

FACT OR FICTION

CLIMATE SCEPTICISM



*"I have striven not to laugh at human actions, not to weep at them, not to hate them, but to understand them." BARUCH SPINOZA, TRACTATUS POLITICUS, 1676*¹

*"Climate change can bring us together, if we have the wisdom to prevent it from driving us apart" MARGARET BECKETT*²

*"In spite of the divisions and power struggles that exist, coping with climate change could be a springboard for creating a more cooperative world" ANTHONY GIDDENS*³

Climate scepticism is a broad term used to describe the belief that climate change is not happening, or, if it is occurring, that human activities are not the cause. There is generally no love lost between environmentalists and climate sceptics.

Environmentalists fear that the extreme views of the sceptics are convincing people to reject global warming and to do nothing about it. But perhaps, in part, we're looking at an example of chicken and egg syndrome - maybe people's inability to get their head around climate change, its implications and what to do, is causing some scepticism, rather than the other way round? Or if people are reluctant or confused by the issues, then they may be drawn to what the sceptics say – after all, their message is much nicer than ours!

Either way, head to head rows, which often descend into verbal fist-fighting, on radio or TV between both sides don't seem to be cutting the mustard. There are no winners when the public just switches out or switches off. Such heated arguments just lead one to wonder if it's better not to mention the words climate change at all.....

ARE WE THAT DIFFERENT?

While my blood can still boil listening to a hardened sceptic argue his case, I'm mindful of the fact that in the late 1990's, I was part of a movement that in its own way was sceptical too. And many of the arguments we make against climate sceptics today were probably made against us back then.

¹ Quoted by Jonathon Haidt (2012) *The Righteous Mind-why good people are divided by politics and religion*

² Margaret Beckett, *British Foreign Secretary; Un Security Council; 2007; quoted by M Hulme (2009) Why we Disagree about Climate Change; p. 285*

³ A Giddens (2009) *The Politics of Climate Change; p. 229*

As part of the, now defunct, Genetic Concern campaign against genetic engineering, my colleagues and I felt we were underdogs fighting an industrial machine. We had a few fervent scientists supporting our case, but, let's face it, they were on the margins of the scientific establishment. Today, climate sceptics believe they are up against a bureaucratic behemoth, and on their side they have a raggle-taggle mix of equally concerned scientific voices.

In general, climate sceptics don't trust government, and they believe that because climate science is largely funded by government it must be unsound. We, on the other hand, didn't trust industry, and the fact that biotech companies were funding GMO research made us believe it was tainted. Our scientists were few in number, and usually not working directly in the area, but we believed that industry controlled the research and therefore wouldn't employ dissenting voices, or release any negative results. The climate sceptics feel that government funded climate science bodies won't support or publish any of their studies.

In relation to climate change, we see the sceptics as being backed by big bad industry, they see us as being in the pocket of big bad government.

We used to hate when the media gave more coverage to the pro-GMO lobby, feeling that fairness and a need for balance dictates that minority views should be heard. Now we hate the way climate sceptics get so much coverage, and we bemoan the fact that they are such a minority group, seemingly getting equal air time!!

SCIENTIFIC CONSENSUS

Climate sceptics often say that there is no scientific consensus on global warming. However, this is not true.

The International Panel for Climate Change is a scientific, intergovernmental body set up under the auspices of the UN in 1988. It is claimed that over 2,500 scientists from all over the world contribute to the work of the IPCC as authors, contributors and reviewers and that industry has no involvement. Governments participate in plenary Sessions where main decisions about the IPCC work programme are taken and reports are accepted, adopted and approved. They also participate in the review of IPCC Reports (which, some worry, waters down the results).

