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Abstract

British newspapers have denigrated anthropogenic climate change by misrepresenting scientific consensus and/or framing climate change within unsympathetic discourses. One aspect of the latter that has not been studied is the use of metaphor to disparage climate change science and proponents. This article analyses 122 British newspaper articles published using a religious metaphor between summer 2003 and 2008. Most were critical of climate change, especially articles in conservative newspapers *The Daily Telegraph*, *Daily Mail* and *The Times*. Articles used religion as a source of metaphor to denigrate climate change in two ways: (1) undermining its scientific status by presenting it as irrational faith-based religion, and proponents as religious extremists intolerant of criticism; (2) mocking climate change using notions of sin, e.g. describing 'green' behaviours as atonement or sacrifice. We argue that the religious metaphor damages constructive debate by emphasizing morality and how climate change is discussed, and detracting attention from the content of scientific data and theories.

Keywords

climate change, discourse, global warming, media, metaphor, religion

1. Introduction

Anthropogenic greenhouse gas (GHG) emissions have been rising since pre-industrial times, and by an average of 1.6% per year for the last 30 years (Rogner et al., 2007). Without policy interventions, they are expected to continue to rise in the future, with the likely effect of increased average global temperatures (Rogner et al., 2007). While some degree of warming now seems unavoidable, there is a need to drastically reduce global GHG emissions to avoid dangerous increases in average global temperature (IPCC, 2007). Legislation to achieve this will require public support if it is to succeed. Yet recent polls suggest that many remain sceptical about anthropogenic climate change. Taking the UK, Ipsos MORI surveys found that 56% of respondents in 2007 (Downing and Ballantyne, 2007) and 60% in 2008 (Ipsos MORI, 2008) agreed with the statement that "many leading experts still question if human activity is contributing to climate change," and in 2008, 42% agreed with the statement "I sometimes think climate change might not be as bad as people say" (Ipsos MORI, 2008). A poll by *The Times* in November 2009 found that 83% of respondents agreed that climate change was happening, but only 41% agreed that "it is now established as largely manmade" (Webster and Riddell, 2009; Street Poll, n.d.). Similarly, a UK government poll in December 2009 found that while 91% of

respondents agreed that global warming was occurring,only 21% agreed that human activity was mainly responsible for this. The majority of respondentsbelieved that more research was required before making significant lifestyle changes to reduce GHG emissions, and were against increased taxation to reduce GHG emissions. Forty-four percentstated that they did not trust scientists to tell the truth (YouGov, 2009).

Thus, while the British public widely agree that climate change is happening, far fewer are convinced that it is anthropogenic, and therefore that we should act to reduce GHG emissions – a serious obstacle to political efforts toward this end. There are numerous reasons why this may be so. Climate change is a future-oriented (Ungar, 2000) and large-scale problem, and the images it brings to mind for British people lack personal relevance (Lorenzoni et al., 2006). High-carbon behaviours are highly valued, making behaviour change difficult and undesirable. For example, cardriving serves not only instrumental transport purposes, but also symbolic, affective, social and identity functions (Sheller, 2004; Steg, 2005). During the country's current economic difficulties,the British public may be concerned that acting to reduce GHG emissions will have detrimental economic effects, through increased taxation or reduced international competitiveness (Woodset al., 2009). Thus, even those who are concerned may express reluctance to change their behaviours, and may employ denial tactics to deal with this dissonance (Stoll-Kleeman et al., 2001). Public scepticism regarding anthropogenic climate change may also be exacerbated by the devaluation of scientific knowledge in knowledge societies such as Britain, and growing distrust of politicians and public institutions (Ungar, 2000).

Another possible source of public scepticism is the media. People respond very differently to the same situation depending on how it is framed (Tversky and Kahneman, 1981). The media canaffect people's perceptions of the issues reported, for example, influencing the importance peopleassign to specific issues, and the information they recall when making a judgement on an issue (Iyengar and Kinder, 1987). There is evidence that the way the media report climate change affectsreaders' perceptions (Corbett and Durfee, 2004). It is therefore useful to consider how the media represent climate change, and this article focuses upon British national newspapers. These can bebroadly classified across two dimensions that have been found to be related to climate change reporting. The first of these is the broadsheet–tabloid distinction, which is associated with social class, with those of lower socioeconomic status tending to read tabloids and vice versa for broad- sheets (Newspaper Marketing Agency, 2008). The second is a continuum from left-wing or liberalto right-wing or conservative political persuasions.

Two different aspects of climate change reporting have been found to vary between British newspapers. One is the accuracy with which scientific views on climate change have been represented; the other is the discourses employed to frame the issue of climate change. With respect tothe issue of accuracy, Boykoff (2007) found that unlike the US prestige press, UK broadsheets (which in his study comprised *The Times*, *The Independent*, *The Guardian* and their Sunday equivalents, but did not include *The Daily Telegraph*) did not misrepresent the scientific consensus in theexamined period of 2003 to 2006. Over 95% of articles examined from this time period depicted anthropogenic contributions to climate change as significant. In contrast, Boykoff and Mansfield (2008) found that between 2000 and 2006, tabloid newspapers the *Daily Mirror*, *Daily Express*, *The Sun*, *Daily Mail* and their Sunday counterparts attributed climate change to anthropogenic causes significantly less often than did the scientific consensus. There was noticeable variation between the tabloids also; over 80% of articles published by *The Sun*, *Daily Mirror* and *Daily Express* (and their Sunday counterparts) depicted anthropogenic contributions to climate change as important, while only 67% of articles in *Daily Mail* and *Mail on Sunday* (generally considered more conservative than other tabloids) did so (Boykoff and Mansfield, 2008).

