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‘Climategate’: Paradoxical metaphors and political paralysis

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Abstract

Climate scepticism in the sense of climate denialism or contrarianism is not a new phenomenon, but it has recently been very much in the media spotlight. When, in November 2009, emails by climate scientists were published on the internet without their authors’ consent, a debate began in which climate sceptic bloggers used an extended network of metaphors to contest (climate) science. This article follows the so-called ‘climategate’ debate on the web and shows how a paradoxical mixture of religious metaphors and demands for ‘better science’ allowed those disagreeing with the theory of anthropogenic climate change to undermine the authority of science and call for political inaction with regard to climate change.

Keywords: climate scepticism, climate science, policy, metaphor, framing, religion

I. Introduction

"We've arranged a civilization in which most crucial elements profoundly depend on science and technology. We have also arranged things so that almost no one understands science and technology. This is a prescription for disaster. We might get away with it for a while, but sooner or later this combustible mixture of ignorance and power is going to blow up in our faces."

(Sagan, 1995: 25-26; quoted in Mooney and Kirshenbaum, 2009)

At the beginning of 2009 Mike Hulme, former Director of the Tyndall Centre for climate change research at the University of East Anglia (UEA), UK, published a book entitled *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Hulme, 2009). At the end of 2009 events occurred which threw into sharp relief three of the key words used in the title: controversy, opportunity and inaction. Controversy arose around emails by climate scientists at the UEA, which had been made public on the internet at the end of November 2009 either by a hacker or an insider. Opportunities for mitigating climate change were explored at the United Nations Conference on Climate Change in Copenhagen (COP15), which took place at the beginning of December 2009. Heated debates about the emails brought to the fore profound disagreements about climate science but also, and more importantly, about the nature of science and the role that science plays in policy making. Finally, COP15 highlighted disagreements about how to share the costs of climate change mitigation activities amongst developing and developed nations and ended with political inaction.

On Tuesday 17 November "a substantial file including over 1000 emails either sent from or sent to members of the Climatic Research Unit ('CRU') at the UEA, was downloaded on the RealClimate website, together with meteorological station data used for

research by CRU into the rate of the Earth's warming, particularly over the past 150 years, and other material.” (Press release by the UEA, 2009). In this article I study how this corpus of climate scientists' private emails, published on the internet without permission, was used by some climate sceptics to express disagreement with climate scientists who support the theory of anthropogenic climate change. Such disagreements are not new but the emails provided climate sceptics, in the sense of deniers or contrarians¹, with a golden opportunity to mount a sustained effort aimed at demonstrating the legitimacy of their views. This allowed them to question climate science and climate policies based on it and to promote political inaction and inertia. As this was such an important occasion for climate sceptics to voice their views and challenge climate science, I want to ask: How was this disagreement discursively constructed or framed and what were the particular aims of this framing (i.e., the constructed image of climate science and scientists)? To answer these questions I examined a large corpus of blogs posted at the end of 2009, as most of the debate around the emails initially happened in the blogosphere.

The paper first provides some background to the email scandal that came to be known as ‘climategate’.² I then give an overview of the methods and materials used to study the debate. This leads into my analysis of the way that bloggers used sometimes paradoxical religious metaphors in conjunction with appeals to core tenets of science. Their aim was to question the central results of climate science and the policies that rely on its results. Such an analysis is necessary given that:

Climate-change denial could have disastrous consequences, if it delays global action to cut carbon emissions. Denialism is gaining popularity because people have difficulty differentiating deniers' twisted arguments from the legitimate concerns of genuine sceptics. (Kemp et al., 2010)

Using paradoxical religious metaphors became, for some, an integral part of their arguments. This paper then aims to show how such arguments provide a misleading and distorted view of science which deviates from genuine concern over scientific uncertainty.

II. Background: ‘Climategate’ and climate scepticism

Research carried out over decades at the UEA CRU, by its director Phil Jones and his collaborators, has supported the case for anthropogenic climate change. This research contributed to the scientific consensus on which climate change mitigation policies, such as those sought during COP15, are meant to be based. As mentioned above, at the end of November 2009 emails relating to this research appeared on the internet and triggered a debate about climate science in which climate change sceptics played an important role and in which the credibility and honesty of scientists was questioned. On 14 April 2010 a report by the Lord Oxburgh’s Independent Panel cleared CRU of any scientific impropriety or dishonesty.³

There are many speculations about how the UEA CRU emails came to be published on the internet and about who put them there and for what reason and what prompted the timing, a matter of weeks before Copenhagen. What is important to note is that the emails were originally sent over a 15-year period ending on November 12, 2009. As soon as the emails were made available on the internet, the blogosphere took over their discussion, with the mainstream media only gradually catching up (see Figure 1 in next section).

Bloggers focused on a few emails in which scientists had a heated debate about work they saw as flawed and whether it deserved to be published. There was also discussion of others in which scientists discussed how to adjust data while referring to this, colloquially, as a ‘trick’. Although this word is standard mathematical jargon, it was viewed with suspicion and led to controversy.

The main tenet of the online discussion, dominated by voices from the right of the political spectrum (see section IV), was that the emails showed that the science on which climate mitigation policies relied was untrustworthy.⁴ Indeed discussants claimed the theory of anthropogenic climate change, or global warming, was a ‘scam’, ‘conspiracy’ or a ‘hoax’ perpetrated by scientists in order to deceive the public. Scientists were portrayed as being in cahoots with politicians, with both reaping financial benefits. Such views permeated cyberspace under the name of ‘climategate’ (and more rarely ‘warmergate’ or ‘hackergate’).

Denouncing the theory of global warming as a scam or a swindle is not new. It is part of what Stuart Sim (2006) has called ‘special interest scepticism’:

The theory of global warming has its skeptics too [...]. Rather than humankind being responsible for global warming, as most scientists in the field contend, these skeptics argue that it is all part of the Earth’s natural cycle and that arguments to the contrary amount to a conspiracy by the scientific community to gain funding for their research projects: a ‘scam’, in the words of one particularly forthright critic. Such critics are closer to our idea of a sceptic, but again, they are not necessarily as open-minded in their general outlook as we would like. This is especially so since their skepticism is often in the service of big business (the international oil companies, for example) [...]. Such ‘special interest’ scepticism has to be treated with a considerable degree of caution. (Sim, 2006: 10)

Such special interest scepticism has marked debates about climate change in the US for a long time, had waned around 2008 when President Barack Obama was elected, but started to rise again in 2009 (Pew, 2009; CNN, 2009). As Jacques et al. (2008: 349) claim, this type of scepticism is “a tactic of an elite-driven counter-movement designed to combat environmentalism” and may have “contributed to the weakening of US commitment to environmental protection” (see also McCright and Dunlap, 2003).

