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“Trust Me—I’m a Public Intellectual” *Margaret Atwood’s and David Suzuki’s Social Epistemologies of Climate Science*

BOAZ MILLER

The debate about global warming and the science supporting it is one of the most heated discussions in international public life. The debate has been heavily politicized. In the United States, for example, Al Gore, who served as vice-president during the Clinton administration, continues to be a major spokesperson for the reliability of climate science, whereas conservative leaders strongly argue that the theory of human-caused global warming is not sufficiently supported by evidence. In this debate, public intellectuals play a special role, as they are perceived by the public as having special cognitive authority and trustworthiness.

In this chapter, I critically examine the views of two leading Canadian public intellectuals, David Suzuki and Margaret Atwood, on the science of global warming. I argue that the social epistemic models of science to which they are implicitly committed face difficulties in sustaining the positions they advocate.

“Politicians Who Reject Science Are Not Fit to Lead”

In 2006, CBC viewers ranked David Suzuki (born 1936) as fifth among the “top ten greatest Canadians,” and, in 2011, he was voted “most trusted

Canadian” by *Reader’s Digest Canada* for the third time in a row (Braganza 2011). Suzuki, now professor emeritus of genetics at the University of British Columbia, has authored more than fifty books. In 1974, he started the popular CBC Radio science program *Quirks & Quarks*, which he hosted until 1979. Since then, he has been the host of the popular television show *The Nature of Things*, which is aired in more than forty nations, and he has been involved in numerous other radio and television programs as well.

In recent years, Suzuki has been actively involved in issues surrounding global warming. In 1990, he co-founded the David Suzuki Foundation, one of the major aims of which is to fight global warming, both through public education and by sponsoring initiatives relating to carbon print reduction. His activism has also made him a controversial figure. Many Internet sites are devoted to debunking his image and refuting his claims.

When one reads the numerous pages about global warming on the David Suzuki Foundation website, the message is clear: the scientific evidence for the occurrence of anthropogenic global warming is overwhelming; more or less complete scientific consensus exists on the subject; major catastrophes will occur in the near future if we do not act to prevent global warming; it is still possible to act, but the window of opportunity is closing; the public is vastly misinformed about global warming thanks to a few fringe scientists, the media, various right-wing Internet sites that contain fringe science, conservative politicians, and industrialists; the public cannot distinguish reliable, that is, science-based, information from misinformation (Suzuki and Moola 2008; Suzuki and Moola 2011; David Suzuki Foundation n.d.).

Suzuki is very critical of climate skeptics, in particular politicians who refuse to accept the science and act on it, declaring that politicians who reject science are not fit to lead (Suzuki and Moola 2011). He has even called on students to try to find legal ways to jail politicians who ignore science, alluding to Canadian prime minister Stephen Harper, whose government backed away from the previous government’s commitment to implementing the Kyoto protocol (Babbage 2008). He regards climate-change skepticism in the United States as part of an organized attack on science, which includes Republican politicians and religiously motivated creationists. He worries that Canada is going down the same path, but he finds some comfort in the fact that 80 percent of Canadians believe the science underlying the theory of climate change, as opposed to only 58 percent of Americans (Suzuki and Moola 2011).

What are the reasons, according to Suzuki, to trust current climate-change science? Suzuki stresses the existence of a wide agreement in the scientific community, which was been achieved by a process of peer review and critical dialogue among experts who abide by scientific method. Suzuki puts special emphasis on the fact that the scientific consensus is socially diverse and includes scientists from many countries:

The overwhelming majority of scientists who study climate change agree that human activity is responsible for changing the climate. The United Nations Intergovernmental Panel on Climate Change (IPCC) is one of the largest bodies of international scientists ever assembled to study a scientific issue, involving more than 2,500 scientists from more than 130 countries. The IPCC has concluded that most of the warming observed during the past 50 years is attributable to human activities. Its findings have been publicly endorsed by the national academies of science of all G-8 nations, as well as those of China, India and Brazil. (David Suzuki Foundation n.d.)

