

# Changing perceptions: belief and climate science

Psychological science can help understand public and political disengagement with climate science findings in a ‘post-truth’ world and help scientists reach their target audience

By Kenny Coventry



Oxford Dictionaries declared “post-truth” as their international word of the year in 2016. It is an adjective “relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief”. With the new US administration in place, there is heightened concern among scientists about climate change scepticism and the more general backlash against “experts”, fuelled by politicians on both sides of the Atlantic.

Psychological science aims to understand the processes people use when comprehending and evaluating information, and individual differences that might mediate one’s capacity to process that information. To understand why a significant minority of people do not accept the expert consensus on climate change, individual differences in education and ability levels seems a plausible starting point.

However, recent work examining public beliefs about climate change shows that poor education is not associated with disbelief in scientific consensus. While there is a positive correlation among US Democrats between level of education and belief in anthropogenic climate change, the pattern is in the opposite direction for Republicans.

Kahan and colleagues have examined the impact of individual beliefs on perceived climate change risks. Individuals form perceptions of societal risks that cohere with the values of the groups with which they identify (the “cultural cognition thesis”). People who associate authority with conspicuous social rankings and eschew collective interference with the individual decision making of those in authority (“hierarchical individualists”) are much more likely to rate climate change risks as lower than those who favour less regimented forms of social organisation and greater collective attention to individual needs (“egalitarian communitarians”). It is these personal-difference dimensions that are more predictive of acceptance of anthropogenic climate change than science, literacy or numeracy.

So not believing in consensus findings from expert communities has more to do with core beliefs than education. There is growing evidence that processes such as language comprehension and memory depend on the expectations of the person doing it as much as on the information being read or recalled.

Answer this question: How many animals of each type did Moses take on the ark? If you automatically thought “two”, you did what most people do (it was Noah, not Moses) – you have used knowledge and expectation to reduce the amount of work

needed to process information. We are adept as a species at using existing knowledge in memory, generated within the wider culture with which we identify, to drive understanding of scientific findings and communications, and what we expect to learn from them.

So how do we counter these “expectation-driven models of understanding”? It is a real challenge. Scientists have a duty to present findings in a way that affords ease of comprehension for scientists and non-scientists alike. To do so, psychological science findings can inform how data can be best communicated to be easier to process for the target audiences.

At the University of East Anglia and Temple University, we have been developing a set of guidelines for climate scientists to improve the accessibility of visual presentation of climate change data. But improving accessibility is not enough. As Kahan and colleagues note, dissociating scientific find-

ings from belief may be the key to breaking the stranglehold of expectation models of understanding where core beliefs trump consensual scientific interpretation. In a post-truth reality, scientists need to develop a better understanding of science communication to ensure that science gets a fair hearing. ■

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