

*Tackling belief is the key to overcoming climate change scepticism
Without belief in climate change, repeating the scientific case for
manmade global warming simply bounces off*

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<http://www.guardian.co.uk/environment/2012/mar/30/belief-climate-change-scepticism>

“... , [recent work by Dan Kahan](#) and his colleagues has found that the more scientifically literate people are, the more their ideological filters kick in when reading information about climate change. It might seem counterintuitive, but the more confidence people have in their ability to grasp the science, the more able they are to slot it into their existing worldview.

So does that mean that climate change communicators should give up? Absolutely not - but we should not be looking to science to provide us with the answer to a problem that is social in nature. The challenge is to find a way of explaining why climate change matters using language and ideas that don't alienate people. Simply repeating the scientific case for climate change is - unfortunately - not going to cut it.

In fact, the more we know, the less it seems that [climate change scepticism](#) has to do with climate science at all. [Climate change provokes such visceral arguments](#) because it allows ancient battles - about personal responsibility, state intervention, the regulation of industry, the distribution of resources and wealth, or the role of technologies in society - to be fought all over again.

It follows that the answer to overcoming climate change scepticism is to stop reiterating the science, and start engaging with what climate change scepticism is really about - competing visions of how people see the world, and what they want the future to be like.

[Do you "believe" in climate change might not be the scientifically rational question to ask](#), but it is the most essential one to address if we are to understand - and ultimately get beyond - climate change scepticism.”

<http://www.culturalcognition.net/browse-papers/the-tragedy-of-the-risk-perception-commons-culture-conflict.html>

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The Tragedy of the Risk-Perception Commons: Culture Conflict, Rationality Conflict, and Climate Change

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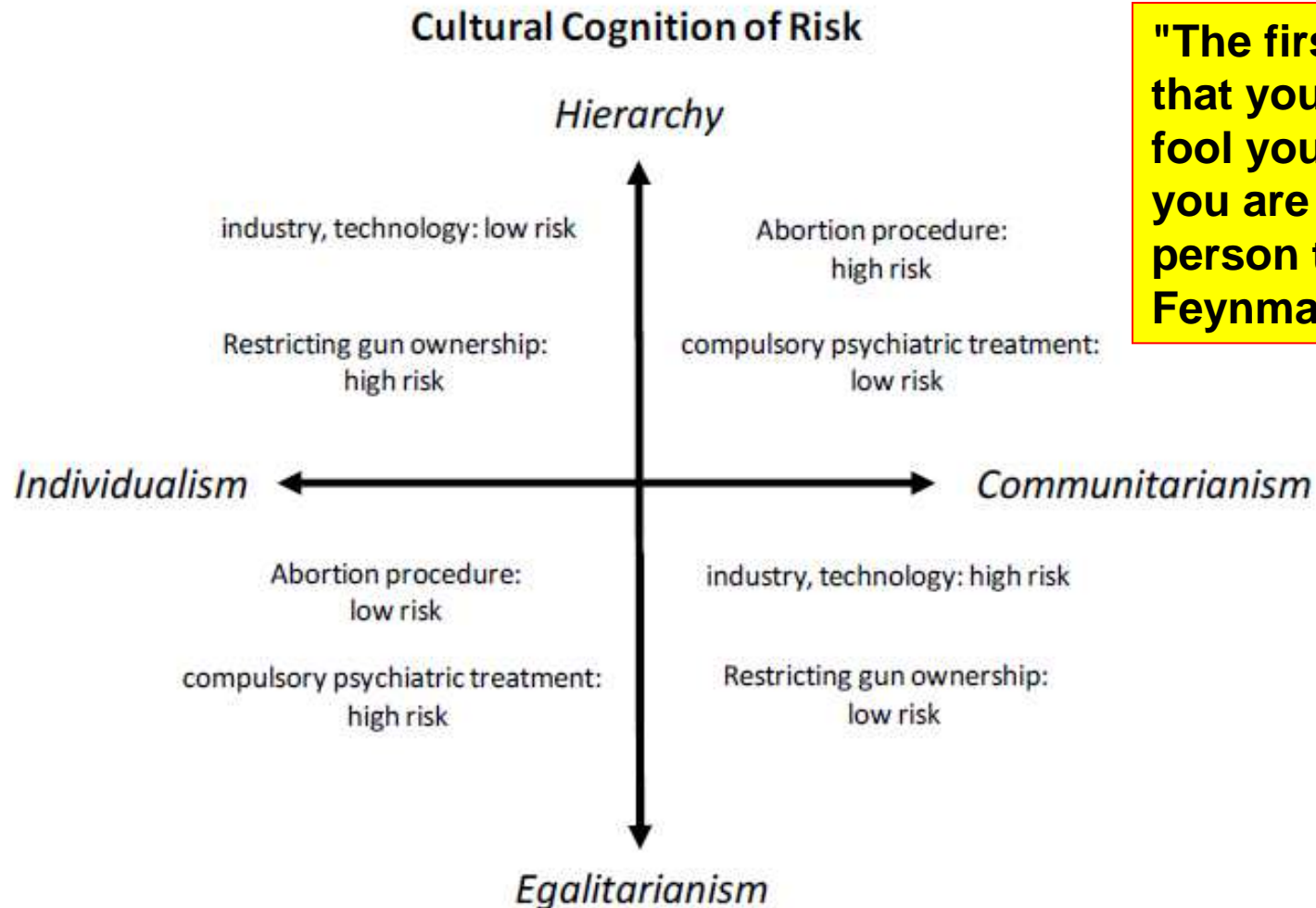
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1. Introduction: Is public opinion rational?