While he acknowledges that science is not perfect, Suzuki believes that it is the best and most reliable means to gain knowledge of nature. He also regards consensus as the *aim* of scientific inquiry and views the social-epistemic process that results in a consensus as the best means for achieving knowledge:

Science provides the best information about the world around us. Of course, it isn't a perfect system. Scientific conclusions are often tentative, and can only become more solid after more debate, more research, and more observation. The process can take years. And scientists, being human, also have their own biases and points of view that can influence the way they ask questions and interpret data. But in the arena of open scientific debate, over time, consensus can generally be achieved regarding the best possible understanding of an issue. Scientific consensus does not mean we will always get the right answer. But if I were to bet on an issue, I'd put my money on scientific consensus over an observer's hunch, a politician's opinion, or a business leader's tip. (Suzuki and Moola 2008)

What is the epistemic rationale underpinning Suzuki's view that such a process of consensus-forming critical deliberation in fact produces reliable knowledge? We can find an answer to this question in Helen Longino's critical contextual empiricism. Longino (1990, chap. 4; 2002, chap. 6) argues that the process of inquiry and its product, knowledge, are inherently social, in the sense of being inherently dependent on critical interaction between people. Longino regards objectivity as the ultimate aim of inquiry. She distinguishes between two meanings of objectivity—the veridical representation of reality and the lack of a subjective bias—and argues that the latter is required to achieve the former. Bias enters inquiry by filling the logical gap between theory and evidence. In cases where a theory is underdetermined by the existing evidence, inquirers make background assumptions that are neither logically necessary nor determined by the evidence and that typically reflect their biases and prejudice. Social norms of critical deliberation are therefore required to expose and eliminate such biases and thereby reach objectivity. Such norms grip on the individual inquirer in the sense that they require her to question and publicly defend her assumptions and claims to knowledge.

According to critical contextual empiricism, to count as knowledge, a consensus must be reached through a process of critical deliberation and scrutiny governed by four norms:

1. There are public venues of criticism, such as professional journals and conferences.
2. There is uptake of criticism: members of the community respond appropriately to the criticism and revise their views accordingly.
3. There are publicly recognized standards for the evaluation of theories.
4. There is tempered equality of intellectual authority: intellectual capacity and relevant expertise are the only criteria by which people are given the right to participate in the collective discussion, and all those who possess the needed intellectual capacity and relevant expertise can in fact realize their right to participate, regardless of gender, race, and so on.

The consensus-formation process used by the IPCC may be seen an attempt to implement the norms of critical contextual empiricism. In fact, the guiding principles of the IPCC process are similar to Longino's proposed norms. The IPCC also stresses the transparency of the process and the fact that scientists from both developed and developing nations are adequately represented in it:

Three principles governing the review should be borne in mind. First, the best possible scientific and technical advice should be included so that the IPCC Reports represent the latest scientific, technical and socio-economic findings and are as comprehensive as possible. Secondly, a wide circulation process, ensuring representation of independent experts (i.e., experts not involved in the preparation of that particular chapter) from developing and developed countries and countries with economies in transition should aim to involve as many experts as possible in the IPCC process. Thirdly, the review process should be objective, open and transparent. (IPCC 2008, §4.2.4)

It follows, then, that criticism of the norms of critical contextual empiricism may apply to the IPCC epistemic principles as well. Indeed, such criticism exists. Critics argue that Longino's four norms are either too permissive or too restrictive and are neither sufficient nor necessary for knowledge. Goldman (2002) argues that these norms leave too much room for interpretive flexibility. Interpreted too permissively, a community of like-minded people that adopts such norms, such as a group of creationists with their own peer-reviewed journals, may be said to satisfy Longino's norms, although the agreement such a community reaches may not constitute knowledge. Interpreted too restrictively, a community of scientists who refuse to engage with far-fetched criticism, such as evolutionary biologists who do not engage with creationists, may be said to fail to meet Longino's norms.