The Nobel Peace Prize 2007 was awarded jointly to Intergovernmental Panel on Climate Change (IPCC) and Al Gore *"for their efforts to build up and disseminate greater knowledge about man-made climate change, and to lay the foundations for the measures that are needed to counteract such change"*⁴

The IPCC's 2007 Report declared that the warming of the world's climate is now "unequivocal", a claim based upon extensive observations of increases in global average air and ocean temperatures, the widespread melting of snow and ice, and rising global average sea levels. And the IPCC scientists agree that such global warming is caused by human activities. Its next report is due to be published, section by section, from September 2013 onwards. A draft has been leaked online and, while it rows back a bit on predictions relating to drought and tropical storms and the cooling effect of air pollution, its overall message is sobering. The report says that the Arctic, which experienced record low levels of ice in September 2012, may see ice-free summers by 2100 (many climatologists feel this is too optimistic and expect ice-free seasons before 2050), and predicts greater sea-level rise than in 2007. Their conclusion is that it is *"very likely"* that the past three decades have all been warmer than any time in the past 800 years; that we could see almost 9 °C of warming by 2300; and that *"a large fraction of climate change is largely irreversible on human timescales"*.⁵

⁴ http://www.nobelprize.org/nobel_prizes/peace/laureates/2007/

⁵ <http://www.newscientist.com/article/dn23014-what-leaked-ipcc-report-really-says-on-climate-change.html>

The Intergovernmental Panel on Climate Change (IPCC) is a scientific body under the auspices of the United Nations (UN) and is the leading international body for the assessment of climate change and is the IPCC.

It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988 to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. In the same year, the UN General Assembly endorsed the action by WMO and UNEP in jointly establishing the IPCC. The IPCC reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. It does not conduct any research nor does it monitor climate related data or parameters.

Scientists from all over the world contribute to the work of the IPCC on a voluntary basis. Review is an essential part of the IPCC process, to ensure an objective and complete assessment of current information. IPCC aims to reflect a range of views and expertise. The Secretariat coordinates all the IPCC work and liaises with Governments. It is supported by WMO and UNEP and hosted at WMO headquarters in Geneva.

The IPCC is an intergovernmental body. It is open to all member countries of the United Nations (UN) and WMO. Currently 195 countries have joined. Governments participate in the review process and the plenary Sessions, where main decisions about the IPCC work programme are taken and reports are accepted, adopted and approved. The IPCC Bureau Members, including the Chair, are also elected during the plenary Sessions.

In legitimate scientific circles, it is very difficult to find evidence of disagreement over the fundamentals of global warming. Naomi Oreskes,⁷ from the University of California, conducted a study of more than 900 articles on climate change, published in refereed journals between 1993 and 2003. Of these, 75% endorsed the view that anthropogenic (man-made) emissions were responsible for at least some of the observed warming of the past 50 years. The remaining 25%, which dealt with questions of methodology or climate history, took no position on current conditions. Not a single article disputed the premise that anthropogenic warming is under way. She concludes that *“the mass media have paid a great deal of attention to a handful of dissenters in a manner that is greatly disproportionate with their representation in the scientific community. The number of climate scientists who actively do research in the field but disagree with the consensus position is evidently very small.”*

At the end of 2012, the geochemist James Lawrence Powell,⁸ who was appointed by Ronald Reagan to the US National Board for Science and Technology, trawled through scientific articles searching for the keywords “global warming” or “global climate change”. He felt that if there was disagreement among scientists, based not on opinion but on hard evidence, it would be found in the peer-reviewed literature. Going way back to January 1st, 1991, and right up to November 2012, Powell’s search turned up a total of 13,950 articles. Of these, just 24 – 0.17% or one in 581 – clearly rejected global warming or endorsed a cause other than carbon dioxide emissions for the observed warming of 0.8 degrees since the beginning of the industrial era.

From this study, Powell concludes the following:

- global warming denial is missing from the scientific literature
- the authors of the rejecting papers tend not to agree with, or even to cite, each other’s work
- other than the authors themselves, only a handful of other scientists cite the few rejecting articles. Those who do cite the rejecting articles do not themselves reject human-caused global warming

⁷ J DiMento & P Doughman (eds.) (‘07) *Climate Change - what it means for us, our children and our grandchildren*; p. 74

⁸ <http://www.jamespowell.org> AND <http://www.irishtimes.com/newspaper/sciencetoday/2013/00117/1224328940445.html>

- the rejecting authors have no alternative theory to explain the observed warming. They do not even agree among themselves.
- the vast majority of publishing climate scientists accept that human activities are causing the Earth to warm.

