



## Why we are poles apart on climate change

The problem isn't the public's reasoning capacity; it's the polluted science-communication environment that drives people apart, says **Dan Kahan**.

Understandably anxious to explain persistent controversy over climate change, the media have discovered a new culprit: the public. By piecing together bits of psychological research, many news reporters, opinion writers and bloggers have concluded that people are simply too irrational to recognize the implications of climate-change science.

This conclusion gets it half right. Studying things from a psychological angle does help to make sense of climate-change scepticism. But the true source of the problem, research suggests, is not that people are irrational. Instead, it is that their reasoning powers have become disabled by a polluted science-communication environment.

Social-science research indicates that people with different cultural values — individualists compared with egalitarians, for example — disagree sharply about how serious a threat climate change is. People with different values draw different inferences from the same evidence. Present them with a PhD scientist who is a member of the US National Academy of Sciences, for example, and they will disagree on whether he really is an 'expert', depending on whether his view matches the dominant view of their cultural group (D. M. Kahan *et al.* *J. Risk Res.* **14**, 147–174; 2011).

The positions on climate change of both groups track their impressions of recent weather. Yet their impressions of what the recent weather has been are polarized, too, and bear little relationship to reality (K. Goebbert *et al.* *Weath. Clim. Soc.* **4**, 132–144; 2012). But is this sort of cultural polarization evidence of irrationality? If it is, then how can we explain the fact that members of the lay public who are the most science literate, and the most proficient at technical reasoning, are also the most culturally polarized (D. M. Kahan *et al.* *Nature Clim. Change* <http://dx.doi.org/10.1038/nclimate1547>; 2012)?

If anything, social science suggests that citizens are culturally polarized because they are, in fact, too rational — at filtering out information that would drive a wedge between themselves and their peers.

For members of the public, being right or wrong about climate-change science will have no impact. Nothing they do as individual consumers or as individual voters will meaningfully affect the risks posed by climate change. Yet the impact of taking a position that conflicts with their cultural group could be disastrous.

Take a barber in a rural town in South Carolina. Is it a good idea for him to implore his customers to sign a petition urging Congress to take action on climate change? No. If he does, he will find himself out of a job, just as his former congressman, Bob Inglis, did when he himself proposed such action.

Positions on climate change have come to

signify the kind of person one is. People whose beliefs are at odds with those of the people with whom they share their basic cultural commitments risk being labelled as weird and obnoxious in the eyes of those on whom they depend for social and financial support.

So, if the cost of having a view of climate change that does not conform with the scientific consensus is zero, and the cost of having a view that is at odds with members of one's cultural community can be high, what is a rational person to do? In that situation, it is perfectly sensible for individuals to be guided by modes of reasoning that connect their beliefs to ones that predominate in their group. Even people of modest scientific literacy will pick up relevant cues. Those who know more and who can reason more analytically will do a still better job, even if their group is wrong on the science.

So whom should we 'blame' for the climate-change crisis? To borrow a phrase, it's the 'science-communication environment, stupid' — not stupid people.

People acquire their scientific knowledge by consulting others who share their values and whom they therefore trust and understand. Usually, this strategy works just fine. We live in a science-communication environment richly stocked with accessible, consequential facts. As a result, groups with different values routinely converge on the best evidence for, say, the value of adding fluoride to water, or the harmlessness of mobile-phone radiation. The trouble starts when this communication environment fills up with toxic partisan meanings — ones that effectively announce that 'if you are one of us,

believe this; otherwise, we'll know you are one of them'. In that situation, ordinary individuals' lives will go better if their perceptions of societal risk conform with those of their group.

Yet when all citizens simultaneously follow this individually rational strategy of belief formation, their collective well-being will certainly suffer. Culturally polarized democracies are less likely to adopt policies that reflect the best available scientific evidence on matters — such as climate change — that profoundly affect their common interests.

Overcoming this dilemma requires collective strategies to protect the quality of the science-communication environment from the pollution of divisive cultural meanings. Psychology — along with anthropology, sociology, political science and economics — will play a part. But to apply the insights that social science has already given us, we will have to be smart enough to avoid reducing what we learn to catchy simplifications. ■

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