Furthermore, these norms are neither necessary nor sufficient for knowledge. With respect to necessity, much of our current scientific knowledge has not been generated by critical scrutiny of this sort. Moreover, the standards of critical scrutiny that Longino requires may seem too high for ordinary human beings to meet. To what extent can scientists who are immersed in a particular program of research both in terms of conviction and in terms

of their professional development, realistically be expected to engage in an impartial and equitable critical discussion while transcending their biases and prejudice? After all, a researcher must believe in her hypotheses in order to successfully defend them against criticism; and because scientists are rewarded for success, rather than effort, researchers' personal and collective success is strongly tied to the ultimate acceptance of their theories as the truth. This holds true especially in the climate science case, where scientists are under immense political pressure to present a unified front, given that every disagreement or uncertainty will be used by politicians to raise skepticism and argue that immediate action is not yet required.

As for sufficiency, Solomon and Richardson (2005) argue that openness to criticism and social diversity do not alone guarantee the existence of actual relevant criticism, hence wrong or unwarranted views may survive for a long time even in a community that is in principle open to criticism. They argue that the conditions for knowledge cannot be formulated solely in terms of the procedures that a community should follow. These formulations must also say something substantive about the conditions that the end product—the conclusions that the community reaches—must meet.

Another apparent difficulty with critical contextual empiricism is the problem of manufactured uncertainty. It seems that critical contextual empiricism faces difficulties in dealing with cases in which people seeking to prevent a certain view from being accepted cynically and deliberately insist on more and ever more critical scrutiny, no matter how strong the evidence in support of that view is. Because consensus is regarded as the aim of inquiry and a necessary condition for knowledge, bodies opposed to the existence of a particular piece of knowledge have a vested interest in inhibiting the formation of consensus or in creating the perception that a consensus does not exist. Indeed, Oreskes and Conway (2010) argue that the skeptical claims that global warming is not caused by human activity have not originated from within the scientific community but rather from politically motivated external actors who, consciously and cynically, have been manufacturing controversy on the subject.

Borgerson (2011, 445) argues that critical contextual empiricism can overcome the problem of manufactured uncertainty if we distinguish the level of certainty required for taking action from the level of certainty required for claiming knowledge. If these two issues are separated, interested parties will be less motivated to manufacture uncertainty. While I

agree that such a separation is desirable, it does not help critical contextual empiricism, *qua* a theory of knowledge, to deal with the problem of manufactured uncertainty. Regardless of Borgerson's suggestion, critical contextual empiricism should be able to provide epistemic criteria for discerning between legitimate criticism and manufactured uncertainty, when it exists. Critical contextual empiricism should also be able to provide principles for defining the conditions under which closure in an epistemic community is warranted despite incessant criticism. It remains unclear how critical contextual empiricism can address these challenges.

By highlighting the importance of consensus, Suzuki may very well play into some of the skeptics' hands. Rather than discussing the evidence for global warming and the dangers that humanity faces as a result of it, the public debate centers on the question of whether a scientific consensus exists, when in fact there are good reasons to think that such a consensus is neither required for knowledge on the subject nor for the decision to take preventive action. That is, consensus is not a necessary condition for knowledge, and we do not need to wait to achieve the level of certainty that is required for legitimately claiming the possession of knowledge before we take preventive measures. Even a level of certainty that falls short of knowledge should suffice to prompt serious preventive actions against global warming, especially when the potential consequences of failing to do so are grave.

Suzuki also conveys a distorted image of science to the public, one that ignores the complex messy reality of research. Real scientific research is full of uncertainty, as well as academic politics and intrigue. In science, as in other human domains, power and authority are occasionally used to block certain views, but this should not licence sweeping skepticism and mistrust of science (Castel and Sismondo 2003). Encouraging public trust in scientific inquiry on the basis of a false idealized model of science as a disinterested enterprise of truth seeking is a hazardous tactic. Only under such circumstances can affairs such as the so-called Climate Gate occur (Ryghaug and Skjølsvold 2010). When, in the eyes of the public, scientists appear to fall short of meeting these unrealistic norms, climate skeptics have an effective weapon in their hands.