The discourses employed to frame climate change also vary by newspaper, where "discourse" might loosely be described as “a shared meaning of a phenomenon” (Adger et al., 2001, p. 683). In their analyses of British broadsheets *The Times*, *The Independent* and *The Guardian* from 1985 to 2003, Carvalho and Burgess (2005) and Carvalho (2007) found that *The Guardian* and *The Independent* (widely regarded as relatively liberal) stressed consensus among scientists and the risks of climate change, while *The Times* emphasised scientific uncertainty, gave space to climate sceptics and privileged policies that served industry. Similarly, for most of the period 1997 to 2007, when discussing climate change in the context of international development, *The Times* and *The Daily Telegraph* (both regarded as politically conservative) tended to downplay the need for the UK to take action on climate change, while *The Independent* and *The Guardian* took the opposite approach (Doulton and Brown, 2009). Meanwhile, Boykoff (2008) found that between 2000 and 2006, British tabloids most commonly framed climate change stories through weather events, charismatic megafauna, and political actors and rhetoric, and often adopted an ironic, whimsical and/ or contrarian tone. Boykoff (2008) argued that these framings drew the attention of its predominantly working-class readership away from key issues of justice and risk, which are likely to be mediated by wealth and social class.

Overall, the evidence suggests that broadsheets report scientific consensus on climate change more accurately, and may address implications for readers more adequately than tabloids. However, across both broadsheets and tabloids, more liberal newspapers (e.g. *The Guardian, The Independent*) report climate change using more sympathetic discourses and (in the case of tabloids) with greater accuracy than conservative newspapers (e.g. *The Times, The Daily Telegraph, Daily Mail*). These differences likely influence the views of their readers on climate change.

One important aspect of environmental discourses that has so far been relatively neglected in research on media coverage of climate change is the use of metaphors as rhetorical devices (Dryzek, 1997). Metaphor is defined by Lakoff (1995) as conceptualizing one domain (the target) in terms of another (the source). The target domain is usually less familiar and understood than the source domain (Gentner and Jeziorski, 1995). Using a metaphor inevitably entails a restricted, partial understanding of the target domain (Kruglanski et al., 2007) because by mapping between the target and source domains, particular features are accentuated while others are downplayed, and particular lines of reasoning are suggested (Lakoff, 1991). The use of metaphors may be unavoidable, but different metaphors will accentuate and diminish different features. If metaphors are employed by policy-makers without awareness of their partiality, a metaphor can lead to blind spots and unintended consequences (Kruglanski et al., 2007).

We suggest that metaphors employed in the media may indirectly inform policy, by influencing public perceptions of climate change, and providing politicians with new arguments for or against acting on climate change. Climate change may be particularly prone to novel metaphors because unlike some other environmental problems such as the ozone hole, it has lacked a desirable, clear, culturally available metaphor to bridge scientific and lay understanding (Ungar, 2000). It has also received a high and increasing level of media coverage in recent years (Boykoff, 2007, 2008), which may create pressure for journalists to find novel ways of presenting the issue.

One source domain for metaphors of climate change that has appeared increasingly in British newspaper articles is religion. This vast topic provides numerous opportunities for journalists to create a novel angle by mapping its various aspects, such as religious figures, concepts of sin and Apocalypse, onto aspects of climate change, such as environmentalists, scientists’ claims, low carbon behaviours, and so on. According to Geertz, a religion is “(1) a

system of symbols which acts to (2) establish powerful, pervasive, and long-lasting moods and motivations in men [*sic*] by (3) formulating conceptions of a general order of existence and (4) clothing those conceptions with such an aura of factuality that (5) the moods and motivations seem uniquely realistic" (1966: 4). According to this definition, religion is a pervasive and influential force, and thus the use of religious metaphors in communication concerning climate change is likely to have a substantial effecton the audience. Within the context of the UK, where, according to the 2001 Census data (Office for National Statistics, 2001), 72% of the population belong to a Christian religion, the mainstream religious discourse would be likely to refer to a Judeo-Christian perspective.

So far use of the religious metaphor has not been systematically studied, but its significance has been hinted at in recent research. Foust and O'Shannon Murphy (2009) argue that US newspapers commonly frame climate change in apocalyptic terms, but they include in their data set newspaper articles employing the term "catastrophe" rather than "apocalypse" and as such do not focus on the religious connotations of the latter term. They argue that many such articles present disastrous results of climate change as inevitable outcomes and can thereby have the negative effect on readers of decreasing a sense of efficacy. Indeed, there is evidence in the domain of health education that high-threat, high-efficacy messages are much more persuasive than high-threat, low-efficacy messages, which often yield defensive responses (Witte and Allen, 2000).

Doulton and Brown (2009: 195) note that British newspaper articles on climate change and international development often employ "metaphors of war and destruction and floods – often almost Biblical in their dramatisation" to support particular discursive framings of climate change, with varying implications for action. Thus, there is reason to expect that the use of the religious metaphor may provide a powerful resource for justifying and reinforcing particular stances and lines of action with respect to climate change. Readers often use the metaphor when commenting on online articles, suggesting that it has a widespread resonance making it an important influenceon people's thinking about the topic (see for example comments in the BBC "Viewpoint" article bySmith (2010)).

The current study explores the metaphorical use of religion as a source domain by journalists writing about climate change in British newspapers between the summers of 2003 and 2008. The overall aim was to gauge whether journalists used the religious metaphor to denigrate the case for anthropogenic climate change and, if so, how the metaphor was used to achieve this, and by which newspapers.

2. Method

Selection of articles

Articles were retrieved via the Lexis Nexis database. The sampled newspapers were the *Daily Telegraph*, *Sunday Telegraph*, *Daily Mail*, *Mail on Sunday*, *The Guardian*, *The Independent*, *The Mirror* and *The Sunday Mirror*, *News of the World*, *Observer*, *The Sun*, *Sunday Express*, *The Times* and *The Sunday Times*. The sampling period was a 5-year period from 8 July 2003 to 7 July 2008 (the most recent five years at the time of data collection). The Boolean search code instructed the program to retrieve all articles indexed as climate change or global warming related containing any word with the root "religio-." Newswires were excluded from the search. The search used was as follows: (((religio!)) and (INDEX-CODE((CLIMATE CHANGE or GLOBAL WARMING)))) andDATE(>=2003-07-08) and not PUBLICATION-TYPE(Newswire or dépêche or Presseagentur orAgencia or Agenzia or Persbureau).