‘Climategate’ seems to have been linked to this type of scepticism and probably had some effect on recent public understanding of and response to climate change, although it is not clear how long this effect will last. As *The Guardian* reported in February 2010:

Public conviction about the threat of climate change has declined sharply after months of questions over the science and growing disillusionment with government action, a leading British poll has found. The proportion of adults who believe climate change is "definitely" a reality dropped by 30% over the last year, from 44% to 31%, in the latest survey by Ipsos Mori. (Jowit, 2010)

A survey carried out by the University of Cardiff in September and November 2009 found a similar trend; this seems to show that climate scepticism was not triggered but was certainly strengthened by ‘climategate’ (see Chand, 2010).

Calling the email controversy a ‘gate’ probably contributed to this trend. The morpheme *-gate* had first been used as a label during the ‘Watergate’ scandal and can now be used to refer to any scandal whatsoever usually involving some type of (suspected) cover-up by politicians. *-gate* reverberates or resonates with popular imagination and cultural knowledge and opens up a whole narrative space or frame which allows people to easily structure their arguments about a controversial topic, in this instance climate change. As Matthew Nisbet has pointed out in his blog “Framing Science”, “the now commonly used term ‘ClimateGate’ (sic) to refer to the case of the East Anglia stolen emails is an extremely effective frame device that instantly – if not falsely – conveys that there is wrongdoing, politicization, and a cover-up on the part of mainstream scientists.” (Nisbet, 2009) The blogs that discussed ‘climategate’ made good use of this little morpheme, but they also skilfully exploited a whole network of religious metaphors which will be the focus of this article. Metaphors too are, as Nisbet pointed out, ‘effective framing devices’; even more so when they come in clusters and networks. Such metaphors deserve more scrutiny as they shape

views about science, scientists and climate change. They also shape what actions are taken, or not taken, based on such views.

III. Methods and corpus

Metaphors are tools for conveying novel or abstract ideas in familiar and mostly concrete ways. When talking about the vicissitudes of life for example, we may use the conceptual metaphor LIFE IS A JOURNEY⁵ and say, “I have come to the end of the road...” or “I have reached a turning point...”. Ordinarily, the cognitive linguistic approach (see Lakoff and Johnson, 1980), which studies such pervasive conceptual metaphors or metaphorical mappings between two domains of experience (in this case: life and journeys), tended to focus on single sentence examples of metaphors, not whole discourses, and it tended to favour made-up examples, rather than examples collected in naturally occurring discourse. In keeping with newer trends in cognitive linguistics (see Frank et. al., 2008), I focus here on metaphors as part of political discourse, and collected *in situ*, and as having a distinctive social relevance. This makes metaphor analysis part of discourse analysis. Discourse is not limited to ‘mere talk’ but also viewed as socially constitutive (Fairclough, 1992: 64) and as influencing or structuring social conduct and social perception (Webster, 2003: 89). It also makes metaphors part of frame analysis (which may overlap with discourse analysis), as metaphors constitute one of the most salient framing devices (see Entman, 1993; Nerlich et al., 2009).

As early as 1644, Giambattista Vico (1948) pointed out that metaphors are like myths in miniature. In 1957 Roland Barthes (1970) noted that myths are not just imaginative and ‘untrue’ tales, but that we use them in everyday life to make sense of the world around us. Through such stories we structure our views of the world and make it seem ‘natural’ or ‘commonsensical’ for us (see Nerlich et al., 2002). This is, to some extent, what happened in

the ‘climategate’ debate. By framing or conceptualising science *as* religion or myth, opponents to the theory of AGW (anthropogenic global warming) and its political consequences, created their own myth or story of science as fraud or untruth. This then made the conclusions they drew from their stories and arguments (e.g., no political action needs to be taken with regards to climate change) feel natural and like common sense. As one blogger wrote:

Elitists can try to smoke us with a lot of technical-sounding gobbledygook, but the simple facts (including the reality that theirs is 95% guesswork) along with a dash of common sense blows away that smokescreen and makes the picture very clear.

No, the whole idea of anthropogenic global warming is based on a little sloppy science and quite a bit of fraud from people who should know better, but dont care.

Well, we average Americans care. We care about seeing our hard-won constitutional freedoms annihilated under oppressive environmental regulations, and we care about seeing our national sovereignty sacrificed on the altar of environmental extremism.

(Dakota Voice, 8 December)

Lakoff and Johnson (1980: 185-186) note that “[l]ike metaphors, myths are necessary for making sense of what goes on around us [...] just as we often take the metaphors of our own culture as truths, so we often take the myths of our own culture as truths”. In our case, climate change science itself may be framed as a myth in the sense of Barthes. Alternatively, it may be framed as a myth or religion in the sense of untruth. This is a way of making sense of, telling ‘the truth’ about science, based upon certain shared values and attitudes that seem to be threatened by science.

This article uses a combination of discourse analysis and metaphor analysis in order to reveal the strategic use of metaphor as a framing device to steer social debate and generate expectations and beliefs (see Hart, 2008). In this case the beliefs are negative ones, about

climate science in particular and science in general. As the debate I wanted to study occurred primarily on the web, studying blogs on ‘climategate’ seemed to be a natural way forward to gaining insight. There is an increasing interest in the study of blogs by discourse analysts. As Greg Myers (2010) has pointed out: “if blogs are becoming important in political, social and economic life, we need to know how they work, just as we need to know about political speeches, journalism and advertisements. The persuaded have to know what the persuaders are doing” (p. 3). However, while web-based discourse analysis has advantages, mainly in being able to capture a debate in almost real time, it also poses challenges which are “linked to the size of the web, its diversity, ephemeral quality, interactivity, and multimodality” (Mautner, 2005: 809).

Selecting a manageable corpus for analysis was one of the major challenges. The choice of a search term was relatively easy, namely ‘climategate’. However, this has some disadvantages having been appropriated mainly by those critiquing climate science and climate policy. So this framing may exclude voices that oppose the term.

Lexis Nexis Professional, a database of newspapers, magazines and other sources, was the tool used for gathering the blogs. This database has traditionally been used to study press coverage of various debates in science and society and now also provides access to some blogs via Newstex (see newstex.com). ‘Newstex Blogs On Demand’ makes available full-text blog content from ‘premier Weblogs’ (creators of ‘content rich’ blogs; see premierweblogs.com) in a wide variety of categories including art, career, economics, environment, finance, food, health, law, marketing, medical, technology, video games and many more.

