

## Laypersons and climate change: *the good enough view*

### Abstract:

Climate laypersons are in a difficult epistemic position regarding what they have good reasons to believe about climate change: this is due to the manufacture of the ambiguous meaning of the term climate change in the popular press. In this article I argue that the layperson has an epistemic duty to formulate *good enough views* about the meaning of the term 'climate change' in consideration of the term's meaning ambiguity, in accordance with the facts of climate consensus, and considering the layperson's own epistemic dependence.

Keywords: epistemic dependence, climate epistemology, climate ethics

'Climate change' is a theoretical term with meaning, identifying a statistical construct of the analysis of climate data; it is also an ideological term, political in its usage and intimately connected to government, social, and economic policy. Climate scientists and climate laypersons have different grasps of the concept *the theory of climate change*, and they mean different things when they use the term 'climate change' (Clark, 2000, 2005, 2007; Ingold, 2006; Ingold and Kurttila, 2000; Slocum, 2004, 2009).

When climate experts use the term 'climate change,' they refer to the prevailing theory that the earth's climate is changing, and that changes are human-induced (*Technical summary of climate science 2007*, Solomon, Qin, and Manning). When laypersons use the term 'climate change,' they refer to a term which entails uncertainty: that climate causality is as yet undetermined (Oreskes and Conway 2010, 184-216). Because the meaning of the term 'climate change' is different depending both on the context in which its used, and the epistemic standing of the user, the meaning of the term can be ambiguous (Cerezo and Garcia, 1996: 54).

Oreskes and Conway explain how this meaning-ambiguity has been socially constructed. On their account, there exist ideologically minded agents who benefit from manipulating the term's meaning so that it is ambiguous, the ambiguity of which correlates to the agent's role in society. The contingently located aspects of the meaning of the term 'climate change' means that it is, semantically, unusually complex, imbued with technological, environmental, economic, scientific, and pragmatic content. This constructed meaning-ambiguity has resulted in the layperson's understanding of 'climate change' to be

very different from climate scientists meaning of the term. The term is not, and maybe cannot due to entrenched special interests, be self-sufficient in its meaning: this has certain practical, moral, epistemic, and semantic import. It is these threads of constructed meaning-ambiguity as it relates to an epistemic agent's standing that I aim to untangle here.

From my aim emerges two salient points, a) the question of what laypersons should take the meaning of 'climate change' to be, and b) what attitude or belief laypersons should take towards claims and theories about *climate change*. Considering constructed meaning ambiguity, and considering the epistemic standpoint of climate laypersons, I argue that what the layperson should aim for is not the same as what the scientist aims for. The climate scientist has certain epistemic concerns about her beliefs, that her beliefs about her understanding of climate concepts should, in the epistemic sense, meet a certain level of rigor. The layperson's concerns should be pragmatic more than epistemic, where what the layperson should believe regards the practical, not epistemic, norms of laypersons. Thus, the layperson ought believe that the meaning of the term 'climate change' is that the earth's climate is changing for anthropogenic reasons; this does not entail that the layperson understand the facts to which the term refers.

There are at least two potentially different issues; on the one hand, there are pragmatic concerns regarding our beliefs, that is, should we act on them or not, where the *should* isn't an epistemic norm but a practical norm. On the other hand, there are epistemic concerns regarding our beliefs, that is, should we believe them or not, where the *should* here is an epistemic norm. Both concerns are relevant to both the expert and the layperson. In addition to being epistemically responsible, the climate expert should (in the practical sense) also act so as to reduce her carbon footprint. On the other hand, in addition to being practically responsible, the layperson should (in the epistemic sense) also form the appropriate doxastic attitudes towards the meaning of the term and the facts to which it refers, e.g. she shouldn't believe that 'climate change' refers to a predictable, cyclical, naturally occurring phenomenon.

The epistemology of 'climate change' has implications on certain social practices, where a layperson's beliefs have practical import because they enable or inhibit her in performing her social roles in a responsible way. As such, layperson's beliefs about what the term 'climate change' means need to be *good enough* for their roles in the community, which is a different epistemic requirement than that placed on scientists. Climate scientists do and should aim for the veracity of the facts to which the term refers, while laypersons should aim for the rationality of their beliefs being good enough for their role in society; it is this practical distinction and normative claim that grounds *the good enough view*. *Qua scientific investigation*, what matters most are epistemic obligations, whereas *qua being a member of a community*, what matters most are the practical/moral obligations.

