Cooperative Epistemic Trustworthiness

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Abstract

Extant accounts of trust in science focus on reconciling scientific and public value judgments, but neglect the challenge of learning audience values. I argue that for scientific experts to be epistemically trustworthy, they should adopt a cooperative approach to learning about the values of their audience. A cooperative approach, in which expert and non-expert inquirers iteratively refine value judgments, better achieves important second-order epistemic dimensions of trustworthiness. Whereas some epistemologists take trustworthiness to be a precondition for the objectivity of science, I suggest that strong objectivity in the standpoint theoretic sense is sometimes a prerequisite for trustworthiness itself.

1   Introduction

Scientists are often beholden to the aims of non-scientific audiences, whether these are generic democratic publics, specific communities who are uniquely affected by scientific research, or policy-makers who depend on evidence-based recommendations. Most of these cases of epistemic dependence in science are asymmetric, or cases in which one set of knowers is dependent on another for information. Ideally, this asymmetric epistemic dependence is grounded not in unthinking deference, but in considerations of epistemic trust (Hardwig 1991).

On most accounts, epistemic trustworthiness has at least two important features: it depends upon both how well the expert knows, and on the expert's orientation toward her audience (Baier 1986; Scheman 2001; Grasswick 2010). By contrast, the role of audience values in the trustworthiness of scientific inquiry has been limited to decisions about responsibly placing or withholding trust, or to reconciling audience values with those of scientists (Wilholt 2013; Alexandrova 2018; Grasswick 2018). Here, I argue that in order for scientific experts to be epistemically trustworthy, they should adopt a cooperative approach to learning about the values of their audience, in which expert and non-expert inquirers iteratively refine value judgments about the aims of inquiry.

This argument has two parts. First, I argue that trustworthiness requires that experts have good reasons to think they know audience values and aims for inquiry. This follows from a second-order epistemic dimension of trustworthiness: experts must consider the limits of their own knowledge and whether it is well-suited to the task at hand (Daukas 2011). Second, I argue that these reasons are best achieved via a cooperative approach to characterizing values. A cooperative approach, in which expert and non-expert inquirers iteratively refine value judgments, provides concrete methodological guidance as to how to achieve important second-order epistemic dimensions of trustworthiness. It also flips the relationship between objectivity and trustworthiness outlined by some social epistemologists. Whereas trustworthiness is widely taken

as a precondition for objectivity (Scheman 2001, Douglas 2009), the cooperative account shows that strong objectivity in the standpoint theoretic sense is sometimes a prerequisite for trustworthiness itself.

2   Values-Matching Accounts

Philosophers of science have cashed out trustworthiness in terms of the legitimacy of scientific practices (John 2018), the honesty and reliability of scientific communication by scientists and science journalists (Irzik and Kurtulmus 2019), the social conditions of science (Irzik and Kurtulmus 2019; Rolin 2020), scientists' value judgments about the distribution of inductive risks involved in accepting or rejecting a hypothesis (Wilholt 2013), and broader value judgments about scientific measurements and methodologies (Alexandrova 2018; Schroeder 2019). I'll call these values-matching accounts, because they appeal fundamentally to the idea that either the value judgments of trustworthy science should match those of an audience, or that the mismatch should be accounted for in some politically legitimate manner.

I want to highlight two important features of values-matching accounts. First, they often secure the trustworthiness of science by managing the role of values in scientific projects that are themselves taken as given. For Wilholt, public values enter into methodological judgments about how to value the consequences of inquiry and the reliability of its results; for Alexandrova, they enter into decisions about how to operationalize concepts in "mixed claims" with normative and empirical content, and for Schroeder, they are explicitly confined to "the scientific process" and forbidden from influencing the choice of research project itself (2019, 554). These roles for values in securing trustworthiness fill in the methodological gaps à la ChoGlueck (2018). Second, values-matching accounts focus on aligning values that are themselves uninterrogated. In Section 3, I'll show that trustworthy experts cannot afford to take the values of their audience for granted. Instead, second-order epistemic considerations inherent to trustworthiness demand that they

actively negotiate the aims of inquiry: an important role for social values in science. Insofar as values-matching matters for trustworthiness, it is downstream of these considerations.

3   Trustworthiness and the Aims of Science

To anchor this argument, I will lean on Nancy Daukas's (2011) feminist account of epistemic trustworthiness.[1] The most important feature of this account is its requirement that trustworthy scientists attend to second-order epistemic considerations; i.e. that they assess the limits of their knowledge and its relative suitability in a particular context. I claim that in many cases, scientists cannot make this evaluation solipsistically.