The BBC has an interesting take on things. In a 2007 report on safeguarding impartiality,⁹ the BBC Trust made the following statement:

“There may be now a broad scientific consensus that climate change is definitely happening, and that it is at least predominantly man-made. But the second part of that consensus still has some intelligent and articulate opponents, even if a small minority.

The BBC has held a high-level seminar with some of the best scientific experts, and has come to the view that the weight of evidence no longer justifies equal space being given to the opponents of the consensus. But these dissenters (or even sceptics) will still be heard, as they should, because it is not the BBC’s role to close down this debate. They cannot be simply dismissed as ‘flat-earthers’ or ‘deniers’, who ‘should not be given a platform’ by the BBC. Impartiality always requires a breadth of view: for as long as minority opinions are coherently and honestly expressed, the BBC must give them appropriate space. ‘Bias by elimination’ is even more offensive today than it was in 1926. The BBC has many public purposes of both ambition and merit – but joining campaigns to save the planet is not one of them. The BBC’s best contribution is to increase public awareness of the issues and possible solutions through impartial and accurate programming. Acceptance of a basic scientific consensus only sharpens the need for hawk-eyed scrutiny of the arguments surrounding both causation and solution. It remains important that programme-makers relish the full range of debate that such a central and absorbing subject offers, scientifically, politically and ethically, and avoid being misrepresented as standard-bearers. The wagon wheel remains a model shape. But the trundle of the bandwagon is not a model sound”.

MORE THAN SCIENCE

But maybe there are so few dissenting scientific papers, because scepticism about climate change is really about a lot more than just science.

Climatologist, Mike Hulme¹⁰ says that climate change has emerged as a phenomenon which poses challenges on an unprecedented scale. It is an environmental, cultural and political phenomenon which is reshaping the way we think about ourselves, our societies and humanity’s place on Earth. It is an intangible, un-situated risk. And risk perceptions are socially constructed, with different groups prone to take notice of, fear and amplify some risks, while ignoring, discounting or attenuating others. How the risks are perceived by the public will also depend on the particular contexts that people find themselves in - their personal experience of climatic danger; who they trust; their way of thinking; their values and world-views. Therefore, he says, we cannot simply expect scientific experts to conduct and communicate climate risk assessments and that individuals and social groups will consequently act to reduce those risks.

⁹ From *Seesaw to Wagon Wheel - Safeguarding impartiality in the 21st century*; BBC Trust; 2007; p. 40
http://www.bbc.co.uk/bbctrust/assets/files/pdf/review_report_research/impartiality_21century/report.pdf

¹⁰ M Hulme (2009) *Why we Disagree about Slimat Change - Understanding controversy, inaction and opportunity*

Adam Corner, research associate in the School of Psychology at Cardiff University,¹¹ writing for the Guardian's Environment Blog, extends this line of reasoning. He points out that several decades of social psychology have shown that on any number of topics, people squeeze new evidence through powerful social and cultural filters. Pouring facts into this filter system does not necessarily produce consensus – and it can even cause attitudes to polarise.

The arguments are not really about the science, they are disputes about personal values, regulation, economic growth or the acceptable level of government intervention in our lives. Climate change just happens to cut to the heart of these red hot issues – and so it is used as a vehicle for thrashing out ancient disputes. The fact that so many US Republicans dispute climate change illustrates this.

So, there is no point in turning up the volume on the science.

Instead, Corner suggests that our methods for engaging the public need to move away from the one-way dissemination of information, and towards more participatory approaches. If people deliberate more with each other about climate change, then the reasons for disagreement may come to the surface. If these reasons are based on values, cultural world-views or ideology, then it makes sense to get these disagreements out into the open rather than obscuring them by fighting political battles using the language of science.