The period covered was one month from 18 November 2009, just before the leak of the emails, to 18 December, the end of COP15. Figure 1 shows the 'Google trends' graph for the period. Note, this graph is only indicative of certain trends and may, as Google points out,

contain inaccuracies.⁶ Bloggers began discussing the CRU emails as soon as they appeared in the cybersphere (separate trend graphs for the US, the UK, Canada and Australia show that the debate began in the US a few days before the UK and elsewhere), peaked at the end of November and began to peter out when COP15 began. The graph also indicates that traditional news media were slow to jump on this particular ‘bandwagon’, but did so mostly around 7th December 2010 just before the opening of COP15.

Figure 1 about here

The start of this outbreak of blogging coincided with a speech by a major US climate change sceptic, Senator James Inhofe on 18 November, in which he, presciently, calls 2009 “the year of the skeptic”. He announced that he was travelling to COP15 as the leader of the “Truth Squad”, that is as one of those who did not regard climate science as ‘settled’ (Inhofe, 2009) or in his opinion settled in the wrong way.⁷ A day later, on 19 November, Anthony Watts first broke the story of the emails on his (award winning) blog *Watts Up With That*. This blog now has a special section devoted to ‘climategate’.⁸ The term ‘climategate’ itself seems to have been used first on 20 November in a blog by James Delingpole (2009), a writer for the UK’s conservative newspaper *The Daily Telegraph*, who made this his major topic for blogging for several weeks.

The corpus contains 921 blog postings (as compared to 792 traditional news articles in ‘All English Language News’ for the same period), probably only a fraction of the blogs published on ‘climategate’ at the end of 2009. These blogs make links to other blogs (such as *Watts Up With That*, *American Thinker* and James Delingpole’s blog, which were very influential but are not covered by Newstex). They also link to videos, Twitter feeds, and Facebook.⁹ Later on links were made to articles in the mainstream media, such as *The Daily*

Mail, the *Wall Street Journal*, and the *Washington Post*. I did not follow these links. Furthermore, Newstex does not provide access to responses and threads of responses to the blogs. Although following these up would be valuable, this meant, for practical reasons, that I concentrated on the content of the blogs itself and examined them with a particular focus on the metaphorical framing they used.

A first, shallow, reading of the blogs determined whether any type of metaphorical expression was used, and if so what kind and in what types of arguments such metaphors were embedded. Religious metaphors were found to play an important role in the blog discourses and in arguments relating to issues such as truth, evidence, certainty, consensus and belief. I extracted 97 passages containing metaphorical expressions relating to religion, faith, church and cults. These passages were then submitted to a close reading through which individual metaphors, metaphor clusters, groupings and ultimately overarching conceptual metaphors, in our case SCIENCE IS RELIGION, were extracted. At the same time the main arguments in which these metaphors were used were recorded, for example to challenge ‘scientific consensus’ or ‘truth’ or to frame global warming as a ‘myth’, ‘fraud’ or ‘conspiracy’.

IV. Analysis: Religious metaphors, paradox and paralysis

Most of the blogs in my corpus were written by people affiliated with the conservative right, with a few lone voices from the so-called liberal elite sprinkled amongst them (about 10 out of 921). The main contribution from Europe came in the form of the blog *EU Referendum*, by Richard North, a Eurosceptic¹⁰. Prominent blogs from the US were *PA Pundits*¹¹, which advocates the "relentless pursuit of common sense" and of "the Truth in today's Mish-Mash World"; *Dakota Voice*, which has contributors from around the US and examines local, state, national and world issues of interest to conservatives and Christians¹²; *Right Wing News*¹³;

plus *Small Dead Animals*, a Canadian blog which won an award for best conservative blog in 2008.¹⁴

These voices contribute to what some have called the ‘denialosphere’, a word first coined to refer to those denying the theory of evolution.¹⁵ There are certain overlaps between the two cases. One where religious believers reject scientific research that contradicts their beliefs and accuse scientists of fundamentalism. The other where religious framing is used to reject scientific research which contradicts right-wing interests and to accuse scientists of a type of religious fundamentalism akin to extremism, socialism, and communism. Some ‘climategate’ bloggers may share views with creationists, but not necessarily. For example, the Australian geologist Ian Plimer criticises both creationism and ‘climatism’ (mentioned in PA Pundits, 24 November). Some even use creationism as yet another religious insult when they call scientists who claim that humans ‘create’ global warming ‘climate creationists’ (see PA Pundits, 8 December). However, in both cases, when creationists criticise evolutionary biologists and when climate sceptics criticise climate scientists, the phrase ‘secular religion’ is used to attack science and scientists. As Stephen Jay Gould (1997) wrote:

Our creationist detractors charge that evolution is an unproved and improvable charade — a secular religion masquerading as science. They claim, above all, that evolution generates no predictions, never exposes itself to test, and therefore stands as dogma rather than disprovable science. This claim is nonsense. We make and test risky predictions all the time; our success is not dogma, but a highly probable indication of evolution's basic truth. (1997: 409).

– could one say something similar of ‘climategate’ detractors? Let us look in more detail at what climate sceptics mean by conceptualising climate science as a religious phenomenon.

SCIENCE IS RELIGION

The *Compact Oxford English Dictionary* gives as one of the meanings of ‘religion’: “a particular system of faith and worship” and as one of the meanings of science “a systematically organized body of knowledge on any subject”. Climate sceptics generally mapped this meaning of religion onto this meaning of science in various ways. They claim that the emails show that climate scientists, rather than increasing knowledge, tried to buttress their fabricated system of faith and that this then destroyed the credibility and the integrity of science as a whole. This also meant that, according to climate sceptics, having ‘faith’ in science was unwarranted, even dangerous, whereas, obviously, having faith in their own sceptical endeavour goes unquestioned.

This is different from other disputes in which one party frames the other party in terms of ‘religion’. For example, calling evolutionary biologists opposed to creationism ‘fundamentalists’, or calling environmentalism a ‘secular religion’ (see Dyson, 2008). One renown instance of this type of framing is in the novel by Michael Crichton (2004), referenced in a blog written by *RightWingNews* on 9 December. Crichton describes eco-terrorists, driven by religious fervour, attempting mass murder.