3.1   Second-Order Epistemic Trustworthiness

For Daukas, one's trustworthiness as a testifier depends not only on sincerity and accuracy, but also on one's second-order assessment of one's own knowledge: judging the salience and limits of what we might know in a particular context. This is intuitive: if I hold forth on a topic I know relatively little about, I behave in an untrustworthy way even if I am accurate and sincere. To avoid this, Daukas recommends a self-reflexive approach to epistemic trustworthiness, which asks experts to responsibly characterize and steward their own epistemic resources. On this account, being trustworthy requires not only that experts make some reliable assessment about the limits of their own knowledge, but also that they have reason to think they are relatively well-positioned to complete the epistemic task in question.[2] This is a second-order dimension of epistemic trustworthiness: experts should attend not only to what they know, but also to whether they have

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[1]I think we could draw a similar lesson from Frost-Arnold (2014) or from Grasswick's (2018) sincerity care condition for trust.

[2]For Daukas, this is reason enough to reject a solipsistic picture of trustworthiness, since assessing how well we know in relation to those around us requires "other-attunement" (2011, 52).

good reasons to think that they know it.

I endorse this account, and I interpret it as demanding much more with respect to the knowledge we need in order to be trustworthy than values-matching approaches seem to require. This is because, in order to know whether our knowledge is the right tool for the job, we need to have reasons to think we know what the job *is*. This is both prior to, and broader than, matching the values of scientists and the public(s) with respect to individual methodological choices within the scientific process. It also requires that scientists learn about the values of their audience in ways largely neglected by values-matching approaches.[3] Specifically, trustworthy experts may need to play an active role in negotiating value judgments about the aims of inquiry and in helping to characterize the values and aims of audiences for science. This is because some audiences may not be well-positioned to know what these values or aims could be.

3.2   Asymmetric Epistemic Dependence

Epistemic asymmetries may impact agents' abilities to characterize their values with respect to the aims of science. This is especially likely when expertise is relevant to knowing what our aims could be. To see how this might work, consider two examples.

In the first case, a cyclist walks into a bicycle store and tells the proprietor he wants to buy a ProBike 3000, the most expensive racing bicycle in stock. The proprietor asks the cyclist what sort of riding he hopes to do, and he explains that he is new to cycling but hoping to do some long rides on dirt roads, bikepacking, and so forth. Naturally, the proprietor would be happy to sell him the ProBike 3000, but she suggests that he consider a couple of alternative bikes that might better suit his purposes, such as the FreeRide 2500, which has larger tires and a more comfortable

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[3]The normative force of "require" scales with the strength of our (defeasible) commitment to trustworthiness itself. Scientists need not be trustworthy to all audiences (e.g. racist audiences) or all aims (e.g. aims with false presuppositions), all of the time (see Frost-Arnold 2014; Khalifa and Millson 2020).

geometry for long days on the trail. She would have been perfectly within her rights to sell him the ProBike 3000, but to do so would have exploited his relative epistemic disadvantage. To take advantage of this epistemic asymmetry would be untrustworthy: this is precisely the sort of behavior that makes us suspicious of many used car dealers, horse traders, and so forth. The bike shop proprietor is relatively more trustworthy because she takes on an interactive role in his process of choosing a bicycle.

In the second case, a city resident asks an epidemiologist to explain why her neighborhood, Wayward Springs, has higher rates of COVID-19 mortality than another neighborhood, Cobble Hill. Specifically, she asks what people in Cobble Hill are doing differently that protects them from severe disease. Like the bike shop proprietor, the epidemiologist could simply give her a true answer to her original question: perhaps residents of Cobble Hill have higher compliance with social distancing recommendations. But to do so would obfuscate other explanations that the epidemiologist could offer instead, such as the fact that differences in the distribution of relevant comorbidities among neighborhoods are partly the product of environmental racism. To simply answer the resident's question would align with the resident's stated aims, but it would withhold information about other possible aims that she might prefer, such as assigning responsibility to industry or to ineffectual regulators. This kind of obfuscatory move is a common feature of neoliberal discourse about health (Valdez 2021).

It is untrustworthy for the epidemiologist to take the resident's original question for granted for the same reasons that it is untrustworthy for the bike shop proprietor to sell the cyclist the ProBike 3000: it exploits her epistemic disadvantage with respect to characterizing her aims. Notice that nothing about this means that, at the end of the day, the cyclist cannot choose a bicycle or that the resident cannot reasonably prefer to change her own behavior and leave the other issues to environmental activists. Instead, it simply reveals how insensitivity to aims characterization might render an expert intuitively untrustworthy, despite values-matching. Epistemic trustworthiness demands that we have good justification for our moral epistemology as

well as our scientific knowledge, and this means that experts should attend to whether their audience is in a position to characterize their aims and values along these lines.