GENETIC ROOTS

As we have seen in article 4, conservatives generally believe in individual freedom, tradition, moral values and a society with small government. They are more likely to be sceptical of climate change.

Whereas, liberals generally believe in liberty, equality and a benign but active state. They are more likely to accept climate change.

There is a growing interest amongst political scientists that political ideology may have biological or genetic roots. Of course this line of argument is controversial and causes much hackle-raising.

Detractors say that such research diminishes the role of reason in political debate. Many have also criticised the research for being too simplistic and reducing the complexities of political opinion to just two sides. The fact that most of the researchers are themselves liberal evokes claims of possible bias and distortion. However, it is worth mentioning here.

Jesse Graham & Sarah Estes¹² give an overview of the research, much of which involves snooping around aspects of people's lives. They say that when researchers went looking, they found that the conservatives' rooms were more orderly and had more objects relating to order like stamps, calendars, cleaning products. Liberals' rooms were messier, with more objects related to open-mindedness, such as travel books, art supplies, and diverse music collections.

The researchers concluded that these outward traits were a manifestation of inward traits, specifically openness and conscientiousness, two of the "big five" dimensions of personality that are known to have a strong genetic basis. They believed that, in general, liberals are more open-minded, creative, curious, and novelty seeking, while conservatives are more orderly, conventional and better organised.

¹¹ <http://www.guardian.co.uk/environment/blog/2010/nov/23/climate-change-sceptism-not-about-science>

¹² Jesse Graham & Estes; *Political Instincts*; New Scientist; 3rd Nov. 2012; p. 41-43

And different ideologies affect your social preferences. As a rule, conservatives are more likely than liberals to prefer white people, straight people and high status groups. Liberals are more comfortable with members of ethnic and sexual minorities and they also prefer high status groups, although not to such an extent as the conservatives. And, in psychological tests that measure unconscious attitudes, these preferences operate outside of conscious control.

Stable ideological differences have also been found in moral judgements. Liberals are more morally offended by suffering and inequality, while conservatives are more morally offended by betrayals of the in-group, disrespect for authority and tradition, and signs of sexual or spiritual impurity.

Again these differences seem to have biological roots, and have been linked to anatomical differences in the size of various brain structures.

Differences have also been found at the level of cognition and perception. Conservatives are more likely to want to turn uncertainties into certainties and ambiguity into clarity, while liberals have a higher need for cognition itself, enjoying deliberation and mental challenges.

Conservatives are more likely to report seeing the world as a dangerous place, and are more sensitive to disgust cues and the “yuck” factor.

Liberals were better able to control their impulses and showed more activity in the anterior cingulate cortex, an area of the brain associated with cognitive control and self-regulation. Conservatives have more grey matter in the right amygdala, an area associated with threat response and intense emotions.

In an interview in *New Scientist*,¹³ psychologist and author, Jonathan Haidt, points out that politicians like Newt Gingrich are very skilled at manipulating moral sentiments. From an understanding of “*visceral morality*” Gingrich devised a list of words Republicans should use when talking about Democrats, including “*dirty*”, “*sleazy*” and “*cheating*”. When you talk about a “*dirty idea that will bring us down into the gutter*”, the words are very powerful. Haidt says that Democrats are much less skilled at pushing buttons; they talk about programmes like social security and Medicare, but it is not clear what their core moral values are.

The Heartland Institute, a Chicago based think tank notorious for promoting climate scepticism, knows how to use visceral morality. On 4th May 2012, they launched a billboard campaign. The posters pointed out that some of the world’s most notorious criminals say that they “still believe in global warming” – and asked viewers if they do, too. Those featured included the Unabomber, Ted Kaczynski; the mass murderer, Charles Manson and Cuba’s Fidel Castro (Osama bin Laden and hostage-taker James J. Lee were due to appear on future posters).