The layperson, due to her epistemic role as climate layperson, should not get caught up in the facts to which the term 'climate change' refers, since she can minimally fulfill her epistemic obligations by believing that the term 'climate change' means what the climate scientists mean. So this essay has a

narrow normative scope: that what laypersons should aim for is in part determined by their role as laypersons, it regards what they can and cannot know considering that role, and takes into account the social construction of the term's meaning. If a layperson wishes to upgrade her climate knowledge such that her beliefs better track that of climate specialists, then she is upgrading her social role from layperson to a sort of *layperson-plus*, and thus the *good enough view* would no longer apply.

## **I. An overview of the manufacture of meaning: media representation of 'climate change.'**

Research by Oreskes & Conway 2010, and also Boykoff & Boykoff 2004, identify the peaks of articles that identified human impact on the climate, those peaks occurred in 1988, 1989, 1997, 1999 and from 2002 to 2004. In other years articles presented the dissenting view, that climate change was not conclusively anthropogenic. In 2010 M. Boykoff wrote a follow-up media analysis, writing that the past decade has been largely mixed about 'climate change.' The conclusion is that from 2004 the media has given the impression that the meaning of *climate change* and 'climate change' are semantically identical, both terms undefined and largely contested.

The problem with a media representation of 'climate change' as a term with ambiguous meaning (i.e. uncertain causes, impact, variability, urgency) is that it does not track what climate experts mean when they talk about *climate change*. There is a prevailing thesis in the philosophy of language advocated by Putnam, Burge, Horwich, etc. that claims that the meaning of a term is determined by expert usage; whether or not that thesis is true in general is a separate concern from the operational plausibility that expert usage plays a defining role in the semantics of scientific terms. *Climate change* as used by climate experts refers to a climate theory that is a body of claims intended to provide the best explanation of a body of evidence with certain predictive powers. To be clear, expert consensus is that *climate change* (and connected terms like *global warming*) means that the earth's atmosphere is a) getting warmer and b) that human activity is largely responsible (Oreskes, 2004; Oreskes & Conway, 2010; M. Boykoff 2010). Conversely, the layperson's use of the term 'climate change' has varying semantic interpretations depending on the speaker, context, etc.

In our media-manufactured environment where there is a variety of aims, the seemingly scientifically-grounded press has manufactured 'climate change' as a term whose meaning is contested. Popular press articles in the Science sections of the *New York Times* and *Los Angeles Times*, to articles found in *Nature*, *Discovery*, *Scientific American*, as well as to less scientifically-grounded press like *Time* and *Newsweek*, present the meaning of the term 'climate change' as contested (Boykoff & Boykoff 2004).

## **II. It is epistemically responsible for the layperson to accept what climate specialists mean by the term, because climate specialists adhere to epistemic virtues in clarifying a term's meaning.**

The United Nations Intergovernmental Panel on Climate Change (IPCC) is a leader in climate consensus building, chartered to provide a collective judgment about subjective (or Bayesian) likelihoods in areas of climate knowledge, methodology, and conclusions. The IPCC's aims have been to analyze and construct scientific research into a collective set of evidence rightly considered to be scientific consensus (Weingart, 1999). The role of the IPCC is to review and assess the published scientific literature on climate change, its costs, impacts, and possible policy responses in order to assess scientific and technical issues for the UN Framework Convention on Climate Change, and to articulate what the consensus view on the scientific aspects of global climate change is.<sup>1</sup>

Over the past three decades the IPCC has assumed a definitive stance regarding the *meaning* of the term 'climate change.' The IPCC scientific review process itself has been instrumental in coalescing an international epistemic community of scientists, policy-makers, and environmentalists united by their commitment to consistency in climate terms use and meaning. In its effort to: analyze the role of human activity causing climate changes, unify term usage in our use of climate language, and enhance climate knowledge dissemination, it was awarded the 2007 Nobel Peace Prize.