3.3   Values-Matching: Reprise

This has two important consequences for our understanding of trustworthiness. First, it shows that experts cannot take non-expert aims and values for granted. Second, it means that values-matching efforts to align audience values with those of scientists cannot fully discharge the demands of trustworthiness. To see why this is the case, consider three common strategies employed by values-matching advocates: preference aggregation, appeals to best interests, and deliberative polling.

Preference aggregation approaches seek to learn agents' utility functions, often from revealed preference data, and to select from among the readily available scientific options (e.g., causal variables) in order to maximize utility (see Kinney 2019). By contrast, best interest approaches appeal to epistemic paternalism (Kelsall 2020). These approaches discount what agents actually want to know or do in favor of what some allegedly well-positioned expert thinks they should want to know or do, or what is allegedly in their "best interests" (see e.g. John 2018). Finally, deliberative polling approaches seek to manage diffuse and conflicting audience aims by using the process of deliberation to confer political legitimacy on the outcome of a value characterization process, usually a choice among preset options. Alexandrova's (2018) deliberative polling argument and Schroeder's (2019) democratic values argument both recommend this strategy.

Each of these approaches to learning audience values can be criticized independently: best interest approaches beg the question of audience aims and are politically and epistemically illegitimate (Kelsall 2020); preference aggregation approaches limit audience aims to choosing among preset options and are subject to incommensurability concerns (Anderson 1993); deliberative polling approaches can be compromised by non-ideal epistemic situations such as testimonial smothering and silencing (Rolin 2020; Dotson 2011). Here I mean to press a distinct,

unified worry about these values-learning approaches, which is that they often assume that audiences are well-positioned to characterize their values. An expert agent's audience may not know, or be well-positioned to know, what their values might be. This is especially clear if we take a broadly Deweyan approach to inquiry, on which value judgments are sensitive to evidence (Brown 2020).

What I hope to have shown here is the following. An agent's epistemic trustworthiness depends on her ability to assess the relative fit of her knowledge to the task at hand. To do this, she needs to understand the task. Sometimes she can learn this from her audience. But sometimes they are not well-positioned to explore the values relevant to characterizing the aims of inquiry. In such cases, it would be easy for our agent to present them with a set of options. But to do so could inadvertently (in the best case) or maliciously (in the worst case) "smuggle values" past her audience members in Alexandrova's (2018) parlance, or simply fail to meet their needs. Their values may call for some bespoke epistemic goods.[4] And maybe our agent can provide them! But in order to think her knowledge is well-suited to the task at hand, she may not merely assume that this is the case. She must earn the warrant for this inference, and this can be tricky business.

4 Cooperative Epistemic Trustworthiness

What can warrant a trustworthy scientist's belief that both she and her audience have satisfactorily characterized their aims and values? She could ask the audience and take their word for it, but I suspect this will rarely suffice. More often, this will require some back and forth: the kind of negotiation that is common to conversations across different epistemic situations (Nagel 2019).

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[4]For a complementary use of 'bespoke,' see Kelsall (2020, 11). Kelsall is concerned with the diversity of interests (epistemic, moral, political) that inform trustworthy scientific communication; I am more specifically opposed to the notion of choosing off the rack from a set of options provided by scientists.

Furthermore, our agent needs to expect her interlocutors to be able to participate unreservedly in such conversations. In other words, she needs to cultivate a cooperative approach to characterizing the aims of inquiry.

4.1 The Cooperative Account

Cooperative experts should prioritize audience voice over merely "consulting" an audience or offering them a fixed set of options. By this I mean the sense in which Anderson (1993) distinguishes voice, as a way of capturing the heterogeneity of ways in which we might value, from choice, a limited form of cardinal value ordering: we should not expect to meaningfully characterize what an audience might need or value simply by asking them to choose from a set of prefabricated options. Second, an expert agent should attend to the social conditions shaping a conversation or a process of negotiating aims. As Rolin (2020) points out, contexts of asymmetric epistemic dependence are often contexts of hierarchical or oppressive power relations which can prevent agents from exercising their voice. Warrant for believing that aims are well-characterized depends on the extent to which audience voices can actually be expressed. Third, expert agents should attend to the epistemic conditions in which an audience has characterized their aims and values. In some cases, audiences may be far better positioned to characterize relevant values than scientific experts might be: they may be more familiar with a social problem or better-equipped to formulate a research question (Harding 1993; Intemann 2010; McHugh 2015). In other cases, experts may be able to inform values characterization by offering more information about possible aims and methods. Either way, this aspect of the cooperative approach will allow experts to ground and improve their knowledge about audience values.

