Anderson herself shows, value judgments do in fact have cognitive content.

Anderson offers her arguments about the appropriate place of values in science as a contrast to her very careful and charitable description of the "orthodox" view of science as, ideally, "value-free." She concludes that, in some carefully circumscribed cases, value judgments from the non-cognitive realm can appropriately be brought to bear on "factual statements of evidence" from the cognitive realm, and vice versa.

To foreshadow the more direct route by which I aim to reach this same conclusion, I argue that, for purposes of the science and values debate, there is *no significant difference* between the cognitive and non-cognitive realms, because just like "factual statements of evidence," value judgments are arrived at and, in ideal cases, held conditional on, the evidence of our ongoing experiences in and of the world (this is a point I believe Anderson supports, but I want to make its implications clearer and easier to reach, or at least, within the confines of this forum, sketch an outline of how we might do this). In the spirit of Lynn Hankinson Nelson's work on Quine, I take Quine's student, Davidson, to have brought Quine's holistic project to a more consistent conclusion, *viz.*,

that we have no good reason to believe that beliefs about values get their meaning in a way that is significantly different from that of beliefs about “facts” – the meaning of both sorts of beliefs is produced more or less directly through our experience with the world around us (for example, Davidson 2004). More on this, shortly.

## 2. Anderson’s argument

Anderson begins by reminding us that feminists in science and science studies have long engaged in the identification of sexist political values in science, and that many feminists have argued further that the very identification of the sexism requires not a value-free approach, but the inclusion of a *different set* of values, namely, feminist values. How then to articulate a legitimate, positive role for feminist and other relevant values in science and science studies?

Anderson surveys the attempts by feminists to use the underdetermination argument to this end, but points out that, while the underdetermination argument can be used to explain how values might play a role in scientific theory-choice, it does not help discriminate between better and worse values – something feminists need to be able to do if we are going to be able to persuasively recommend our values over others. I think she is exactly right in her diagnosis of the problems with underdetermination (I make a similar argument in my (1998)) and in her disappointment in the “undertheorized” nature of values in feminist science studies more generally.

In the second section of her paper, she identifies the main problem with the orthodox account of values and science that feminists have yet to adequately address, specifically, the orthodox claim that not only should science be value-free, but that values are *science-free*; that “no empirical observations can count as evidence for a claim that

something is good” (3). Lynn Hankinson Nelson, myself, and others have been mounting various neo-pragmatist arguments against this orthodox view, and in support of fact/value holism (for example, Nelson 1990, 1993, Clough 2003). But Anderson is right that the mechanism for the holism could be clarified.

She next makes a compelling argument for the logical independence between a theory’s impartiality and its neutrality (4).<sup>i</sup> This conclusion sets the stage for her argument that scientific theories that are not neutral between a set of value claims can, nevertheless, be arrived at via an impartial, objective examination of the evidence.

One of the most important contributions she makes to the science and values debate is an observation, that, once made, seems perfectly obvious: the spectre haunting instrumentalist discussions of practical reason – the problem of moving from “is” to “ought” – is no more than the problem encountered by any deductive argument whose conclusion is ampliative (5-6). So, it is not, therefore, a special problem of moving from premises from the descriptive realm to a conclusion from the evaluative realm. From here, she shows that the descriptive or cognitive and the evaluative or non-cognitive can be linked in fruitful ways, with the proper inductivist proviso that any conclusion for a particular instance of that linkage is contingent and amenable to correction in the face of new evidence.<sup>ii</sup>

In the key third section of her paper, Anderson provides arguments that focus on the question whether, and how, experiences (now cashed out not as scientific findings but as something more informal and ubiquitous) can provide evidence for value judgments. Emotional experiences are introduced to show how value judgments can be informed by evidence.

In the fourth section of her paper, she uses yet another argument to explain the converse claim that evidence can be informed by values; that values can serve as evidence in

science, or help us to uncover evidence (11). The case study of feminist research on divorce she uses to illustrate the bi-directional influence of the factual and value realms is exemplary.

### 3. A more direct route

While Anderson notes that emotional experiences are “among the experiences” that could provide evidence for values, it is not clear that we need to introduce these experiences as an intermediary when we could instead proceed immediately to a very basic argument about the empirical nature of values – an argument that has the further virtue of treating the science-laden nature of values and the value-laden nature of science as a single phenomenon in need of only a single holistic explanation.