While the *how* of climate science methodology is continually under expert debate, the *meaning* of the term *climate change* is not. Scientific consensus as to the meaning of the term dominates; the definition that dominates is that which has been collectively legitimized, whose makers have exposed themselves to analysis and whose beliefs of which are invited for scrutiny. This is what scientific knowledge *is*, a collective enterprise of specialists whose beliefs form the majority opinion. The scientific consensus that *climate change* means *climate changes with anthropogenic causes* does not mean that there is not scientific uncertainty as to the degree, impact, and nuances of causation. It simply means that among climate scientists there is no debate as to the term's meaning; instead there is accepted knowledge that has been gathered into expert consensus. In the environment of climate consensus, climate scientists can both coherently denounce the climate skeptics, while upholding their own epistemic virtues. For these epistemically rigorous reasons, scientific consensus regarding the meaning of a term is itself evidentiary; it is a unique epistemic fact.

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<sup>1</sup> IPCC methodology: "Through careful measurements and complicated statistical techniques scientists relate various quantitative properties of those materials to each other and to various other temperature and precipitation records, so as to reconstruct individual records of average annual temperatures. Combining these heterogeneous proxy records for various places and regions into a spatially homogenized annual time series for the hemisphere as a whole then involves further calibrations against instrument and other records (themselves, of course, also the result of previous rounds of statistical purification) to ensure that the final palaeo-climatic reconstruction represents average annual temperatures over the hemisphere as a whole. Each step in this process of assembling a reliable witness to historic climate changes in the northern hemisphere over the last millennium involves potentially contestable judgments and practices." (Bradley 1999).

### III. The *good enough* view

The epistemology of climate change engages with our social practices, where laypersons' beliefs enable or inhibit them in performing their social roles in a responsible way. As such, layperson beliefs about the meaning of the term need only be *good enough* for their role in the community, which is a different epistemic requirement than that placed on scientists. Climate scientists should aim for the veracity of their climate research such that the terms they use have veritistic value; laypersons should aim for their beliefs being good enough for their role in society. I make this distinction, and this normative claim about what laypersons should aim for, based on the cognitive limitations laypersons necessarily (being laypersons, what Hardwig calls being *blind*) have about climate science. Their role in climate change discussions is largely limited, and their exposure to meaning-ambiguity is significant. The *good enough view* entails that climate laypersons are not epistemically required to know the whole truth about climate consensus (i.e., that it may be undermined in the future, there may be political bias, the entire truth regarding climate theories), but that they ought believe the expert consensus view about the term's meaning.

That laypersons should not be required to upgrade their climate beliefs is not a wildly transgressive claim. Climate scientists Darier et al. (1999: 351) argue that "It is unclear why the public should—or even want to—approach issues [such as climate change] from the epistemologically privileged expert-framed perspectives of climate scientists," and Darier's conclusions accord with other similar research, see Lorenzoni et al., and 2007; Semenza et al., 2008. These researchers have given-up asking laypersons to upgrade their knowledge, because the construction of meaning-ambiguity is so endemic, and also because upgraded lay knowledge has not translated to changes in lay behavior (Lorenzoni et al., 2007; Slocum, 2004. For analysis on the reasons for lack of climate behavior modification, see Adger, Dessai, Goulden et al, 2009).

This is not to say that *the good enough view* excuses the layperson from adapting her behavior to her beliefs; there is yet hope that behavior modification will follow. Peter Haas (1992) has made a forceful case suggesting that greater scientific knowledge enhances the probability of political cooperation; while more recent studies indicate that this has not been the case, perhaps it is because we have not yet reached a belief-behavior critical mass. As Horst and Irwin (2010) have explained, accepting the expert consensus about a term's meaning can be as much about building a community identity—what Haas (1992) refers to as an epistemic community—as it is about seeking the truth. While it is arguable that such a political consensus has a special responsibility to behave in accordance with the beliefs they hold (Collins and Evans 2002: 281), this is a normative claim about responsibility and behavior, and I am only making the more modest epistemic claim about what a layperson should believe. Laypersons can form political consensus with those whose beliefs also accord with the scientific consensus; the IPCC has helped to fashion such a lay community (Haas, 1992; Elzinga, 1997, Gough and Shackley, 2001). This is

not to say that a political consensus about the term's meaning will better determine what laypersons ought do; but that what we ought to do is a separate question from what we ought to believe about a term's meaning.