A cooperative account goes beyond making a process politically legitimate. If an expert scientist wants good reason to think she really knows the values of her audience, then she must account for the fact that both the values of her audience and her own understanding of those values are likely to change over the course of a conversation; that this is likely to be an iterative

process. The real decision to be made here is when to stop characterizing values and actually pursue a line of inquiry (Brown 2020). Put another way, part of the motivation for our agent to engage in value negotiation, rather than mere polling or consultation, is that it is not clear whether her audience is well-positioned to characterize their values, socially or epistemically. If this is the case, the expert should expect audience values to change as their epistemic situation changes. But similarly, the expert should expect *her own* epistemic situation to change in conversation with her audience: she knows more about what they know and want after each exchange, and so her own understanding of the task at hand should evolve as well.

Presenting an audience with options, as many values-matching accounts would do, allows scientists to retain control of and responsibility for the possibility space of scientific inquiry. But scientists are notorious for their failures of imagination, both moral and epistemological, in this regard (Stanford 2006, Brown 2020). A cooperative account avoids this by inviting the audience to expand or reject the possibility space as characterized by scientists and to participate in what Brown (2020) calls the "moral imagination" of science, or to refuse research altogether (Tuck and Yang 2018; Liboiron 2021). Although the cooperative approach is demanding, it is already reflected in a number of existing models for inquiry. For instance, scientific/intellectual movements (SIMs), community-based participatory research (CBPR), and participatory action research (PAR) all involve iterative refinement of the aims of inquiry in collaboration between scientific experts and communities affected by their research (Rolin 2020; Brown 2020; Liboiron 2016). These approaches have been endorsed by philosophers of science on broadly moral and political grounds. Here, I am arguing that they are also valuable for moral *epistemological* reasons, and that these reasons are relevant to epistemic trustworthiness. To see how this works, consider an example from health disparities research.

4.2   The Preconception Stress and Resilience Model

The Preconception Stress and Resilience Model (PSRP) is a framework for research designed by the NIH Community Child Health Network (CCHN). The problem at stake in the PSRP model is racial disparities in pregnancy outcomes, such as prematurity, infant mortality, and birthweight (Ramey et al. 2015). CCHN researchers used "community-academic partnerships" to develop a framework for studying these disparities. This involved sustaining long-term collaborative relationships between academics from "social, behavioral, and biomedical sciences" and "community representatives" from research sites in several major US cities (Ramey et al. 2015, 709). The academic researchers claim that community members were treated as co-investigators.

Many aspects of this project seem to embody a cooperative approach. The PSRP project began with a two-year "getting acquainted phase," in which co-investigators shared expertise and interests with one another, followed by iterative refinement of the conceptual framework for inquiry (Ramey et al. 2015, 709-710). When disagreement arose about the direction of inquiry, each research site deliberated and received a single vote. This deliberation extended beyond the original framing of the aims of inquiry into choices that arose within the research process. The outcomes of this process were a framework for guiding inquiry, specific causal hypotheses, and a prospective study which tested two of these hypotheses. In contrast to the majority of health disparities research, the framework emphasizes paternal, as well as maternal, contributions to health, acknowledges community resources rather than focusing exclusively on stress, and deemphasizes specific mechanisms and biochemical pathways.

The development of the PSRP model is not perfect. (For instance, we might ask: How do academic researchers avoid silencing and ensure accountability to community co-investigators? Can community members refuse research if they are out-voted? How does the model increase surveillance of women during the "preconception" period? etc.) But it is an active, iterative, cooperative approach to characterizing the aims of inquiry. It is at least nominally sensitive to "community" needs and interests, however community is defined, and it is responsive to these

interests not just at discrete stages of inquiry, such as defining measurements, but before, during, and after the model is implemented. All else being equal, this means that academic co-investigators should have better reason to believe that the aims of community co-investigators are well-characterized. As Scheman (2001, 44) reminds us, trustworthiness is not an all-or-nothing attribute, but rather "a rolling horizon we move toward," and which admits of degrees. The iterative, collaborative elements of the PSRP process constitute an improvement on the degree of trustworthiness of the academic co-participants.