In addition to relevant articles, this search found many articles that did not use a religious metaphor to refer to climate change. Coding was carried out by the three authors, who are from Anglican, Catholic and Jewish religious backgrounds (although these backgrounds do not necessarily reflect their current beliefs). Each coder worked through a third of all articles identified by the search, and found 122 relevant articles in total. All articles that referred to climate change using a religious metaphor or simile were considered relevant. This included articles from any section of the newspaper (including letters to the editor but not TV listings); articles that reported someone else usingthe religious metaphor without the journalist using it themselves; articles that included only "deadmetaphors" (metaphors that were judged to be so popular and widespread that they were no longerwidely understood through reference to the source domain); articles using religion in general as well as those using one or more specific religion for the source; and articles in which climate change was described as one example or type of a wider phenomenon, and that phenomenon was the target of a religious metaphor. The following articles were excluded: articles that mentioned both religion and climate change, but not in conjunction with each other; articles in which religiousfigures spoke about climate change; and articles in which the target for the religious metaphor wassome aspect of environmentalism (e.g. recycling), but not climate change specifically.

To ensure that all coders were making comparable judgements of relevance, inter-rater reliability was assessed using the Kappa statistic on a sample of 169 articles (approximately 20% of the original set of articles produced by the search engine). The level of agreement was found to be excellent; Kappa = .906, $p < .001$.

Analysis of metaphor

Articles were analysed for their use of the religious metaphor using an iterative process akin to thematic analysis (Braun and Clarke, 2006). The relevant articles were distributed across the three coders. For each article, coders identified all cases where religion was used as a metaphor for climate change. These constituted the data set. Having reviewed their own data, each coder suggestedcodes to subdivide the target domain into distinct areas. Coders discussed their suggestions togetherand agreed an initial set of codes, which they used to code as much of their data as possible. Through this process, modifications, additions and reductions were proposed, discussed and agreeduntil a final set of codes were agreed that seemed to capture as much of the target domain as possible.The researchers then re-coded the data on the basis of the agreed coding scheme, noting alongside thetarget categories what source was paired with them. A target–source pair (e.g. environmentalists–priests) was recorded only once per article, even if it appeared more than once.

Once coding was complete, codes that represented less than 1% of all source–target pairings identified in the sample overall were removed from the coding scheme, or merged with other codesif appropriate. The final scheme consisted of 15 codes, each representing a distinct area of the target domain that occurred in 1% or more uses of the metaphor, plus two other codes: one to embrace those uses of the religious metaphor that coders agreed were dead metaphors; and one asa catch-all for unusual target areas that represented less than 1% of the data set. Table 1 summarizesthis final coding scheme.

The coders agreed that some words had more than one meaning, only one of which was usually considered religious. Therefore such words were considered as examples of the religious metaphor only when it was clear from the context of the article that they were being used in a religious sense. These words were "evil," "belief," "message of doom," "believer," "dogma" and "myth."

Some metaphors and similes were explicit (e.g. "Climate change is the new religion"), while others were implicit, in that only the source was stated, and the target was inferred. For example,

consider the statement: "Global warming involves countless acts of sacrifice and abstention and propitiation." The sources (sacrifice, abstention, propitiation) are explicit, but the target (pro-environmental behaviour) is implicit. Such target-source pairings were recorded in the usual manner.

An inter-rater reliability analysis using the Kappa statistic was performed on a subsection of the data to determine consistency among raters. One hundred and twenty target-source pairs were included in the analysis (26% of total). In cases where only one coder recorded a pair, the other coder was recorded as "missing," which was given its own code. Hence such cases were recorded as mismatches in the usual manner. The level of inter-rater agreement was found to be high: Kappa = .747, $p < .001$.

Table 1. Summary of target coding system

Target category	More information
Climate change	Climate change/global warming
Environmentalism	Movement concerned about climate change
Climate change claims	Claims made and tenets held by climate change supporters
Environmentalists	Environmentalists and active supporters of the existence and importance of climate change
Scientists	Climate change scientists
Consequences of climate change	Future events resulting from climate change
Pro-climate change behaviour	Pro-environmental behaviours that reduce greenhouse gas emissions
Critics	People who are critical/sceptical of (anthropogenic) climate change claims (including those who criticize only some aspects or are undecided)
Criticisms of climate change	Criticisms/scepticism of climate change claims
Anti agents, items, behaviour	People, groups of people, behaviours or objects that contribute to or increase greenhouse gas emissions
Attitudes to climate change	Attitudes of environmentalists towards environmentalism/climate change
Attitudes to behaviour	Attitudes of environmentalists towards pro- and anti-environmental behaviour (including injunctions to behave in particular ways)
Attitudes to critics	Attitudes of environmentalists towards critics/scepticism of climate change
Earth	Earth, environment, nature
Politics	Political statements, legislation, policy, organizations or decisionsregarding climate change
Dead metaphor	"Dead metaphors", e.g. doing something religiously, preaching to the converted/choir,"hell of a climate"
Other	Any other religious targets not covered above and that make up less than 1% of all source–target pairs in sample

Analysis of article attitudes

Coders recorded the overall attitude of each article towards climate change. Articles were coded as *anti* if they were sceptical about the existence of climate change, its anthropogenic causes, and/or the need to reduce GHG emissions; as *pro* if they were positive about these elements; as *pro and anti* if they contained both positive and negative attitudes towards these elements; as *neutral* if the article described or discussed climate change without expressing an obvious attitude towards it, and as *unclear* if the coder was unsure of what attitude was expressed. An inter-rater reliability analysis using the Kappa statistic was performed on a subsection of the data to determine consistency among raters. Twenty-two articles (18% of total) were included in the analysis. The level ofinter-rater agreement was found to be moderate: Kappa = .485, p =.001.

3. Results

Prevalence and attitudes of articles across time and newspapers

Articles were divided into five time periods, each a year long, spanning 8 July 2003 to 7 July 2008. Table 2 reveals that the *Daily Mail* (25), *The Daily Telegraph* (22), *The Times* (21) and *The Guardian* (19) published the most articles employing the metaphor. Few articles using a religious metaphor appeared in the first two time periods (spanning summer 2003 to summer 2005). Thereafter, many more such articles were published, particularly between summer 2006 and summer 2007. Most of the articles (57%) were critical of climate change, but a substantial minority (18%) were sympathetic (see Table 3). These more supportive articles featured towards the end of the time period, but overall there is no evidence that articles using the religious metaphor became less negative towards climate change over time; 72% of articles in the last time period investigated (summer 2007 to summer 2008) were critical. Taking only those newspapers with more than five relevant articles for clarity, Figure 1 reveals how attitude varied by newspaper. The *Daily Mail*, *The Daily Telegraph* and *The Times* published the highest proportion of critical articles (84%, 68% and 62% respectively), while *The Guardian* and *The Independent* published relatively few critical arti cles (21% and 31% respectively).