There are then three types of religious framing which are relevant for this analysis: (i) where creationists use religion to denigrate biology, (ii) where critics frame the environmental movement as a secular religion, and (iii) where ‘climategate’ bloggers frame climate science in particular and science in general as a religion. However, these framings overlap. Both climate scientists ‘believing’ in AGW and biologists ‘believing’ in evolution and defending their views with conviction and authority are dismissed as religious fundamentalists by their opponents. The second case (environmentalism) is interesting, as environmentalists, that is, those who ‘believe’ climate scientists and want to act on their advice, have been framed as a ‘secular religion’ for quite a while (Dunlap, 2004), but this framing is now being transferred onto climate scientists and science itself.

In the following I shall first provide an overview of the metaphors around science and religion used by bloggers and then go on to discuss in more detail issues of truth, evidence and certainty which are discussed by bloggers using these metaphors.

Dominant metaphorical framing

Although the overall conceptual metaphor (see footnote 7) underlying some of the ‘climategate’ discourse can be encapsulated as SCIENCE IS RELIGION, it should be stressed that it subsumes other aspects of what one can call ‘religion’ in a broad sense, such as cults, the church, faith and so on. These aspects of ‘religion’ are used by the bloggers to conceptualise various aspects of science (e.g., scientific theories, scientists, their dissemination activities, the confidence they have in the results achieved, the predictions they can extrapolate from them, the policies based on science) in a negative way.

Some of the most prominent examples of metaphorical expressions that exploit (and shape) the conceptual metaphor SCIENCE IS RELIGION in order to say something about science are:

- Science (is): “cult”, “fear-mongering climate-change faith-system”.
- Scientific theories (are): “dogma”, “myth”, “gospel”, “bible”.
- Scientific consensus (is): “orthodoxy”, “collectivism and Godism”, “canon”, “singing from the same hymn sheet”.
- Scientists (are): “messiah”, (confirmed, true) “believers”, “zealots”, “prophets”, “apostles”, “wizards and warlocks”, “gurus”, “false priests”, “high priests”, “unchallengeable priesthood”, “clerics”, “acolytes”, “adherents”, “evangelists”, “the converted, man-made global warming illuminati”.
- Scientific dissemination (is): “crusade”, “preaching”.

- Scientific confidence (is): “belief”, “religious conviction”, “almost religious type beliefs”, “devotion”, “worship”.
- Scientific predictions (are): “prophecies”, “doomsday prophecies”.
- Scientists interacting with sceptics (is): “cult in which nay-sayers must be crushed”, and where sceptics are “heretics”, “witches”.

Some of these metaphorical expressions became the basis of rather paradoxical arguments about science, theories, truth and evidence, consensus and certainty, and what it means for a scientific dispute to be settled.

Theories, truth and evidence

By framing science as religion, climate sceptics conceptualise scientific knowledge about the influence of human activities on the atmosphere as unassailable dogma, orthodoxy or truth, which cannot be questioned or shaken by new evidence. As one of them pointed out: “No amount of evidence will dent the cult's belief in AGW” (quoted in: *The Moderate Voice*, 7 December). Now, paradoxically, some climate sceptics took a very small number of casually written emails as conclusive evidence that the theory of AGW is not only wrong but a fraud, despite the fact that it is, as most scientists agree, based on a “massive body of evidence that has been collected over decades by hundreds of climate scientists” (*The Moderate Voice*) or, as *Nature* put it, on “multiple, robust lines of evidence, including several that are completely independent of the climate reconstructions debated in the e-mails” (quoted in *Midwest Voice*, 14 December).

The ‘problem’ is that the majority of climate scientists actually think they are right (after having worked on the issues and theories for many years and having accumulated evidence). However, climate sceptics still think they are wrong and therefore accuse them of abandoning scientific norms and of engaging in scientific fraud. They seem cleverly to

project what Karl Popper called “the wrong view of science” onto scientists by implying that they “crave to be right” (Popper, 1959/2002: 281). What climate scientists consider to be the truth, insofar as science can ever approximate truth, their detractors frame as Truth without empirical foundation, that is, religious Truth which they equate with ‘falsehood’ or fraud. This means that while on the one hand they want people to believe that ‘truth is out there’ which can be used to refute claims about climate change, truth claims by those who support claims about climate change are deemed to be of a religious nature, i.e. not amenable to checking against the ‘truth’ held to be out there, or, if checked, found to be wanting. Climate sceptics’ own beliefs in ‘the truth’ (which climate scientists try to ‘hide’), namely that there is either no climate change or that it is all just part of a natural cycle, are, however, not subjected to the same sceptical scrutiny and religious deconstruction.

Many sceptics also accuse climate scientists not only of ignoring scientific evidence in order to support their theories, but also of ignoring the ‘evidence’ of fraud, which, they claim, is staring them in the face in the emails:

Combined with the ignoring of the evidence of cooking the books from the Climategate, this is not exactly anything to inspire confidence in the rationality of the Great and Obaminable Church of Glowbull Warming in all its various denominations and iterations. (RadioactiveChief, 9 December)

Even when faced with plausible evidence the whole thing might be a fraud, global warming believers simply found a way to assert that evidence was not necessary. (PA Pundits, 23 November)

Some critics then demand that “the scientific evidence speaks for itself” (ShrinkWrapped, 8 December). This can be positively interpreted as demanding more transparency and access to data, but letting the evidence speak for itself is inherently problematic. To whom would this scientific evidence ‘speak for itself’? Who would be able to listen and understand? Scientists,

most probably, who have been doing this for decades and who then speak to the public or politicians about what the evidence might mean. This meaning is not self-evident. Data do not speak for themselves. They have to be interpreted against the backdrop of a theory. Some sceptics have rather paradoxical views about this. As one US Senator proclaimed: “The truth is the truth [...] The facts are the facts. This whole theory of manmade global warming is just that: It is a theory.” (Trail Blazers Blog, 8 December). However, it is not ‘just a theory’. In the same way as evolution is not ‘just a theory’. The senator, like some creationists in the US, seems to employ the lay meaning of ‘theory’, i.e. as a mere hunch or speculation, something with no more authoritative status than ‘for argument’s sake’. However, theory in science means something quite different. “It is a well-supported, well-documented explanation for certain observations. It ties together all the facts about something, providing an explanation that fits all the observations and can be used to make predictions” (see <http://www.notjustatheory.com/>). So far, the theory of AGW fits that second meaning of theory.

Certainty and consensus

Climate scientists and environmentalists have known for a long time that

Special interest groups and policymakers opposed to legislative action to reduce human emissions of CO₂ and other greenhouse gases often cite “uncertainty” in climate change science to justify their position. While there is much uncertainty in climate science (and there always will be), many researchers in the field insist that this uncertainty does not justify the lack of a policy response. In fact, scientists know a great deal about climate change, and there is a strong scientific consensus that the Earth is warming significantly, primarily due to human activities. (Briscoe, 2004)

Referencing previous research, for example by Zehr (2000), Antilla (2005) has shown that “the popular press uses a number of methods to frame climate science as uncertain, including ‘through the practice of interjecting and emphasizing controversy or disagreement among scientists’; this often creates drama and provides journalists ‘with a guise of objectivity’ (p. 90)” (Antilla, 2005: 340; see also Boykoff and Boykoff, 2004; 2007).