According to Heartland’s press release,¹⁴ these rogues and villains were chosen “*because they made public statements about how man-made global warming is a crisis and how mankind must take immediate and drastic actions to stop it*”.

And the justification for this? - “*Because what these murderers and madmen have said differs very little from what spokespersons for the United Nations, journalists for the “mainstream” media, and liberal politicians say about global warming..... Still believing in man-made global warming – after all the scientific discoveries and revelations that point against this theory – is more than a little nutty. In fact, some really crazy people use it to justify immoral and frightening behaviour..... The people who still believe in man-made global warming are mostly on the radical fringe of society. This is why the most prominent advocates of global warming aren’t scientists. They are murderers, tyrants, and madmen.*”

Within 24 hours the ad campaign had been shelved, due to criticism from all quarters!

¹³ *New Scientist*; 3rd March 2012; p. 30/1

AND Jonathon Haidt; *The Righteous Mind-why good people are divided by politics and religion*; Allen Lane; 2012

¹⁴ <http://www.guardian.co.uk/environment/blog/2012/may/04/heartland-institute-global-warming-murder>

Jonathan Haidt argues that the key to the partisan nature of US politics today is to understand the concept of “righteousness”. He believes our minds evolved to be moralistic, and that the ability to create moral matrices and punish, shame and ostracise was in fact a great breakthrough for our species. We can cooperate because of our righteous minds.

Morality binds people into groups. On the negative side it can give us tribalism, genocide and war. But it also gives us heroism, altruism and sainthood. But dividing into teams doesn’t necessarily mean denigrating others. Studies have found that groups increase in-group love far more than they increase out-group hostility. Dividing into groups increases social capital and trust. But when it crosses the line from “we disagree with you ” to “you are evil” then people begin to believe the ends justify the means and all hell breaks loose. If you think you are fighting Satan then it’s okay to break the rules.

The solution, he believes, is for people to stop demonising each other and to become interested in listening to, and understanding, the other side. He believes that the Tea Party is driven in large part by concerns about fairness, not fairness as equality of outcomes, but fairness as karma – good deeds will lead to good outcomes and bad deeds will lead to suffering. Many conservatives believe that the Democratic party just wants to absolve people from moral responsibility - *You’re pregnant? Don’t worry have an abortion; addicted to drugs? Here’s methadone*. The Tea Partiers don’t hate all government, just government that subverts moral responsibility. They are perfectly happy with social security, as it’s fair; *you pay in and you get out*.

Each side sees truths about how to run a good society which the other side can’t see, so we need everyone’s insights. You can’t have just one team running the show.

Perhaps, this also applies to the climate sceptics and climate acceptors. We need to get off our high horses, learn to understand each other more, and try to find some common ground.

Carol Dweck of Stanford University and others,¹⁵ led a series of studies showing that people are more likely to harbour negative attitudes towards other groups when we believe them to be incapable of change. Their studies with Israelis and Palestinians demonstrate that people can be induced to see the other side as more flexible, which not only leads to more positive attitudes towards one another, but also makes individuals more willing to compromise for peace.

SCEPTICISM HAS ITS PLACE

In November 2009, a server at the Climatic Research Unit (CRU) at the University of East Anglia, was hacked by an external attacker. The story was first broken by climate change critics on their blogs, who argued that the e-mails showed that global warming was a scientific conspiracy, and they alleged that scientists manipulated climate data and attempted to suppress critics. The CRU rejected this and said that the emails had been taken out of context and merely reflected an honest exchange of ideas.¹⁶

A year after “Climategate”, Professor of Climate Change at the University of East Anglia, Mike Hulme, wrote an article in The Guardian.¹⁷ He maintained that, largely thanks to the e-mail hacking controversy, the climate debate has shifted in a number of significant ways:

¹⁵ *New Scientist*; 22nd Sept. 2012 to see the study <http://www.sciencemag.org/content/333/6050/1767.abstract>

¹⁶ http://www.en.wikipedia.org/wiki/Climatic_Research_Unit_email_controversy

¹⁷ *The Year Climate Science was Defined*

<http://www.guardian.co.uk/environment/2010/nov/15/year-climate-science-was-redefined>

There has been an opening up and re-analysis of some of the core observational datasets which underpin the detection of climate change trends. The Met Office is leading a thorough international re-analysis of 150 years of land and marine temperature data. Calls for greater transparency around scientific analysis have boosted the embryonic project of the Climate Code Foundation and its efforts to make all climate computer code open-source.