Audience aims characterization often calls for a process of collaboratively characterizing values and tailoring a scientific inquiry to these goals. In order to be trustworthy, experts need reasons to believe they understand the aims of their audience - and that their audience is well-positioned to articulate these aims. "Well-positioned" here can involve having access to evidence or information about what science might have to offer, but it can also invoke the social conditions that make it possible for an audience to express or negotiate their aims. I have argued that in many cases, this will require scientists to take an active role in characterizing and negotiating aims and values, and that this is best captured by a collaborative approach. While SIMs, CBPR, and PAR may contribute to this goal, the details of any collaborative approach will likely be contextual and specific, as the case of the PSRP model suggests. The point here is that such approaches are motivated not only by our intrinsic desire to institute collaborative research projects between scientists and communities governed by scientific research, but also because they actually provide the epistemic warrant for scientists to know they are engaging with non-expert audiences in a trustworthy way.

5   Objectivity and Trustworthiness

So far, my primary aim has been to articulate how a collaborative approach to characterizing values might improve the epistemic trustworthiness of science. If I have had any luck with this,

then we are in a position in which critical moral epistemological reflexivity plays an important role in grounding the trustworthiness of science. Now I want to explore some implications of this argument for our understanding of the relationship between trustworthiness and the objectivity of science.

Philosophers of science have offered a number of ways that trustworthiness might ground the objectivity of scientific inquiry and, in doing so, serve a viable alternative to the value-free ideal. For instance, Longino's (1990) account of social objectivity has inspired both feminist and non-feminist accounts of objectivity grounded in the trustworthiness of science (Scheman 2001; Douglas 2009). These accounts tether trustworthiness to the ways that science manages problems of subjectivity and the influence of non-epistemic values (e.g. Alexandrova 2018; Schroeder 2019), so they are often "procedural" in Rolin's (2020) parlance. Specifically, they often make the objectivity of science a matter of the degree to which the role(s) of values in science are legitimate or legitimately managed, and therefore trustworthy. Perhaps for these reasons, it is not surprising that values-matching accounts of trustworthiness fit naturally into this framework for thinking about objectivity.

But I have argued that values-matching approaches depend on values themselves being well-characterized, and so I have a different way of thinking about the relationship between trustworthiness and objectivity. Like the proceduralists, I endorse a value-laden approach to the objectivity of science. And like the values-matching theorists, I am making a social epistemological recommendation. However, with respect to trustworthiness and objectivity, my argument runs in the opposite direction. This is because I think that the cooperative approach to trustworthiness that I advocate bears a striking resemblance to the feminist standpoint theoretic notion of strong objectivity, and this makes objectivity prior to trustworthiness on my account. Strong objectivity, for standpoint theorists, is achieved by cooperative critical reflexivity about value judgments which, unlike proceduralist approaches, justifies a specific normative commitment (Harding 1993; Intemann 2010). The cooperative account of trustworthiness that I

have developed demands very much this sort of starting point for inquiry, and just this sort of self-reflexive approach to values in science.[5]

This reverses the directionality of the relationship between objectivity and trustworthiness that we inherit from the proceduralists. In contrast to proceduralists, for whom objectivity depends on trustworthiness, I am advocating for an understanding of trustworthiness which depends on objectivity. This is objectivity in a different sense: strong objectivity in the feminist standpoint theoretic sense.[6] This may be complementary to many proceduralist approaches to values-matching or value management (Intemann 2010; Daukas 2011; Frost-Arnold 2014). For instance, values-matching may often be appropriate once audience values are well-characterized. I merely submit that, insofar as we want to distinguish these roles for objectivity and trustworthiness, strong objectivity is prior to procedural objectivity on my account, because it is necessary, if insufficient, to ground the epistemic trustworthiness of science. My motivation for deliberation and collaboration is also critically relevant to the objectivity of science, but for different reasons. If this amounts to an argument that thoughtful, cooperative deliberation is overdetermined by feminist reasoning about objectivity and trustworthiness, so much the better.

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[5]In basing this affinity exclusively on the critical reflexivity dimension of strong objectivity, I am unhitching it from other important features of standpoint theory. I am cautiously optimistic about this, because I think that the force of strong objectivity lies in its articulation of critical reflection about the warrant for value judgments *as an account of objectivity*, and that this is important even in contexts where standpoints are not obviously relevant. Skeptical readers are invited to restrict the scope of the priority argument to cases where standpoints are relevant and/or to disregard the priority argument and simply take this section as a grateful acknowledgement of the work that standpoint theorists have done to advance this line of reasoning.

[6]Daukas explores another affinity between her account and standpoint theory: credibility assessment. I think these affinities are complementary.

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