Table 2. Number of newspaper articles applying religious metaphor to climate change over time

Newspaper	Time period					Total
	2003–04	2004–05	2005–06	2006–07	2007–08	
Daily Mail	0	2	0	9	14	25
The Guardian	0	1	5	7	6	19
The Independent	0	0	6	4	3	13
Mail on Sunday	1	0	0	2	1	4
Daily Mirror	0	0	0	1	0	1
The Observer	0	0	1	4	1	6
The Sun	0	0	0	3	0	3
Sunday Express	0	0	1	5	2	8
Daily Telegraph	1	2	4	8	7	22
The Times	3	4	3	9	2	21
Total	5	9	20	52	36	122

Table 3. Overall attitudes of articles applying religious metaphor to climate change over time

Overall attitude of article towards climate change	Number (and percentage) of articles published in each time period					
	2003–04	2004–05	2005–06	2006–07	2007–08	Total
Anti	5 (100.0)	5 (55.6)	9 (45.0)	25 (48.1)	26 (72.2)	70 (57.3)
Pro	0	0	4 (20.0)	13 (25.0)	5 (13.9)	22 (18.0)
Neutral	0	2 (22.2)	3 (15.0)	11 (21.2)	3 (8.3)	19 (15.6)
Pro and anti	0	1 (11.1)	1 (5.0)	3 (5.8)	2 (5.6)	7 (5.7)
Unclear	0	1 (11.1)	3 (15.0)	0	0	4 (3.3)
Total	5	9	20	52	36	122

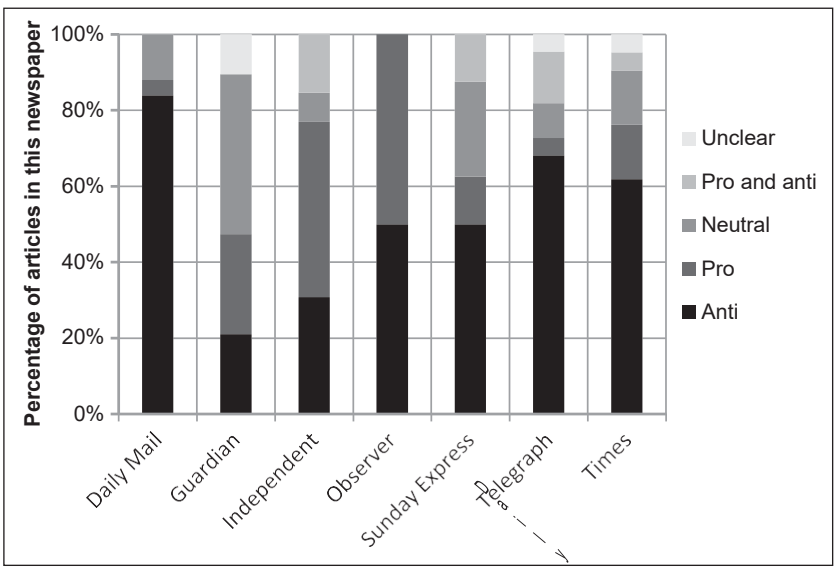

Figure 1. Overall attitudes of articles applying religious metaphor to climate change in various newspapers

Prevalence of targets, and common themes across sources

In total, 453 target–source pairs were identified across the 122 articles. Table 4 indicates the frequency with which each target category featured, and the most common sources from the religiondomain that each target was paired with. This section discusses Table 4, illustrating various target–source pairs with examples from specific articles, in order to show how religious metaphors were employed to denigrate climate change.

Table 4 reveals that the modal source for both environmentalism and climate change was religion itself, and for the claims of climate scientists and environmentalists, the modal source was "faith." In the articles, these metaphors were commonly used to undermine the scientific status of the field by drawing on an opposition, widespread in UK society since the Enlightenment,between science, viewed as rational and evidence-based, and religion, seen as irrational and

Table 4. Frequency and modal sources of each metaphor target

Target	Frequency	% of targets	Modal sources and (frequency)	Other sources mentioned more than once and (frequency)
Climate change	52	11.5	Religion (26)	God/Hand/Act of God (4), Creed (3), Cult (2), Myth (2)
Environmentalism	53	11.7	Religion, religious (28)	Fundamentalism (7), Crusade (2), Religious story/ideology (2), Fanaticalcult (2), Orthodoxy (2), Faith (2), Puritanical/Puritanism (2)
Climate change claims	48	10.6	(Article of) faith (6)	Orthodoxy (4), (Religious/pious) belief (4), Apocalyptic (3), Mantras (3), Bible (2), Creed (2), Dogma (2), Prophecy/prophecies (2), Sermon(s) (2), Fundamentalism (2)
Environmentalists	71	15.7	(High) Priests/ Priesthood (9)	Believer(s) (7), Fundamentalists (7), Zealots (7), Prophet(s) (6), Guru(s) (3), Evangelical/evangelistic/evangelists (3), Fanatics (2), Jeremiah(s) (2), Sect (2), Green Goddess (2), Bishops/ Deacons (2)
Scientists	5	1.1	–	–
Consequences of climate change	31	6.8	Apocalypse/ apocalyptic/ Armageddon/ Day of Reckoning/ Doomsday (15)	Divine punishment/retribution (5), Hell/hellfire (3)
Pro-climate change behaviour	42	9.3	Sacrifice(s) (7)	(Buying/selling) indulgences (6), Atone/atoning/propitiation (5), Rituals (4), Hair shirt/sack cloth (4), Religion (2)
Critics of climate change	28	6.2	Heretics (14)	Unbelievers/non believers (4), Agnostic(s) (2)
Criticisms of climate change	14	3.1	Blasphemous/ blasphemy (5)	Heresy/heretical (4)
Anti agents, items, behaviour	12	2.6	Sin (4), sinner(s) (4)	Evil (2), Devil/Devil's work (2)
Attitudes to climate change	10	2.2	Religion/religious (2)	–
Attitudes to behaviour	19	4.2	Preaching (3)	Religious zeal (2), Spread the news/ word (2)
Attitudes to critics	15	3.3	Demonisation (6)	–
Earth	9	2.0	(Goddess) Gaia (5)	Deity/God/Goddess (4)
Politics	17	3.8	Hair shirt (2), Religion(2), Theology (2)	–
Dead metaphor	8	1.8	(Doing something pro climate change) religiously (5)	Preaching to the choir/converted (2)
Other	19	4.2	Conversion/converts (3)	–