Surprisingly, in framing science as religion, those opposed to political action on climate change cited not *uncertainty* but *certainty* as the stumbling block:

We [have] returned to the Dark Age of corruption, delusion, superstition and unreason. The Global Warming religion is as virulent and insidious as all mind-bending cults of *absolute certitude*, and yet it has become mainstream orthodoxy and infallible spirituality faster than any faith-based cult in history. It has its clerics and its passionate prophets; it has its machinery and lucrative industry; it has its urgent way and irrefutable truth. It awaits only its messiah. The Copenhagen Summit is the Ecumenical Council for the religion of the age. (EU Referendum, 8 December, italics added)

In this paragraph from a blog which is rather densely populated with religious metaphors, this framing is used to claim that climate scientists are being overly confident in the results of their studies, (i.e., certain, religiously dogmatic). In this context ‘climategate’ bloggers also tried to undermine what, until ‘climategate’, had been increasingly regarded as a scientific consensus by collocating consensus with ‘manufactured’ and ‘phony’ and by comparing it to the consensus that surrounded phrenology, eugenics and Piltdown man or comparing it to the Loch Ness Monster (see PA Pundits, 23 November; Digital Journal, 8 December). This means that the consensus that exists is questioned as a false consensus on the one hand and as being too consensual on the other – what many critics call a climate science ‘orthodoxy’. By accusing climate scientists of too much certainty and too much consensus, such bloggers imply that some sort of conspiracy must be at work. This is quite different to media coverage

of climate change five years earlier. For example, Antilla (2005) found that: “These press reports perpetuate the myth of a lack of international scientific consensus on anthropogenic climate change—and thereby succeed in maintaining public confusion.” (p. 352)

Both the older argument, that there should be more certainty, and the newer one, that there is too much certainty, make political action impossible and create paralysis. Asking for total certainty is based on a rather outdated view of science (Peat, 2002) and in effect asks for the impossible. It therefore makes politics - to be regarded as ‘the art of the possible’ (Otto von Bismark, 1867) - impossible. Simultaneously, sceptics attempt to undermine any existing consensus (Doran and Kendall Zimmermann, 2009) by framing it in religious terms as ‘dogmatism’. This again makes political action impossible, as it undermines the credibility of scientists (who are portrayed as priests, clerics, acolytes, fundamentalists and so on). This encourages a position of social “inertia”, political “inaction” and even “gridlock” (see McCright, 2007: 201, 204). This maintains, as Antilla has pointed out, public confusion about climate change and contributes to a crisis in climate change communication.

Sound and settled science

As one of the blogs pointed out:

The apostles of the religion of anthropogenic global warming desperately want people to believe their flimsy theory about the earth warming due to human activity is based on science, *settled* science they tell us, where there is *consensus* of all scientists with no disagreement in the scientific community. (Dakota Voice, 18 December)

What does ‘settled science’ mean? When is science (ever) settled, and should it ever be settled? In some sense science is never really settled and there is and always should be disagreement, as we have seen when discussing certainty. Although there are islands of science that are in effect pretty much settled, the scientific process thrives on unsettling

things and quite relishes uncertainty. Researchers are, on the whole, never happier than when unsettling somebody else's theory or seeing uncertainties that others had not seen before. This is quite different to dogmatism and religious belief.

Belief and trust

As in the case of 'theory', climate sceptics exploit certain meanings of the words 'belief', 'believe' and 'believer' which are opposed to the way they are commonly used in science, and more akin to religious belief. The word 'belief' alone has, as pointed out in the *Compact Oxford English Dictionary*, at least three meanings: 1 a feeling that something exists or is true, especially one without proof. 2 a firmly held opinion. 3 (belief in) trust or confidence in. 4 religious faith (online). Now, the majority of scientists can be said to 'believe' in climate change or the theory of AGW in the sense of having confidence in their science, of trusting in what they have established and having a firmly held opinion or conviction. This belief is based on some sort of empirical 'proof', whereas religious belief generally is not. Some religions demand blind faith instead, something that climate critics accuse climate scientists of fostering.

I agree with Aaron Davidson who wrote that "Science is a belief system which aims to minimize faith. Religion, on the other hand, is a belief system based completely on faith. [...] [In contrast to religion] science has a greater explanatory power, and is open to belief revision." (Davidson n. d., online) 'Climategate' 'believers' claim that climate scientists produce a type of science that is no longer open to revision and has therefore turned into a belief system in the sense of a faith, based on fear and fraud.

As a result of the exposure of The CRU Papers, we now know that claims of such changes were fraudulently fabricated and perpetrated by the priests and believers of the fear-mongering climate-change faith system.

And, just as fraudulent claims by the false priests of any other fear-mongering religion claiming to be saving your soul in some non-confirmable way say nothing about the metaphysics of theology, so too the protection-racket extortions being perpetrated by the false priests of abnormal climate change say nothing about the epistemology of science. [...] The AGW movement has been exposed as a religious belief and a political cash cow, not science. (Ed Driscoll, 29 November)

As another blogger wrote, ‘climategate’ “[s]uggests that their [scientists’] predictions now are uncheckable, unfalsifiable—in short, not science but faith” (Patrick McIlheran: Right On, 7 December). Some bloggers claim that climate science trumps traditional religions in demanding more faith from believers:

Every religion requires a certain amount of faith or belief, since every religion contains at least some claims which cannot be empirically verified. But in order to believe the religion of anthropogenic global warming, adherents put believers in most of the traditional religions of the world to shame. (Dakota Voice, 10 December)

However, in contradiction to the sceptics’ position, *glaciergate* demonstrated that climate scientists are quite willing to correct, or falsify, claims and not to stick to them like religious beliefs. This *-gate* followed ‘climategate’. It concerned an apparent exaggeration in a prediction made about when glaciers in the Himalayas would melt. Scientists involved accepted this was the case (see McKie, 2010).

A concern is that the words ‘belief’ and ‘believe’ slip easily into environmental and climate science discourses themselves. They also appear in certain branches of the sociology of science related to the Strong Programme (see for example Barnes et al., 1996), where both science and religion are studied as institutionalised forms of belief or truth. Hence, when using words like ‘belief’ and ‘believe’ care has to be taken not to allow reinterpretation by climate discontents.