The case for the *good enough view* frees the layperson from upgrading her climate knowledge, that is, freedom from having to distinguish complexities best left to climate experts, as well as freedom from navigating the value-laden, politicized matters of constructed meaning. This freedom makes manufactured meaning less epistemically detrimental. The *good enough view* has the virtue of being a simple, rational, realistic goal that accurately tracks what the layperson, considering her role as a climate layperson, should believe.

The *good enough view* also entails that it is not incumbent upon the climate scientist to frame climate change information in ways that consider the political manufacture and manipulation of the message. While I don't expand on this claim here, I am tracking Robert Merton's "The normative structure of science," (1973) wherein he distinguishes what the scientist should aim for regarding information dissemination, while acknowledging the problems of politicized skeptics and manufactured meaning. Analysis indicates that because climate scientists have attempted to address climate skeptic claims by responding to them, the layperson's perspective of climate change has become more confused. This confusion has impacted not just laypersons but policy-makers and experts within the IPCC itself (Risbey and Kandlikar, 2007). The *good enough view* then offers reasons why the climate narrative produced by climate scientists should be more focused, and therefore less confusing.

### III. The Galileo Objection

What grounds the claim that scientific consensus is itself epistemically evidentiary is that scientific communities are groups that avail of criteria (accuracy, consistency, scope, simplicity, fruitfulness) which provides them the shared basis to which to agree. But I am reminded of a quotation attributed to Galileo, "In questions of science, the authority of a thousand is not worth the humble reasoning of a single individual." This attributed quote challenges the notion that prevailing scientific consensus should have epistemic authority:<sup>2</sup> how to respond to this worry?

The prevailing theory of planetary movements was eventually superseded by Galileo's science, which the climate change denier could say is a good reason not to agree with *the good enough view*. She

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<sup>2</sup> A quick note on scientific consensus: the drafting of scientific reports involves the opportunity for revision, challenge, analysis and comment. The existence of consensus regarding anthropogenic climate change is the existence of rigorous analysis which has resulted in a body of work which accords with the majority of experts. Consensus is a position of the majority, and it is of course open to revision and could be wrong; this is separate from questions of a) whether consensus exists and b) what that consensus is and c) what is meant by scientific consensus. See Oreskes "The Scientific Consensus on Climate Change," *Science* 3 December 2004.

could call our attention to other scientific theories which enjoyed prominence which were later replaced, like the theory of species transmutation, spontaneous generation, and the Bohr model of the atom. The consensus dissenter could argue that these consensi were eventually undermined because a critical mass of counter-theorists showed their theories to be more evidentiary, or better argumentatively supported, and thus there are good reasons for laypersons not to accept the consensus view.

What the science layperson could have done at the time of Galileo was to suspend judgement until there was a scientific consensus. Galileo was a voice of scientific analyses which dissented from the dominant, although not scientific, theories, so the epistemically responsible layperson could have suspended belief until a scientific consensus was reached. Galileo gained the support of the newly emerging scientific community as his evidence was analyzed. In the case of climate science dissenters, the dissenting view has not, over the course of three decades, transformed into *a scientific consensus of dissenters*. Without a consensus of expert dissenters to which the layperson can appeal, the *Galileo Objection* does not act as a reason to reject *the good enough view*. What the layperson can do is both accept that scientists are fallible while still holding that scientific consensus itself should be, considering her epistemic standpoint, belief-conferring.

## **Conclusion**

What is epistemically required of laypersons is a modest aim: to accept what scientists mean by the term, and I have supported this claim by showing that the term's meaning has reached scientific consensus, and that those who mean something different in their use of the term are consensus dissenters. For the layperson to accept scientific consensus of meaning it epistemically justified because they are accepting what has been established, through scientific rigor. Arguing for a *good enough view* because it both better tracks the epistemic agent's role in society, and because it acknowledges the evidentiary weight of scientific consensus, means that the layperson can downgrade climate dissenters, and be less impacted by the manufacture of meaning-ambiguity.

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