With respect to her claim that emotional experiences can provide evidence for value judgments, Anderson presents three criteria that a mental state must satisfy in order to be used as evidence in this way. She writes that “To count as presenting evidence, a mental state must a) have cognitive content, b) be independent of what it is supposed to be evidence for, and c) be defeasible—accountable and hence responsive to the way the world is” (9). While she provides no argument for why these three criteria are necessary and/or sufficient, they seem reasonable enough for our present purposes. She then argues that emotional experiences satisfy the criteria and, therefore, that emotional experiences can be used as evidence for value judgments. I argue that value judgments *themselves* satisfy these criteria, obviating the need for emotional or other intermediaries.

I begin by looking at how value judgments satisfy Anderson’s first criterion that, “to count as presenting evidence, a mental state must have cognitive content.” Here, a quick return to the question of Quine and Davidson’s

semantic holism is helpful. Anderson describes Nelson’s Quinean version of holism as the claim that “our factual and evaluative theories confront, as a body, the totality of the evidence,” and argues that this explanation is not as helpful as it might be for explaining how it is that we can use empirical observations to “support or undermine particular value judgments” (2). While Davidson shares much with Quine, Davidson’s account makes clearer, I think, how semantic holism supports the view that value judgments have cognitive content.

On Davidson’s account, to have meaningful beliefs at all, whether they be value judgments or factual statements of evidence, is to be practically (for example, linguistically) enmeshed in a physico-social relationship with the world around us, including other knowers. Meaning, or cognitive content, to use Anderson’s phrase, is produced through a triangulation between ourselves, the fellow creatures with whom we communicate and engage, and the shared bits of the world on which that communication or engagement is focused.<sup>iii</sup>

Insofar as value judgments *express* anything then, that is, insofar as they are *meaningful*, they too are beliefs that have been acquired through the usual process of practical engagement with the world through communication with others. Learning to identify something as “good,” or as “sexist,” or as “liberal” – learning the *meaning* of these value terms – involves learning through experience of the world to successfully classify something as belonging to a particular category, to assign it a property. The same process is used for learning the meaning of the category terms “conducts electricity,” “reflects light,” “produces heat.” Insofar as value or any other kind of judgments are meaningful, they are beliefs that arise from our experience with the world – that is, they have cognitive content.

Anderson’s second criterion is that “to count as presenting evidence, a mental state must be independent of

what it is supposed to be evidence for.” Like the emotional experiences she discusses, value judgments can be shown to be amenable to reflective deliberation—they do not have to determine, inappropriately, any given interpretation of some other set of judgments. Now of course, they might. Anderson argues that “we need to ensure that value judgments do not operate to drive inquiry to a predetermined conclusion” (11). I want to emphasize that this same need holds for *any* judgment. So, while assigning some phenomenon to the category “good” might inappropriately bias our interpretations of any new evidence about that phenomenon, so too might our categorizations of it as “hot” or “reflective.” Importantly, in neither case is the categorization or its affect on future interpretations immune from appropriate revision in the light of new experiences. As Anderson herself shows, any judgments can be held dogmatically, though, thankfully, they need not be. In the case of one’s value judgments it is certainly possible to learn through experience that one is wrong. Anderson, refreshingly, calls this “growing up.”

That value judgments, as with any sort of judgment, arise from and can be tested against our experience with the world is simply another way to describe Anderson’s final criterion that “to count as presenting evidence a mental state must be defeasible—accountable and hence responsive to the way the world is.” We can be right or wrong in assigning various properties, be those properties from the realm of “facts” or “values.” Wanting something to conduct electricity, does not make it so. Similarly with wanting something to be good, or sexist, or liberal. The truth of any of our judgments is contingent, and amenable to objective examination (Davidson 2004).