Finally, emphasizing consensus may actually inhibit scientific research and the growth of knowledge. Scientific pluralism and dissenting views are essential for successful inquiry. As Mill has famously argued (1993, 83–123),

the existence of dissent is necessary for correcting our views when they are wrong and justifying them when they are right. But a public demand for a unified scientific front as a necessary condition for action may lead to the undesirable consequence of silencing dissenting voices within the scientific community (Beatty 2006).¹

In sum, David Suzuki's argument for trusting current climate science puts too much weight on the existence of scientific consensus and relies on a noble, idealized model of science that, because unrealistic, is ultimately fragile and thus prone to backfire. Skeptics can all too easily subvert public trust in science by poking holes in this idealized model, thereby reinforcing their own claims. Suzuki's line of reasoning diverts public attention to less significant questions, such as whether a scientific consensus exists, and unnecessarily ties the climate-science debates to other politically charged debates, such as the evolutionism-creationism debate. Most importantly, his arguments sidestep the significant issues, namely, the actual quality of the scientific evidence and the risks that the international and global community should be willing to take even in the face of a degree—some would say a normal degree—of scientific uncertainty and less-than-perfect evidence.

“We Are Fine. There’s Half a Tube of Food Left”

Margaret Atwood (born 1939) is among Canada's most prominent public intellectuals. A novelist, poet, literary critic, and essayist, she is considered one of the first distinctively Canadian authors, whose writing is both about Canada and for Canadians. Atwood is widely known around the world not only as an author but also as a feminist and environmentalist activist. Her writing and activism are closely intertwined.

Atwood is ambivalent about science. On the one hand, she values it. She comes from a family of scientists. Her father was an eminent zoologist who conducted field research in the backwoods of northern Québec, where she grew up, and her brother is a senior neurophysiologist. She is a passionate birdwatcher and the honorary president of the Rare Bird Club (Bird Studies Canada 2006). In her childhood, she was drawn to science, and she regards science and literature as two fields of human creativity:

Human creativity is not confined to just a few areas of life. The technological world has some of the most creative people you'll ever meet.

When I was growing up, I never saw a division. For instance, my brother and I both have the same marks in English and in the sciences. My brother could have gone in the writing direction. And I could have been a scientist. (Quoted in McCrum 2010)

Some of Atwood's novels, such as *Cat's Eye* (1989), feature scientists as main characters and are informed by ideas from physics, which function as metaphors for understanding women's experiences (Deery 1997).

On the other hand, Atwood is suspicious of science. Many of her novels and stories depict a dystopian or post-apocalyptic world in which people are confronted by the dreadful outcomes of current science and technology. For example, in *Oryx and Crake* (2003) and *The Year of the Flood* (2005), she tells the story of the survivors of an environmental catastrophe that led to the collapse of civilization. She describes the society prior to this collapse as segregated, dull, and violent, one in which animal abuse and child pornography are consumed as a form of entertainment and genetic engineering has produced bizarre animals and human beings.

Atwood dislikes the characterization of her novels as science fiction. She would rather characterize her work as "speculative fiction," namely, "work that employs the means already to hand, such as DNA identification and credit cards" and "can explore the consequences of new and proposed technologies in graphic ways, by showing them as fully operational" (Atwood 2005). She deliberately avoids the word *progress*, preferring the word *change*, as she does not believe that science and technology necessarily work to improve human life (Reach 2007).

Atwood also rejects the notion of objectivity as it is understood in mainstream Western philosophy and science. She denies the possibility of a neutral God-eye's representation of reality. While she was originally drawn in her academic studies to philosophy in the analytic tradition, she turned to English, she says, because she found it less restrictive: "Logic says A cannot be A and non-A at the same time, but poetry says just the opposite" (quoted in Reach 2007). Her novels reflect this attitude as well. As Cuder (2003, 4) puts it: "In her writing, objectivity is always deceptive, a mere pretence. A façade that may hide more obscure interests. . . . For Atwood, perspective is all in the onlooker's eyes, and perceptions are necessarily subjective and partial. No two accounts will ever be exactly the same, and therefore no one can make a rightful claim to History." The perspectives that Atwood

represents in her novels are often those of women, often disempowered or abused, who are driven by the need to tell their stories to other women in an effort to make sense of their lives (Cuder 2003, 3).