The Inter-Academy Council review has recommended some significance changes in the way the IPCC assesses knowledge, in particular how it documents areas of both agreement and disagreement in the underlying science. And the Royal Society, reflecting this new mood, has issued a new guide to climate change science which separates “aspects of wide agreement”, “aspects of continuing debate” and “aspects not well understood”. The objective of these reflexive responses in science has been to demonstrate transparency and rebuild trust.

There has been a re-framing of climate change. The simple linear frame of *“here’s the consensus science, now let’s make climate policy”* has lost out to the more ambiguous frame: *“What combination of contested political values, diverse human ideals and emergent scientific evidence can drive climate policy?”* The events of the past year have finally buried the notion that scientific predictions about future climate change can be certain or precise enough to force global policy-making. Those who have long favoured a linear connection between climate science and climate policy – including environmentalists, contrarians and some scientists and politicians – have been forced to rethink. It is clearer today that the battle lines around climate change have to be drawn using the language of politics, values and ethics rather than the one-dimensional language of scientific consensus or lack thereof.

There has been a fragmentation of climate policy-making and people have lost faith in the multilateral process of the United Nations Framework Convention on Climate Change.

Instead, Hulme says, there is a new pragmatism in the air, which has resulted in:

- an emphasis on the climate co-benefits of other policy innovations, such as those on health and poverty
- a necessity to drive forward new publicly-funded investments in low-carbon energy technology
- the cultivation of multi-level polycentric institutions and partnerships through which policy innovation may occur, rather than relying exclusively on the UN process

And he says that these three changes reflect much larger cultural and political struggles regarding knowledge and power in the contemporary world: the challenges to the norms of science coming from deep social and digital connectivity; the struggle to establish the appropriate cultural authority for science; and the struggles to bring democratic accountability to emergent international and global forms of governance. The shifts we are seeing around climate change are therefore symptomatic of these wider struggles.

Interestingly, Ipsos MORI’s last poll of British attitudes to climate change, in January 2010,¹⁸ at the height of “Climategate” found 91% of British people believed climate change was a reality; only 10% believed global warming is caused by natural forces; 87% believed people will become more concerned about climate change in the future; and 49% that it is endangering the whole of life on Earth

Similarly, a Guardian/ICM poll in January 2011¹⁹ found 83% agreed that climate change poses an imminent or current threat with just 14% saying it poses no threat at all; the survey found 68% believed humans cause climate change.

¹⁸ <http://www.ipsos-mori.com/researchpublications/researcharchive/poll.aspx?oltemid=2552>

¹⁹ <http://www.guardian.co.uk/environment.interactive/2011/jan/31/climate-change-poll>

WHAT'S THE WORST THAT COULD HAPPEN?

Science teacher, Greg Craven²⁰ reckons that people are sick of the global warming shouting match, and he can see why they find it easier to just let the two sides have a go at each other and wait for the dust to clear. In an online video called *The Most Terrifying Video You'll Ever See* (which has since had over 10.5 million hits) he offered a suggestion on how to cut through the shouting and draw your own conclusion in the debate, without needing to decide which side to believe. It centres on a simple little 2-by-2 "decision grid" and asks which mistake would you rather risk: the possible harm to the economy that sceptics embrace or the possible upheaval the activists warn us about? Which is the more acceptable risk: the risk of taking action or not taking action?

See U-Tube clip here <http://www.gregcraven.org/>



²⁰ Greg Craven; (2009) *What's the Worst that Could Happen? - a rational response to the climate change debate*;