Confusingly, ‘belief in global warming’ (in the non-religious sense) has become such a common phrase, that people think they can measure it, as CNN did just before the opening of COP15, and found that ‘it’ was decreasing among Republicans in particular (CNN, 2009). “Yet casting questions like this as a matter of belief is nonsensical.” (Shermer, 2010: 36)

This loss of ‘belief’ is certainly not only based on an increase in activity by climate sceptics and a loss of trust in science, provoked by hyping up the content of stolen or leaked email exchanges between scientists. Economic uncertainties over the costs and benefits of Greenhouse gas control have played a major role in framing the policy discourse (Spash 2007). Certainly there is a distinct possibility that if policy makers had a cheap and uncomplicated solution to the problem of climate change, trust in science and belief in the honesty, integrity and credibility of scientists and science-based policy would quickly be restored, not least among ‘the average American’. As, Deborah MacKenzie has pointed out, “denial finds its most fertile ground in areas where the science must be taken on trust. There is no denial of antibiotics, which visibly work.” (MacKenzie, 2010: 38)

Conclusions

Scepticism about climate change has a long tradition and has, for some time, been accompanied by framing those who ‘believe’ in climate change, or who want to mitigate its consequences, in religious terms. However, during ‘climategate’, this religious framing took on a new, paradoxical form. Whilst formerly sceptics cited uncertainty in order to undermine climate science, some now invoked certainty to challenge it. While in the past they might have said that inaction was the right thing because there was not enough of a scientific consensus, some now said that there was too much of a consensus and inaction was therefore still the right choice. While using rather weak evidence to question the foundations of climate policy, they asked for more and more evidence in an infinitely regressing and paralysing

search for solid foundations on which to base policy. Finally, while evoking some norms of ‘real science’ (see Palin, 2009a), such as objectivity, falsification and the accumulation of evidence, sceptics did not apply these norms to their own endeavour.

Overall, ‘climategate’ may have damaged public understanding of science and science-based public policy in two ways. First, by making people think that science is just another form of religion the public understanding of and public trust in science are undermined. Second, and more importantly, by making people believe that science is based on the pursuit of certainty, or universal truth, or on the achievement of an absolute consensus, a very outdated understanding of (normal) science is perpetuated. This is what some of the sceptics may call ‘commonsense’ but is an understanding of science that makes public policy inherently impossible.

Public understanding of modern science should rather be based instead on appreciating the nature of uncertainty and the impossibility, even undesirability, of establishing universal truths. It should also be based on understanding that, as in the case of climate change, politics has to be based on taking decisions under conditions of radical uncertainty (even when some sort of consensus has been achieved, as in the various IPCC reports). When these decisions impinge on the economic certainties of modern citizens, or big business, a debate has to begin not about the nature of science but about the nature of values.¹⁶ As former President of the Royal Society, Sir Robert May, said, some years ago, during the debate about genetically modified foods:

This is a debate about values, with science having no special voice except in factual clarification of possibilities and constraints. But the task is as hugely difficult as it is hugely important. And a large part of the difficulty lies in the uncertainties that are an inseparable part of science at the frontier. It helps to recognize, and explicitly acknowledge, these uncertainties [...]. (May, 2001)

In response to ‘climategate’, Mike Hulme wrote: “We expect too much certainty, and hence clarity, about what should be done. Consequently, we fail to engage in honest and robust argument about our competing political visions and ethical values.” (Hulme, 2009b) Climate sceptics, who imply through their religious framing of science that ‘belief’ in climate science is unfounded because science is a fraud, obscure the nature of uncertainty in science and obfuscate what science (and scientific scepticism) in general is all about. While climate science may still have to work through a lot of uncertainties, science as a whole, ‘normal’ science, still produces quite substantial amounts of certain, objective, factual and rather useful knowledge.

This article reveals the threats posed to public understanding of science and to public policy by the religious framing of science by climate sceptics. If we want to avert a (climate) disaster, we, and this means scientists, teachers, journalists, and metaphor and discourse analysts, should try to increase awareness of the dangers of the types of paradoxical metaphorical framings used during ‘climategate’. Metaphors can highlight and hide, clarify thought and cloud it. They have many advantages for science and culture, but there are also disadvantages. Once metaphors lodge in the imagination, they can successfully eliminate or discredit any evidence which might be regarded as contradictory to the dominant framing. The metaphors are taken as ‘truths’. In the debate over action to prevent human induced climate change this can contribute to political inaction and social inertia, in short, political paralysis.

References

Antilla, L. 2005. ‘Climate of Scepticism: US Newspaper Coverage of the Science of Climate Change’. *Global Environmental Change* **15**: 338-52.

- Barnes, B., Bloor, D. and Henry, J. 1996. *Scientific Knowledge: A Sociological Analysis*. Chicago: University of Chicago Press.
- Boykoff, M. and Boykoff, J. 2004. 'Balance as Bias: Global Warming and the US Prestige Press'. *Global Environmental Change* **14**: 125-136.
- Boykoff, M. and Boykoff, J. 2007. 'Climate change and journalistic norms: A case-study of US mass-media coverage'. *Geoforum*, **38**: 1190-1204.
- Barthes, R. 1970. *Mythologies*. Paris: Seuil.
- Briscoe, M. 2004. 'Communicating uncertainties in the science of climate change: an overview of efforts to reduce miscommunication between the research community, policy makers and the public.' International Centre for Technology Assessment: www.icta.org/doc/Uncertainty%20in%20science-9-04.pdf. Accessed 10 December 2009.
- Chand, S. 2010. 'UK climate scepticism more common'. BBC news online: <http://news.bbc.co.uk/1/hi/8249668.stm>. Accessed 12 May, 2010.
- CNN 2009. 'Americans' belief in global warming sinks as Republicans shift', 7 December: available at: <http://www.cnn.com/2009/POLITICS/12/07/global.warming.poll/index.html>. Accessed 28 December 2009.
- Compact Oxford English Dictionary online*: www.askoxford.com/. Accessed 30 December 2009.
- Crichton, M. 2004. *State of Fear*. New York: Harper Collins.
- Davidson, A. n.d. 'Science as belief system'. Available at: spaz.ca/aaron/school/science.html. Accessed 28 December 2009.
- Delingpole, J. 2009. 'Climategate: the final nail in the coffin of "Anthropogenic Global Warming"?''. *The Daily Telegraph*, 20 November.