Controversy over climate change is commonly attributed to a deficit in public comprehension of scientific information. The most straightforward explanation is ignorance: the public knows too little science to understand the evidence or to avoid being misled by distortions of it. A subtler account puts the blame on widespread cognitive biases and related limitations on the capacity of citizens to assess information about risk. In short, because members of the public do not know what scientists know, or think the way scientists think, they predictably fail to take climate change as seriously as perfectly rational risk-evaluators would.

The goal of this paper is to challenge this critique of the rationality of public opinion on climate change. Our motivation is in part to show how poorly supported the conventional picture of public dissent is by empirical evidence: *scientific* examination does not bear out the premise that deficiencies in science education or defects in individual reasoning explain conflict over climate change.



"The first principle is that you must not fool yourself, and you are the easiest person to fool." R.P. Feynman

SI Figure 5. Cultural cognition of risk. Using attitudinal scales, the cultural cognition theory measures cultural worldviews, or preferences for how society and other collective undertakings should be organized, along two dimensions, "Hierarchy-Egalitarianism" and "Individualism-Communitarianism." The theory on which it is based predicts that perceptions of environmental and technological risks should be expected to diminish as worldviews become simultaneously more hierarchical and individualistic, and increase as worldviews become simultaneously more egalitarian and communitarian. Other types of risks, including ones relating to public health and social deviance, can be expected to vary more dramatically as worldviews become progressively more hierarchical and communitarian or progressively more egalitarian and individualistic. (Kahan in press; Wildavsky & Dake, 1990).

“How much risk do you believe climate change poses to human health, safety, or prosperity?”