faith-based (Inwood, 1995; Smith, 1997). For example, writing in the *Daily Mail*, Nigel Lawson (2008), former Conservative Chancellor of the Exchequer, opened with the statement, "Global warming is the new religion," described climatologists' claims as "the global warming orthodoxy," and asserted that "the issues surrounding global warming are so often discussed in termsof belief rather than reason." Revealingly, he alluded to the Enlightenment in his conclusion that "We appear to have entered a new age of unreason." Similarly, also in the *Daily Mail*, MacLeod (2008) wrote: "The truth is that 'global warming' and the CO2 hypothesis are not science. They are ... really, a religion." Another example of the use of the metaphor to challenge the scientific claims of environmentalists is provided by Anderson (2007) in *The Independent*, who commented that environmentalists "are not pursuing disinterested science, in the spirit of the Stern report. Their environmentalism is a religion. Like all fanatical cults, it is hostile to science and to reason."

One extension of the notion that religion is irrational is to view it as excessively extreme and/or obsessive. As Table 4 indicates, some articles cast climate change in this light by describing environmentalists as "fundamentalists," "zealots" and "fanatics," terms that may draw on western fearsabout Islamic fundamentalism. Indeed, articles reporting a speech given by Nigel Lawson in 2006 included the analogy he made between environmentalists and Islamic fundamentalists (Brogan, 2006, in the *Daily Mail*; Conway, 2006, in *The Daily Telegraph*). Another aspect of this "extremism" theme is the frequency with which consequences of climate change were termed apocalyptic.This may contribute to portrayals of environmentalists as extremists, who foresee "the end of the world." An example is Lea (2006a), who wrote in *The Daily Telegraph*: "Passions run high as believers, who claim the moral high ground of an apocalyptic 'consensus view' of man-made global warming, often seek to demonise, belittle and silence those who question the main doctrines ofeco-fundamentalism." An apocalyptic view of the future is presented as part of the passionate, obsessive outlook of environmentalists.

Another extension of the notion of religion as irrational, which also features in the quote from Lea (2006a) above, is intolerance of dissent, an accusation aimed by many journalists at environmentalists and scientists. As Table 4 indicates, critics of climate change claims were most frequently described as "heretics," and their criticisms as "blasphemy" or "heresy." Here are some examples:

> [I]f you really want to know what it's like to be a 16th-century heretic, try saying you're a bit sceptical about man-made global warming (Mount, 2008; *The Daily Telegraph*)

> Scientists have become the equivalent of high priests in white coats, summoned to condemn heretics; a group of them now demand that the Channel 4 documentary The Great Global Warming Swindle be amended to reflect the one true faith before the DVD goes on sale (Hume, 2007; *The Times*)

> There is a significant minority of genuine experts in the field who believe that the Armageddon scenario is grossly oversold, especially by climatologists in pursuit of government funding and research grants. Such dissidents are treated as if they were heretics within an established religion – which in many ways the anti-global warming campaign resembles. (Dominic Lawson, 2006; *The Independent*)

These extracts, representative of numerous others, present critics as oppressed by climate change "believers," whose irrationality is apparent in their labelling of dissent as "blasphemy" or "heresy." Again, this undermines the scientific status of climatologists' and environmentalists' scientific credentials, by suggesting that they are not genuinely open to debate or conflicting evidence.

Another popular area of the source religion domain was sin and connected notions of compensation for sin. In Table 4, the commonest source used to describe agents, items and behaviours that contributed to climate change was "sin" or "sinner." One way that this term was used was to present environmentalists and/or scientists as smugly judgemental of the "sins" of their GHG- emitting peers. For example, Mount (2008) writes in *The Daily Telegraph*, "You must believe in the full package. If you do, you are blessed, free from sin and allowed the pious smugness you findin the worst sort of religious believers. It's not enough to believe in these things yourself; you mustcondemn others for not sharing your belief."

Notions of sin were also undercurrents elsewhere in the articles. Many of the terms denoting action on climate change (e.g. "atonement," "propitiation," "indulgences," "hair shirt") imply efforts to compensate for sin. Connotations of sin were also apparent in the use of the terms "punishment" and "retribution" to describe the consequences of climate change. Most articles using these terms did so mockingly, as the following extracts demonstrate:

> [I]ndustrial, western, fossil-fuel burning man has sinned and is destroying the earth by causing "global warming", which will reduce the Earth to an uninhabitable cinder, albeit one with floods. He can, however, atone by renouncing fossil fuels and donning the holy garment of renewables. (Lea, 2006b; *The Daily Telegraph*)

> [W]e now have to endure a flood of intellectual silt about how overflowing rivers are retribution for rising man made carbon levels. The notion that a flood is God's punishment for our sins went out with, well, the Ark. But it has been revived by born-again believers in high places. (Hume, 2007; *The Times*)

> The medieval market in indulgences ended with the Reformation. You can imagine the outcome of this market in modern sin. Oceans of sackcloth-and-ashes piety from those who underspend their carbon credit, and badly informed abuse for people who like flying abroad on holiday. (Mount, 2008; *The Daily Telegraph*)

By mockingly applying metaphors of sin, retribution and atonement, journalists are able to make light of GHG-emitting behaviours, their consequences and efforts at amelioration respectively. Carbon offsetting came in for particularly savage attack via the metaphor of indulgences. For example, in *The Guardian*, Mark Lynas (2007) argued that "offsetting has come under fire as being little more than a conscience-salve, somewhat akin to the purchasing of papal indulgences in the middle ages," while Porter (2007) is more accusing in *The Observer*:

> The selling of indulgences died out in the Reformation, but the instinct to buy relief from penalty and guilt did not. In fact, it has experienced a resurgence in the practice of carbon-offsetting, the system whereby individuals or companies compensate for their carbon emissions by donating money to reforestation, renewables and energy-saving schemes. Sins of emission are therefore expunged or, as we like to say, made carbon-neutral.