- Dunlap, T. R. 2004. *Faith in Nature: Environmentalism as Religious Quest*. Seattle, W.A.: University of Washington Press.
- Doran, P. T., and M. Kendall Zimmerman. 2009. 'Examining the scientific consensus on climate change'. *Eos Transactions of the American Geophysical Union*, 903, doi:10.1029/2009EO030002.
- Dyson, F. 2008. 'The question of global warming'. *The New York Review of Books*, 5510, June 12: <http://www.nybooks.com/articles/21494>. Accessed 28 December 2009
- Entman, R. M. 1993. 'Framing: Toward clarification of a fractured paradigm.' *Journal of Communication* **43** (4): 51-58.
- Fairclough, N. 1992. *Discourse and Social Change*. Cambridge: Polity Press.
- Funtowicz, S. O., & Ravetz, J. R. 1994. The worth of a songbird: Ecological economics as a post-normal science. *Ecological Economics*, **10**(3), 197-207.
- Frank, R. M., R. Dirven, T. Ziemke and E. Bernárdez, eds. 2008. *Body, Language and Mind*. Vol. 2. *Sociocultural Situatedness*. Berlin: Mouton de Gruyter.
- Gould, S. J. 1997. *Dinosaur in a Haystack: Reflections in Natural History*. New York: Three Rivers Press.
- Hart, C. 2008. 'Critical discourse analysis and metaphor: toward a theoretical framework'. *Critical Discourse Studies* **5**(2): 91-106.
- Hulme, M. 2009a. *Why we Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity*. Cambridge: Cambridge University Press.
- Hulme, M. 2009b. 'The science and politics of climate change'. *The Wall Street Journal*, 2 December: <http://online.wsj.com/article/SB10001424052748704107104574571613215771336.html>. Accessed 23 December 2009.

- Inhofe, J. 2009. 'Inhofe calls 2009 'The Year of the Skeptic''. Available at: http://epw.senate.gov/public/index.cfm?FuseAction=Minority.Speeches&ContentRecord_id=08d7b2d2-802a-23ad-41d8-332a1ef4715e. Accessed 20 December 2009.
- Jacques, P. J., Dunlap, R. E. and Freeman, M. 2008. 'The organisation of denial: Conservative think tanks and environmental scepticism'. *Environmental Politics* **17**(3): 349-385.
- Jowit, J. 2010. 'Sharp decline in public's belief in climate threat, British poll reveals'. The Guardian, online, 23 February: <http://www.guardian.co.uk/environment/2010/feb/23/british-public-belief-climate-poll>, accessed 11 May, 2010.
- Kemp, J., Milne, R. and Reay, D. S. 2010. 'Sceptics and deniers of climate change not to be confused'. *Nature* **464**: 673.
- Lakoff, G. and M. Johnson. 1980. *Metaphors We Live By*. Chicago: Chicago University Press.
- MacKenzie, D. 2010. 'Whose conspiracy?'. *New Scientist*, **15 May**, 38-39.
- Mautner, G. 2005. 'Time to get wired: Using web-based corpora in critical discourse analysis'. *Discourse & Society* **166**: 809-828.
- May, R. 2001. 'Risk and uncertainty'. *Nature* **411**, 891.
- McCright, A. 2007. 'Dealing with climate change contrarians'. In Moser SC, Dilling L (eds) *Creating a Climate for Change: Communicating Climate Change and Facilitating Social Change*, pp 200–212. Cambridge, UK: Cambridge University Press.
- McCright, A. and Dunlap, R. 2003. 'Defeating Kyoto: The Conservative Movement's Impact on U.S. Climate Change Policy'. *Social Problems* **50**(3): 348-73.

- McKie, R. (2010). 'Glaziergate was a blunder, but it's the sceptics who dissemble'. *The Guardian*, online: <http://www.guardian.co.uk/commentisfree/2010/jan/24/climate-change-glaziergate-mckie>
- Mooney, C. and Kirshenbaum, S. 2009. *Unscientific America: How Scientific Illiteracy Threatens our Future*. New York: Basic Books.
- Myers, G. 2010. *The Discourse of Blogs and Wikis*. London: Continuum.
- Nerlich, B., C. Hamilton, and V. Rowe. 2002. 'Conceptualising foot and mouth disease: The socio-cultural role of metaphors, frames and narratives'. *metaporik.de*, **2**: www.metaphorik.de/02/nerlich.htm.
- Nerlich, B. and N. Koteyko. 2009. 'Compounds, creativity and complexity in climate change communication: The case of "carbon indulgences"'. *Global Environmental Change* **19**: 345-353.
- Nerlich, B., Elliott, R. and Larson, B. 2009. 'Communicating biological sciences: An introduction'. In: Nerlich, B., Elliot, R. and Larson, B., eds., *Communicating Biological Sciences: Ethical and metaphorical dimensions*, pp. 1-22. Aldershot: Ashgate.
- Nisbet, M. 2009. "'ClimateGate": A catchphrase that instantly flips the frame on climate scientists.' *Framing Science Blog*: http://scienceblogs.com/framing-science/2009/12/climate_skeptics_flip_the_publ.php. Accessed 26 December 2009.
- Palin, S. 2009a. 'Sarah Palin Notes'. Facebook. Available at: <http://www.facebook.com/notes.php?id=24718773587&start=10>. Accessed 26 December 2009.
- Palin, S. 2009b. 'Sarah Palin on the politicization of the Copenhagen climate conference'. *Washington Post*, 9 December: <http://www.washingtonpost.com/wp->

dyn/content/article/2009/12/08/AR2009120803402.html?hpid=opinionsbox1.

Accessed 26 December 2009.

Peat, F. D. 2002. *From Certainty to Uncertainty: The Story of Science and Ideas in the Twentieth Century*. Washington, D.C.: Henry Joseph Press.

Pew Research Centre 2009. 'Fewer Americans see solid evidence of global warming'.
<http://pewresearch.org/pubs/1386/cap-and-trade-global-warming-opinion>. Accessed
27 December 2009.

Popper, K. 1959/2002. *Logic of Scientific Discovery*. London: Routledge.

Press Release by the University of East Anglia 2009:
<http://www.uea.ac.uk/mac/comm/media/press/2009/dec/homepagenews/CRUreview>.
[Accessed 23 December 2009](#).

Ravetz, J. 2010. 'Climategate: Plausibility and the blogosphere in the post-normal age'.
Guest post on *Watts Up with That*:
<http://wattsupwiththat.com/2010/02/09/climategate-plausibility-and-the-blogosphere-in-the-post-normal-age/>. Accessed 20 April, 2010.