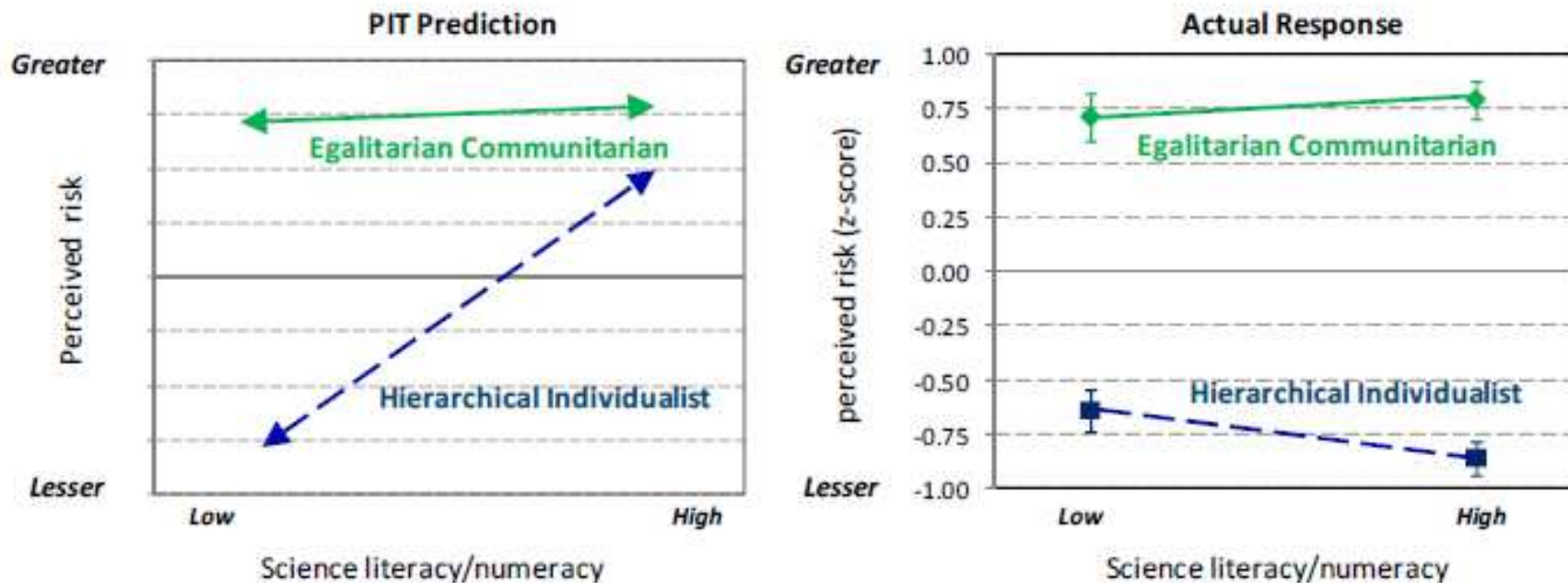


Figure 3. PIT prediction vs. actual impact of interaction between science literacy and numeracy, on the one hand, and cultural worldviews, on the other. $N = 1540$. Derived from multivariate regression SI Table 3, model 3). Contrary to PIT’s predictions, highly science literate and numerate Hierarchical Individualists are more skeptical, not less, of climate-change risks. “Hierarchical Individualist” and “Egalitarian Communitarian” reflect values set, respectively, at $+1 SD$ and $-1 SD$ on both the Hierarchy and Individualism cultural worldview scale predictors. “Low” and “high” reflect values set at $-1 SD$ and $+1 SD$ on Science/Numeracy scale, a composite scale based on respondents’ science literacy and numeracy scores. Responses on 0-10 risk scale ($M = 5.7$, $SD = 3.4$) converted to z-score to promote ease of interpretation. CIs reflect 0.95 level of confidence.

“How much risk do you believe nuclear power poses to human health, safety, or prosperity?”