The argument I have presented entails that value judgments are experience-laden, and hence, ideally, in the relevant cases, science-laden. It does so without the need for the intermediary of emotional experience. Additionally, if I

am right, then, not only are value-judgments informed by evidence, but, where relevant, value judgments can be used as evidence in support of other sorts of judgments, such as judgments made in support of a particular scientific hypothesis and/or in helping to decide which evidentiary judgments should be given weight when choosing between hypotheses. A single, holistic argument about belief acquisition can be used to explain both the science-laden nature of values and the value-laden nature of science. The notion that we need a complex and/or multi-tiered set of arguments to explain the interaction of distinct realms—the cognitive realm of scientific judgments and the non-cognitive realm of value judgments—is, on this view, revealed as spurious. For our purposes, the realms are not importantly distinct. When Anderson writes that “from an epistemological point of view, value judgments function like empirical hypotheses” (11) we can actually go further and say that value judgments, like any other, just *are* empirical hypotheses, broadly speaking.

The main question that remains then, concerns whether value judgments, now seen as empirical hypotheses, are consistent with the available, relevant evidence. I argue that the only standard we can appeal to in bringing *any* judgment to bear in a scientific setting, whether that be a judgment expressing a value or expressing a factual statement of evidence, is whether the judgment is explanatory of, and/or consistent with our experiences, that is, the available relevant evidence. Value judgments, just like any other, are capable of being consistent with the available relevant evidence, or not, and if they are, then they should be given weight.

Consider psychological theories of human development. I argue that there is no significant cognitive or epistemic difference in giving weight to a theory because it is fruitful (traditionally understood as a cognitive or epistemic value), and giving weight to a theory because it is inclusive

(traditionally understood as a feminist political value), whereby an inclusive theory is one that is based on and explanatory of the relevant range of experiences of the subjects the theory purports to be about: a theory that gives full-weight to the experiences of both males and females, *as* males and females, *as* children and adults, *as* Asians and Africans, *as* heterosexuals and homosexuals. In each case, giving weight to considerations of fruitfulness and to considerations of inclusivity, is *premised on* a fairly well-established inductive claim that, over time, theories that are non-fruitful or exclusive tend not to be explanatory of or consistent with the evidence.

Some might argue here that, ironically, the problem is not with inclusivity, but with fruitfulness, in that fruitfulness is not always directly related to evidence, and of course this is true. However, it's clear that if *non-fruitful* theories *regularly* proved to be consistent with, and explanatory of, the available evidence, then we would have good inductive reason to question the cognitive or epistemic value of fruitfulness. As it stands, with respect to psychological theories of human development, we have good inductive reason to support both fruitfulness and inclusivity as cognitive or epistemic values.

But, again, these claims are defeasible and concerning the value of inclusivity in particular, which features of human identity are taken to be relevantly included is an empirical and on-going question. In the contemporary United States of America, for example, we have reliable data suggesting that variations in sex/gender, race/ethnicity and economic status are associated with variation in human psychological development. Any theory attempting to explain human psychological development, ignores these variables at the expense of fidelity to well-supported cognitive, epistemic values.

#### 4. Concluding remarks

This has just been a sketch at how we might arrive at Anderson's conclusions by a less-circuitous route. The implication of course is that I believe her conclusions are correct, timely and important. In fact it is because they are so important that I want to find as straightforward an argument for them as possible. Even at the conclusion of her essay, Anderson continues to argue for the contingent legitimacy of "non-cognitive value judgments" in scientific research (18). I hope to have shown in a more straightforward way that there are no such things as non-cognitive value judgments, just judgments that are better or worse supported by the available relevant evidence, so more or less legitimate for use in any given scientific program.

Of course, whether one person's favored analytic tools are more straightforward than another's is not itself a straightforward question. But if entire steps can be skipped, such as the use of emotional experiences as intermediaries, and if one holistic explanation rather than two, or more, can account for a single bi-directional phenomenon, then some progress seems measurable.

My main hope is that I have contributed to the overall project by further shifting the burden of proof onto those who treat the realm of value judgments as "non-cognitive" or "non-epistemic" and therefore as unavailable to rational adjudication. Anderson's essay makes clear why this project is crucial.

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<sup>i</sup> See also Campbell (1994).

<sup>ii</sup> One quick aside: neither I nor Anderson spend much time detailing what we mean by “consistent with experience” or “responsive to evidence” or “empirically accurate/adequate,” and so on. Readers should see chapter 2 of Solomon (2001) for an excellent discussion of the complexity of these notions.

<sup>iii</sup> This latter point is made especially well by Davidson in his (2001).