Finally, articles also undermined climate change by using the religious metaphor of sacrifice to convey the impression that acting on climate change is difficult and costly, or is done for the wrong reasons, as illustrated in the following examples:

> You were left feeling that climate change was now less an issue and more a doom-laden religion demanding sacrifice to Gaia for our wicked fossil fuel-driven ways. (Johns, 2007; *The Times*; commenting on controversial British terrestrial TV Channel 4 programme, "The Great Global Warming Swindle")

> What is becoming so fascinating about the new puritanism is not just that we are all being brain-washed to accept the inevitability of hair shirts, but also their unquestioned moral worth. That somehow or other, this life of sackcloth and bicycles is going to benefit our souls and make us all better people. (Reid, 2008; *The Times*)

Such statements undermine the value of taking action to reduce GHG emissions by presenting such action as excessively self-flagellating or as not evidence-based. They can also mock environmentalists by presenting them as smugly judgemental of GHG-emitting "sinners."

In summary, journalists have used the religious metaphor to present climate change as more religion than science, and its proponents as intolerant extremists who view critics as heretics, and are obsessed with atonement and sin. Despite this overall negative picture, it is important to remember that the religious metaphor is not in itself inevitably negative. However, in the UK context, it lends itself to critique because (scepticism of science notwithstanding) it is common to oppose science and religion, and to view science, and not religion, as a legitimate basis for economic, social and political change and decision making.

Nevertheless, a few articles did use the religious metaphor as a way of promoting the claims of climate science and/or environmentalists. One means of achieving this is to describe climate change critics in the same religious terms as they describe environmentalists and climatologists. For example, in *The Independent*, Hari (2007) challenged the argument that "global warming is a religion" by stating:

> Precisely the opposite is the truth. Global warming is based on very close empirical observation of the real world, and deductions based on reason ... It is you, the deniers clinging to myths, who resemble the faithful. Far from being Galileos, you have been siding with the fossil fuel Vatican.

Thus, Hari (2007) used the same metaphor-based arguments as sceptics had, but reversed the assignment of the target domain. Another technique for using the metaphor positively is to map between target and source domains in the same way as more negative articles do, but to describe aspects of the source domain sympathetically. Here is an example from author Philip Pullman, interviewed by Simms (2008) in *The Daily Telegraph*:

> So, the questions, the stories that the global warming prophets tell us (let's call them that, to distinguish them from the sceptics), take their place right slap-bang in the middle of the prophetical tradition, along with the prophets of the Old Testament.
>
> But the prophets of the Old Testament were not very successful because they were generally hounded out of the city and cast adrift on the waves. People don't like hearing what prophets tell them: it's generally uncomfortable. It's full of doom; it's full of warnings; it's full of denunciations and threats to mend their ways or suffer for it. So it's not a popular message. And the struggle that the climate-change prophets have had to undertake to get their message heard, I suppose, is similar.

Here, environmentalists are described by Pullman as "prophets," a rather typical description usually used in a derogatory sense. But here Pullman draws out sympathy for environmentalists by noting that those who predict catastrophe and demand tough changes face rejection from those around them.

In *The Times*, Baker (2006) also maps between targets and sources similarly to more sceptical articles, but constructs a rather specific argument for action based on the notion of agnosticism. The article begins by describing Pascal's wager: as an agnostic, Pascal concluded that it was better

to err on the side of belief than atheism, because the consequences for getting the former wrong were much less severe than the latter. Baker argues that as someone uncertain about the reality of climate change, he finds himself in an analogous position:

> If we don't believe in global warming and do nothing about it, and we're right, so what? Our distant posterity will be able to cite us approvingly in future opinion columns. But if our unbelief turns out to be unsupported by the outcome and we've done nothing about global warming in the meantime, then we're in a position analogous to the atheist at the gates of heaven. We will spend not eternity, but perhaps the rest of the earth's existence, ruing our folly.

Thus, Baker uses Pascal's wager as a powerful metaphor supporting his argument for a precautionary principle with respect to action on climate change. This article, along with a few others such as Hari (2007) and Simms (2008), demonstrates that it is possible to use religion as a source domain to construct favourable arguments about climate change, but the other articles quoted, along with the datasummarized in Tables 3 and 4, remind us that this approach was the exception rather than the rule.

4. Discussion

Previous research has found that some British newspapers may have encouraged scepticism towards anthropogenic climate change in two main ways. First, tabloids, particularly the *Daily Mail*, have misrepresented scientific consensus on the anthropogenic causes of climate change (Boykoff and Mansfield, 2008). Second, conservative newspapers, particularly *The Times* and *The Daily Telegraph*, have framed climate change in discourses that emphasise scientific uncertainty, give space to sceptics, privilege the perspective of industry, and/or downplay the need for the UK to reduce GHG emissions (Carvalho and Burgess, 2005; Carvalho, 2007; Doulton and Brown, 2009).

The current study has shown that, in addition to these techniques, some British newspapers have also used religion as a source metaphor to denigrate anthropogenic climate change. In a five-year period, over 100 articles employing the metaphor were identified, of which the majority were negative (although it is noteworthy that the level of inter-rater agreement for the attitude of the article was moderate, perhaps indicating the need for a more refined coding system for overall attitude). The three newspapers publishing the most articles using the metaphor were also the three that published the highest proportion of negative articles: the *Daily Mail*, *The Daily Telegraph* and *The Times*. Unsurprisingly, these conservative newspapers are precisely those that previous researchers have found to misrepresent scientific consensus and/or to report climate change using unsympathetic discourses (Carvalho and Burgess, 2005; Carvalho, 2007; Boykoff and Mansfield, 2008; Doulton and Brown, 2009). Also in line with previous research (Carvalho and Burgess, 2005; Carvalho, 2007; Doulton and Brown, 2009), this study found that liberal newspapers *The Guardian* and *The Independent* published far fewer negative articles employing the metaphor.