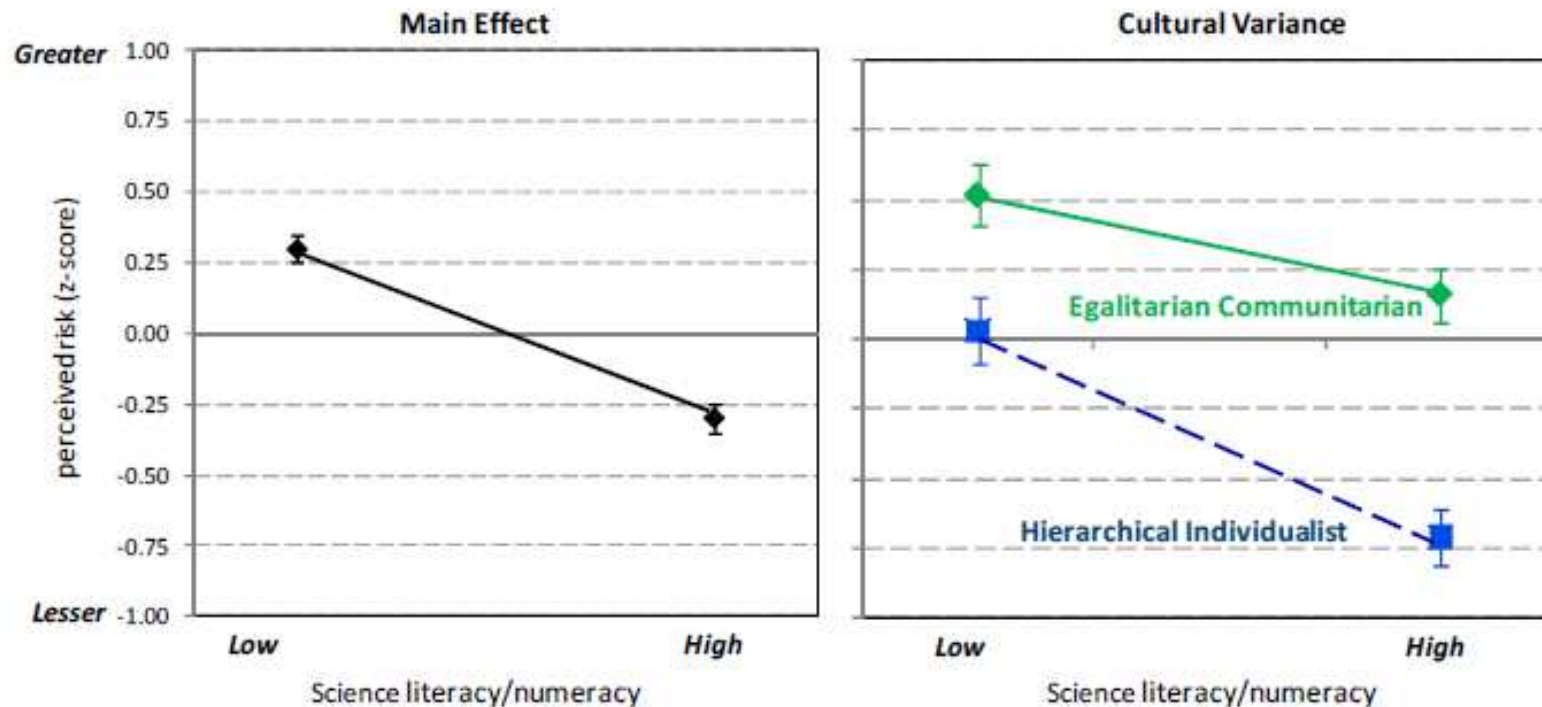
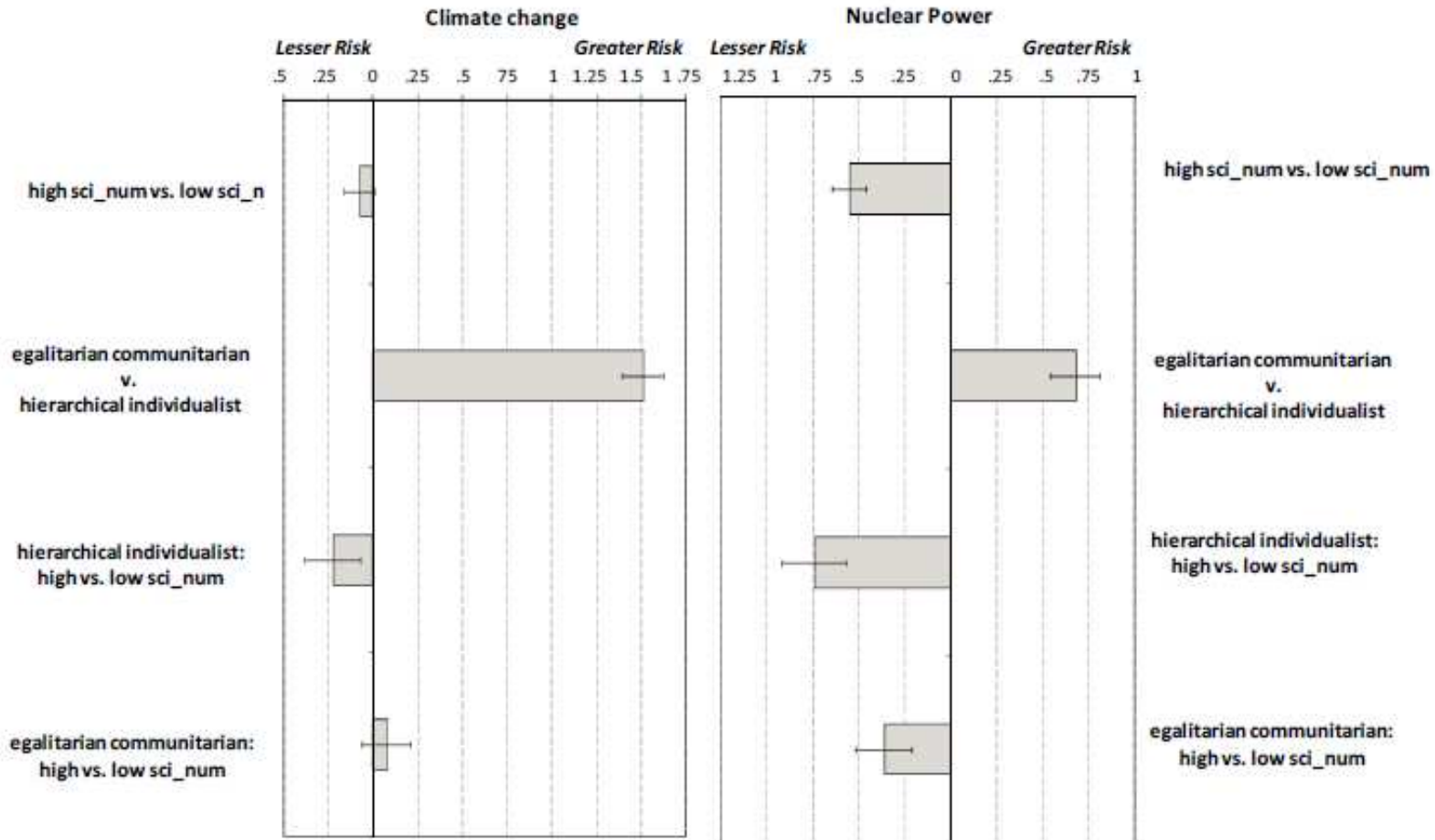