Atwood's rejection of one objective representation of reality and the alternative she puts forward—a collage of necessarily partial, subjective, and incompatible views, in which those of disempowered women are privileged—echoes with feminist standpoint epistemology, associated *inter alia* with the work of Sandra Harding. According to Harding (1995), every view is inherently and inseparably connected to a specific agent's experience, identity, and position in society. There is no neutral point of view. Therefore, the presentation of certain scientific positions as neutral or objective is usually a political means to impose the views of the powerful on everybody else by claiming that these views simply represent things as they really are. If critical contextual empiricism requires social diversity in order to expose and eliminate the biases of specific agents and reach consensus, standpoint epistemology regards the attempt to detach a view from its subject as misguided. Diversity is required to bring different perspectives to light, especially those typically excluded from discourse, but the goal is not to merge them into one.

Standpoint epistemology should not be mistaken with simplistic relativism. For Harding, not all positions and views are on a par. Since views are tied to identity and experience, the views of agents whose experience and identity are relevant to the topic deserve more attention. For example, in society in which women are the primary caretakers, their views about child rearing deserve more consideration. Because for Harding, the epistemic and the political are inherently intertwined, marginalized standpoints that have a potential for liberating the oppressed should be privileged. Reflective views of the marginalized and oppressed about their own experience deserve special consideration and carry more weight than knowledge produced by the oppressors about the oppressed. Harding's and Atwood's ideas clearly resonate with each other.

Standpoint epistemology is controversial. The main criticism is that Harding's arguments rest on extreme and ultimately indefensible interpretations of Kuhn's ideas about scientific knowledge as historically situated and of Quine's thesis regarding the underdetermination of theory by evidence and are not sufficiently backed up by empirical data from the practice of science (Pinnick 2003). A detailed discussion of this criticism would exceed

the scope of this chapter, but, in the present context, two considerations require mention. First, the model of science that standpoint epistemology advocates is *not* the one adopted by the IPCC. The IPCC has chosen to issue unified consensus statements that represent the collective view of the community of climate scientists. It has *not* chosen to bring forward a diverse array of perspectives, among which certain tensions between standpoints, including potential dissent, may exist, to privilege those of the disempowered. It is therefore difficult to justify the epistemic model of the IPCC reports on the basis of standpoint epistemology.²

Second, standpoint epistemology, which emphasizes the locality and partiality of perspectives, faces difficulties when it comes to offering epistemic support for causal claims of a global nature, such as the claim that greenhouse gas emissions cause an increase in atmospheric temperature. My point is not that it is impossible to find epistemic support for such claims on the basis of standpoint epistemology: I mean only that it is less suited to this task than other theories of knowledge and justification. How, then, are Atwood's writing and activism on climate change to be reconciled with her apparent allegiance to standpoint epistemology? To answer this question, let us look more closely at her statements on this issue.

Atwood has been very vocal in Canada and internationally about the need to take action to prevent the catastrophic consequences of global warming. For example, in 2007, she issued a message of support of the Green Party of Canada:

Global warming—with the related environmental degradation, “natural” catastrophes, and accelerating species extinction—is surely the biggest issue facing, not just Canada, but the entire planet. Without oxygen to breathe, water to drink, and soil to grow food in, a cut to the GST is worth nothing. It won't matter if you're paying 1% less GST if you're dead. Nor will your survivors care much that they got a deal on your coffin—they'll be dead, too. Yet Stephen Harper's government has gone from outright denial of climate change to lukewarm attempts to cover up and paper over this issue, while all the time keeping Stephen Harper's pledge to “build a firewall around Alberta.” Stephen Harper doesn't want us to develop alternate energy, he wants us to keep burning oil. That's why there was no significant money for green economic

development in his latest budget. The Green Party can be depended on to keep green issues front and centre. (Atwood 2007)

Atwood (2010) has contributed a short story to an edited collection of short stories on global warming, in an attempt to trigger an emotional response by readers that will motivate them to act. In interviews, she repeatedly refers to global warming as the most pressing problem facing humanity, one on which its survival depends. She also notes that her apocalyptic novels are inspired by the predicted global warming catastrophe.