The religious metaphor was employed to denigrate climate change through several interconnected means. First, and most commonly, the scientific status of climate change and environmentalism was undermined by representing it as a religion or faith, which is widely considered as the irrational opposite of science (Inwood, 1995; Smith, 1997). Second, environmentalists were frequently presented as extremists through their description as fundamentalists, zealots and fanatics. The likely effect of this rhetorical move is to increase the plausibility of lesser claims and demands, which inevitably appear as more moderate and reasonable next to the assertions of "eco-fundamentalists."

Third, environmentalists and climatologists were also often presented as intolerant, treating criticism as blasphemy and heresy. This rhetorical device again undermines the scientific status of climate change proponents by implying that they are not genuinely open to debate or to conflicting evidence, a crucial aspect of good science, and by making a case for critics' voices to be heard.

The above themes all coalesce around representations of climate change as irrational religion rather than rational science. Another theme used in some articles concerned sin, atonement, punishment and sacrifice. Behaviours, agents and items that emit GHG were represented as sinful, andthe consequences of those behaviours as retribution, while GHG-reducing behaviours were described as atonement or sacrifice. Generally these metaphors were used to mock environmentalists by representing them as pious, moralistic and judgemental, and to mock GHG-reducing behaviours by presenting them as unpleasant (sacrifice) and/or ineffective (indulgences). Arguably, insofar as this image of environmentalists has appeal to the wider public, it reveals a problematic chasm between these two groups. In other words, the metaphor may resonate with some precisely because it expresses a problem in how environmentalists present their message to non-environmentalists, such that the latter experience the former as pious and hence alienating.

Using a metaphor such as religion inevitably leads to a partial understanding of the target domain, by accentuating some features and downplaying others, and suggesting particular lines of reasoning (Kruglanski et al., 2007; Lakoff, 1991). The newspaper articles analysed here tended to emphasise the approach to science and discussion taken by climatologists and environmentalists, which they presented as irrational and dogmatic. The other aspect emphasised was the morality of climate change proponents, which was presented as self-punishing, doom-laden, pious and unrelated to the evidence. The doom-laden, apocalyptic aspect may contribute to readers' feelings of powerlessness (Foust and O'Shannon Murphy, 2009), and hence decrease the likelihood of behaviour change (Witte and Allen, 2000).

What the metaphor downplays and draws readers' attention away from is the content of scientific data and theories. Thus, the religious metaphor provides a means of undermining anthropogenic climate change without actually having to engage with the validity and reliability of evidence,or the reasonableness of interpretations and conclusions, and is thus a rather insidious form of anti-climate change rhetoric, which cannot necessarily be countered by scientific argument centred around the quality of data and inference.

However, a few articles did use the metaphor in a way that was supportive of climate change arguments, and the ways in which they do this may be instructive as to how metaphor-based critiques of climate change might best be countered. Such articles either used the same sources but mapped them onto different targets (e.g. rendering critics, rather than environmentalists, as "the faithful"; Hari, 2007); or they used the same sources as used in more negative articles, but portrayed those sources positively. For example, in Simms (2008), Pullman presented environmentalists as prophets but described prophets in a positive light.

Both of these strategies might be employed to challenge anti-climate change arguments based on religious metaphors. Other strategies suggest themselves also: flag up the ways in which the religious metaphor does not fit climate change so that usage of the metaphor will be less compelling (Lakoff, 1991); find other metaphors that might represent climate change more accurately and sympathetically (Lakoff, 1991); find examples from the history of science that provoked similar levels of controversy and strong feeling so as to strengthen climate change's resemblance to a science rather than a religion.

Such strategies are important because metaphors can provide powerful frames through which we understand, describe and discuss climate change. If used to inform policy (which is possible given the prominent political profile of some metaphor users, such as Nigel Lawson), the religious metaphor may lead to errors of judgement through blind spots (Kruglanski et al., 2007). While it may not be possible to avoid metaphor altogether, it is vital that decision-makers are aware of the limitations of a particular metaphor, particularly what that metaphor tends to hide or downplay (Lakoff, 1991).

Ultimately, however, research is required that goes beyond the media, and examines how the religious metaphor is interpreted by readers, and whether and how it circulates and mutates in the general population, as well as in political circles. Such research could tell us how convincing and, therefore, powerful, the metaphor is to different sectors of the population (e.g. is it more compelling to Conservative voters?), and which of the strategies suggested above are the most effective means of countering it in practice. Such research provides exciting opportunities for a more sophisticated understanding not only of the uptake and use of the religious metaphor for climate change,but also of metaphor use and media uptake more generally.

References

Adger WN, Benjaminsen, TA, Brown K and Svarstad H (2001) Advancing a political ecology of global environmental discourses. *Development and Change* 32: 681–715.

Anderson B (2007) The environmental debate has to be rescued from the flagellants who would cut growth. *The Independent*, 17 December, p. 28.

Baker G (2006) When it comes to climate change, I'll take a small bet that Pascal was right. *The Times,* 15 September, p. 21.

Boykoff MT (2007) Flogging a dead norm? Newspaper coverage of anthropogenic climate change in the United States and United Kingdom from 2003 to 2006. *Area* 39: 470–81.

Boykoff MT (2008) The cultural politics of climate change discourse in UK tabloids. *Political Geography* 27: 549–69.

Boykoff MT and Mansfield M (2008) "Ye olde hot aire": Reporting on human contributions to climate change in the UK tabloid press. *Environmental Research Letters* 3(2): 1–8.

Braun V and Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research Methods in Psychology* 3: 77–101.

Brogan B (2006) Lawson's attack on gloomy Greens. *Daily Mail*, 2 November.

Carvalho A (2007) Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. *Public Understanding of Science* 16: 223–43.

Carvalho A and Burgess J (2005) Cultural circuits of climate change in UK broadsheet newspapers, 1985–2003. *Risk Analysis* 25: 1457–69.

Conway E (2006) Lawson dismisses Stern report. *The Daily Telegraph,* 2 November, p. 3.

Corbett JB and Durfee JL (2004) Testing public (un)certainty of science: Media representations of global warming. *Science Communication* 6: 129–51.

Doulton H and Brown K (2009) Ten years to prevent climate catastrophe? Discourses of climate change and international development in the UK press. *Global Environmental Change* 19: 191–202.