Figure 4. Impact of science literacy and numeracy, and of interaction between science literacy and numeracy, on the one hand, and cultural worldviews, on the other, in prediction of nuclear-power risk perceptions. $N = 1540$. “Main Effect” derived from univariate regression (SI Table 4, Model 3). The perceived risk of nuclear power is lower among the most science-literate and most numerate respondents than among the least science-literate and numerate ones. However, again contrary to PIT, cultural polarization does not diminish but instead increases as respondents become more science literate and numerate. “Hierarchical individualist” and “Egalitarian communitarian” reflect values set, respectively, at $+1 SD$ and $-1 SD$ on both the Hierarchy and Individualism cultural worldview scale predictors. “Low” and “high” reflect values set at $-1 SD$ and $+1 SD$ on Science/Numeracy scale, a composite scale based on respondents’ science literacy and numeracy scores. Responses on 0-10 risk scale ($M = 6.1$, $SD = 3.0$) converted to z-score to promote ease of interpretation. CIs reflect 0.95 level of confidence.

“How much risk do you believe ... poses to human health, safety, or prosperity?”



SI Figure 6. **Multivariate regression estimates.** Estimates derived from Model 3 of the regression outputs reported in SI Table 3 and SI Table 4, respectively. Bars indicate the difference between estimated value of the outcome variable when the indicated predictors are set at the values specified before “versus” and the value of the outcome variable when the indicated predictors are set at the values specified after “versus.” For “high” and “low Science/Numeracy,” Science/Numeracy predictor values are set at +1 and -1 SD, respectively. For “hierarchical individualist” the cultural worldview predictor values are set at +1 SD on both the Hierarchy and Individualism worldview scales, while for “egalitarian communitarian” the predictors are set at -1 SD on both worldview scales. Product-interaction term values are set correspondingly. CIs indicate 0.95 level of confidence.

5. Conclusion: The science of science communication as a public good

Our study results belie the conventional view that controversy over policy-relevant science is rooted in the public's lack of scientific knowledge and its inability to engage in technical reasoning. As ordinary people learn more science and become more proficient in modes of reasoning characteristic of scientific inquiry, they do not reliably converge on assessments of climate change risks supported by scientific evidence. Instead they more form beliefs that are even more reliably characteristic of persons who hold their particular cultural worldviews.

... Citizens are most likely to be driven off the path of convergence on the best available science, this research shows, when issues of environmental and technological risk become freighted with cultural meanings that motivate diverse groups to form opposing positions. This state is by no means inevitable with respect to any particular issue. What's more, how such a state comes about does not defy empirical explanation, which can in turn be used to *predict* such controversies and to formulate strategies aimed at forestalling their occurrence or ameliorating their consequences should they occur.

Development of these forecasting and management tools is the task of the *science of science communication*. Establishing the institutions and procedures necessary for promoting their reliable use in