Sagan, C. 1995. *The Demon Haunted World: Science as a Candle in the Dark*. New York: Ballantine Books.

Shermer, M. 2010. 'I am a sceptic, but I'm not a denier'. *New Scientist* **15 May**, 36-37.

Sim, S. 2006. *Empires of Belief: Why We Need More Scepticism and Doubt in the Twenty-first Century*. Edinburgh: Edinburgh University Press.

Spash, C. L. (2002). *Greenhouse Economics: Value and Ethics*. London: Routledge

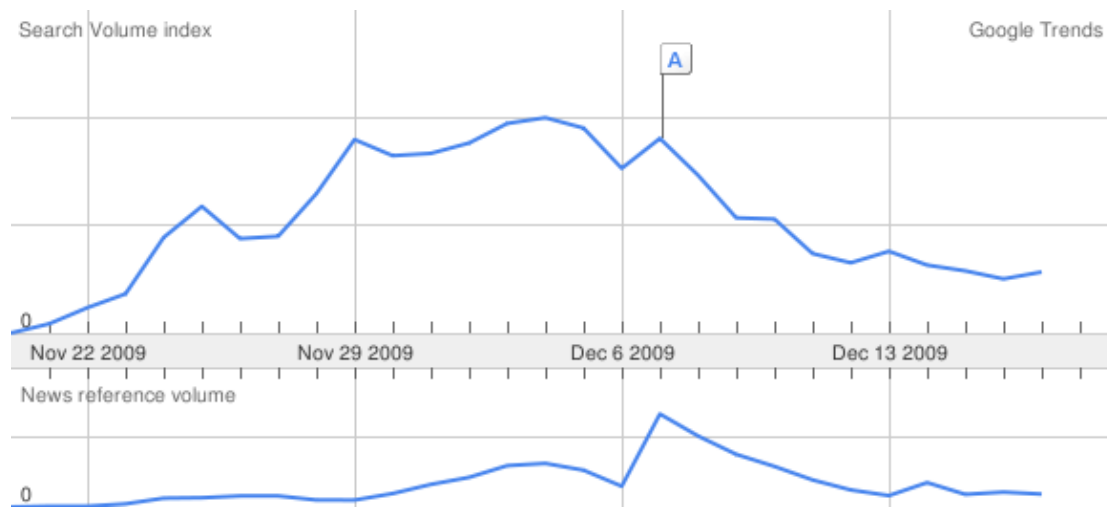
Spash, C. L. (2007). The economics of climate change impacts à la Stern: Novel and nuanced or rhetorically restricted? *Ecological Economics*, 63(4), 706-713.

Vico, G. 1725/1948. *The New Science of Giambattista Vico*. Revised edition, T.G. Bergin/M.H. Fisch Eds. and Trans., Ithaca, NY.

Webster, G. 2003. 'Corporate discourse and the academy: A polemic'. *Industry and Higher Education* **17**(2): 85–90.

Zehr, S. C. 2000. 'Public representations of scientific uncertainty about global climate change'. *Public Understanding of Science* **9**: 85–103.

Figure 1. Blog and news traffic on 'climategate'



Source: Google trends.

Notes: Letter A refers to an article in *Ottawa Citizen* entitled “Head of UN panel blasts 'Climategate' affair”, published on 7th December 2009).

Notes

¹ I shall use ‘climate sceptics’ here in the sense of ‘climate deniers’, although there are obvious differences between scepticism and denial (see Shermer, 2010; Kemp et al., 2010). However, ‘climate sceptic’ and ‘climatic scepticism’ were commonly used during the ‘climategate’ debate as meaning ‘climate denier’.

² Together with other so-called ‘gates’ that followed it, such as ‘Amazongate’ and ‘glacieregate’ – related to claims on how much of the rainforest was under threat from global warming and how fast Himalayan glaciers would melt.

³ See <http://www.uea.ac.uk/mac/comm/media/press/CRUstatements/oxburgh>

⁴ Climate mitigation policies rely on much more than science, but the debate about the emails focused mostly on science and scientists and their purported collusion with politics and politicians.

⁵ I follow the convention established in cognitive linguistics (Lakoff and Johnson, 1980) according to which one indicates so-called conceptual metaphors, such as ARGUMENTS ARE WAR, in small capitals. Conceptual metaphors are overarching ways of conceptualising relatively abstract ideas in more concrete ways, and subsume metaphorical expressions such as ‘She shot down his argument’, ‘He surrendered to her brilliant repartee’, ‘They fought hard over the last issue’, etc.

⁶ Google explains the graph in the following way: “Google Trends analyzes a portion of Google web searches to compute how many searches have been done for the terms you enter, relative to the total number of searches done on Google over time. We then show you a graph with the results – our Search Volume Index graph. Located beneath the Search Volume Index graph is our News reference volume graph. This graph shows you the number of times your

topic appeared in Google News stories. When Google Trends detects a spike in the volume of news stories for a particular search term, it labels the graph and displays the headline of an automatically selected Google News story written near the time of that spike. Currently, only English-language headlines are displayed, but we hope to support non-English headlines in the future.” (<http://www.google.com/intl/en/trends/about.html#1>)

⁷ This echoes a comment he made in 2004, reported in Antilla (2005): “Republican Senator James Inhofe of Oklahoma (2004, S11292), on the floor of the Senate, proclaimed (as he also had in 2003) that ‘Global warming is the greatest hoax ever perpetrated on the American people’.” (Antilla, 2005: 338)

⁸ <http://wattsupwiththat.com/climategate/>

⁹ Where Sarah Palin, the Republican nominee for Vice President of the United States in 2008, first expressed her thoughts on ‘climategate’ (Palin, 2009a); she published further thoughts in the Washington Post (Palin, 2009b)

¹⁰ See: <http://eureferendum.blogspot.com/2005/03/euroscepticism-in-world.html>

¹¹ See: <http://papundits.wordpress.com/>

¹² See: <http://www.dakotavoices.com/>

¹³ See: <http://rightwingnews.com/>

¹⁴ See: <http://www.smalldeadanimals.com/>

¹⁵ See: <http://www.urbandictionary.com/define.php?term=Denialosphere>

¹⁶ This might be discussed under the heading of ‘post-normal science’. Although there was no reference to this in my corpus of blogs, there are blogs on the web that do discuss ‘climategate’ through the lense of post-normal science, such as a contribution by Ravetz to the blog that was involved in starting the ‘climategate’ debate, *Watts Up with That* (see

Ravetz, 2010). For further information on studies relating to climate change, values and ethics in the context of post-normal science, see Funtowicz and Ravetz (1994); Spash (2002).