Downing P and Ballantyne J (2007) Tipping point or turning point? Social marketing and climate change. Ipsos MORI survey. Available at: www.ipsos-mori.com/DownloadPublication/1174_sri_tipping_point_or_turning_point_climate_change.pdf

Dryzek JS (1997) *The Politics of the Earth: Environmental Discourses*. Oxford: Oxford University Press.

Foust CR and O'Shannon Murphy W (2009) Revealing and reframing apocalyptic tragedy in global warming discourse. *Environmental Communication* 3: 151–67.

Geertz C (1966) Religion as a cultural system. In: Banton M (ed.) *Anthropological Approaches to the Study of Religion*. London: Tavistock Publications, 1–46.

Gentner D and Jeziorski M (1995) The shift from metaphor to analogy in Western science. In: Ortony A (ed.) *Metaphor and Thought* (2nd edition). Cambridge: Cambridge University Press, 447–80.

Hari J (2007) The last gasp of the global warming deniers. *The Independent*, 25 January, p. 30.
Hume M (2007) Thou shalt not go religiously green. *The Times*, 27 April, p. 20.
Inwood MJ (1995) Enlightenment. In: Honderich T (ed.) *The Oxford Companion to Philosophy*. Oxford: Oxford University Press, 236–7.
IPCC (2007) Summary for policymakers. In: Metz B, Davidson OR, Bosch PR, Dave R and Meyer LA (eds) *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, 1–23.
Ipsos MORI (2008) Public attitudes to climate change, 2008: Concerned but still unconvinced. Available at: www.ipsos-mori.com/Assets/Docs/Publications/sri-environment-public-attitudes-to-climate-change-2008-concerned-but-still-unconvinced.pdf
Iyengar S and Kinder DR (1987) *News that Matters: Television and American Opinion*. Chicago: University of Chicago Press.
Johns I (2007) The global warming debate overheats. *The Times*, 9 March, p. 27.
Kruglanski AW, Crenshaw M, Post JM and Victoroff J (2007) What should this fight be called? Metaphors of counterterrorism and their implications. *Psychological Science in the Public Interest* 8: 97–133.
Lakoff G (1991) Metaphor and war: The metaphor system used to justify war in the Gulf. *Peace Research* 23: 25–32.
Lakoff G (1995) The contemporary theory of metaphor. In: A. Ortony (ed.) *Metaphor and Thought* (2nd edition). Cambridge: Cambridge University Press, 202–51.
Lawson D (2006) Do you want to live in a country with rising unemployment and far less public spending? *The Independent*, 31 March, p. 16.
Lawson N (2008) The REAL inconvenient truth: Zealotry over global warming could damage our Earth far more than climate change. *Daily Mail*, 5 April.
Lea R (2006a) The Global Salvationist creed should be challenged. *The Daily Telegraph*, 26 June, p. 2.
Lea R (2006b) Business should beware of green-clad fundamentalists. *The Daily Telegraph*, 6 November, p. 3.
Lorenzoni I, Leiserowitz A, Doria M, Poortinga W and Pidgeon N (2006) Cross-national comparisons of image associations with "global warming" and "climate change" among lay people in the United States of America and Great Britain. *Journal of Risk Research* 9: 265–81.
Lynas M (2007) Can shopping save the planet? *The Guardian*, 17 September, p. 4.
MacLeod J (2008) Hope springs eternal. *Daily Mail*, 17 May, p. 16.
Mount H (2008) Global warming sceptics in an unholy row. *The Daily Telegraph*, 27 May, p. 22.
Newspaper Marketing Agency (2008) NMA Marketplace Charts. Available at: www.nmauk.co.uk/nma/do/live/marketPlaceCharts;jsessionid=3F7AEE22D026844EF0DD980988C52DB2
Office for National Statistics. (2001) Census: Standard area statistics (England and Wales). ESRC/JISC Census Programme, Census Dissemination Unit, Mimas (University of Manchester)/Centre for Interaction Data Estimation and Research(University of Leeds). Available at: www.census.ac.uk/default.aspx
Porter H (2007) Now we're all on the misery line together. *The Observer*, 14 January, p. 25.
Reid M (2008) I don't want to live in a scratchy world of hemp lingerie. *The Times*, 21 April, p. 19.
Rogner HH, Zhou D, Bradley R, Crabbé P, Edenhofer O, Hare B, Kuijpers, L and Yamaguchi M (2007) Introduction. In: Metz B, Davidson OR, Bosch PR, Dave R and Meyer LA (eds) *Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge: Cambridge University Press, 95–116.
Sheller M (2004) Automotive emotions: Feeling the car. *Theory, Culture & Society* 21: 22–42.
Simms A (2008) Philip Pullman: New brand of environmentalism. *The Daily Telegraph*, 19 January, p. 1.
Smith C (2010) It's still real and it's still a problem. Available at: news.bbc.co.uk/1/hi/sci/tech/8568377.stm
Smith R (1997) *The Fontana History of the Human Sciences*. London: Fontana Press.
Steg L (2005) Car use: Lust and must. Instrumental, symbolic and affective motives for car use. *Transportation Research Part A*, 39: 147–62.
Stoll-Kleeman S, O-Riordan T and Jaeger CC (2001) The psychology of denial concerning climate mitigation measures: Evidence from Swiss focus groups. *Global Environmental Change* 11: 107–17.
Street Poll. (n.d.) Available at: extras.timesonline.co.uk/pdfs/tthstreetpoll2.pdf
Tversky A and Kahneman D (1981) The framing of decisions and the psychology of choice. *Science*, 211: 453–8.

Ungar S (2000) Knowledge, ignorance and the popular culture: Climate change versus the ozone hole. *Public Understanding of Science* 9: 297–312.
Webster B and Riddell P (2009) Global warming is not our fault, say most voters in Times poll. *The Times*, 14 November. Available at: www.timesonline.co.uk/tol/news/environment/article6916648.ece
Witte K and Allen M (2000) A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Education & Behavior* 27: 591–615.
Woods R, Coen S and Fernández A (2009) An analysis of the British public's concerns regarding climate change legislation. *International Journal of Climate Change: Impacts and Responses* 1: 75–92.
YouGov. (2009) YouGov/Left Foot Forward survey results. Available at: www.yougov.co.uk/extranets/ygarchives/content/pdf/LeftFootForward_Dec09.pdf

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