Yet, as far as I can tell, in her public statements on global warming, Atwood, unlike Suzuki, has made no mention of the scientific consensus about it, and she rarely mentions the scientific evidence for it. This is not surprising, given that the theory of knowledge and justification to which she apparently subscribes does not recommend consensus formation as a reliable epistemic means. On the contrary, it regards such a process as detrimental to the aim of gaining knowledge because it eliminates the different standpoints from which different people argue, which are inherently part of the views they express.

Atwood's claims regarding global warming rest on a different line of reasoning. For her, global warming is a consequence of human overpopulation and overconsumption. Human beings, she argues, have been depleting all of the planet's life-sustaining resources, to a point that the planet cannot continue to sustain human life. To illustrate this point, she gives the following example, which is representative of her position:

There's this test tube, and it's full of amoeba food. You put one amoeba in at 12 noon. The amoeba divides in two every minute. At 12 midnight the test tube is full of amoebas—and there's no food left. Question: at what moment in time is the tube half full? Answer: one minute to midnight. That's where we are apparently. That's when all the amoebas are saying: "We are fine. There's half a tube of food left." If you don't believe me, look at the proposed heat maps for 20, 30, 50 years from now, and see what's drying up. Quite a lot, actually, especially in the equatorial regions and the Middle East, which will be like a raisin. It's become a race against time and we are not doing well. (Quoted in McCrum 2010)

Atwood frames the scientific heat predictions within a neo-Malthusian apocalyptic vision of the death of humanity, not unlike her apocalyptic novels. She presents this apocalyptic vision as a fact of nature, with which it is impossible to argue. As she puts it: “Physics and chemistry are things you just can’t negotiate with. These are the laws of the physical world” (quoted in McCrum 2010).

While Atwood and climate skeptics are in opposite camps with respect to accepting global warming, they have something in common. They both rely on theories that diverge, at least in emphasis, from the mainstream theories accepted by the climate science community. Atwood ties the dangers of global warming with an apocalyptic neo-Malthusian vision of humanity, while the IPCC refrains from connecting these two issues. Atwood’s idiosyncratic advocacy may stem from her tacit subscription to standpoint epistemology, which does not approve of the methods and epistemic standards employed in current climate-change scientific research.

Conclusion

Public intellectuals are in an excellent position to shape the terms within which the public debate is conducted. Uncertainty is an inherent part of science, and science may not achieve certainty even when pressed by the public to do so. Certainty should therefore not be a condition for acting. Action may be required in the face of uncertainty and in light of theories that fall short of constituting irrefutable knowledge. When such knowledge is eventually gained, it may be too late to act on it, and the consequences may be too horrific to face.

Yet this is not the position that Margaret Atwood and David Suzuki are advocating. Although Atwood and Suzuki argue from two very different perspectives on science, they have something in common apart from pleading for action to prevent global warming. They both argue that the theory of anthropogenic global warming is an undeniable scientific fact, which the public and its leaders should unconditionally accept, and they both make their claims from within social epistemic frameworks that are incapable of supporting the alleged certainty of their claims. Thus, neither of them is making optimal use of their role as public intellectuals.

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Notes

- 1 I develop this line of argument more fully elsewhere. See Miller (2013) for the relations between knowledge and consensus, and Miller (2014) for the role of consensus in informing public decision-making.
- 2 The IPCC reports can be brought more into line with standpoint epistemology by considering the inductive risks that different people from different regions of the globe are willing to tolerate. Douglas (2009) identifies two types of inductive risks: wrongly accepting a false hypothesis and wrongly rejecting one that is true. She notes that there is an inherent trade-off between these two: the more we expose ourselves to the first, the less we expose ourselves to the second, and vice versa. She argues that social values determine the inductive risks that we are willing to take in a given context, and different social contexts may legitimately call for different balances between these two types of errors. When we think that the consequences of accepting a theory are not severe, we may lower the evidential threshold level required for accepting it. When we think that the risk is high, we may raise it. Since people in different regions of the globe face different predicted dangers and catastrophes resulting from global warming, it may be argued that they may legitimately weigh their risks differently and may therefore adopt different evidential standards for the acceptance or rejection of a theory. In this respect, the IPCC reports may, at least in principle, acknowledge differential standards for different researchers based on their standpoints.

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