

Accepted pre-publication version

Published at: *Environmental Communication* 3:2 (2009) 134-150.

The politics of accuracy in judging global warming films

Abstract

In 2007, two documentaries about global warming – *An Inconvenient Truth* and *The Great Global Warming Swindle* – became subject to legal and regulatory challenges in the UK. This paper examines the limitations of appeals to accuracy in these two cases. Rather than terminating debate, the discourse of accuracy engenders a representational regress which serves only to generate further controversy. Accuracy claims become particularly problematic in the case of documentary film where the role of the visual image must be accounted for. In particular, the ambiguous figural status of the image in science documentaries makes accuracy an inadequate means by which to judge such films. I suggest that rather than being considered in isolation, accuracy needs to be understood as one of several textual features which together construct the truthfulness of a text. The integrity of the text emerges as the most meaningful concept for evaluating media representations of climate change.

Keywords: media, documentary film, accuracy, rhetoric, global warming.

Introduction

In 2007, two high-profile films about climate change became the subject of formal proceedings in the UK. *An Inconvenient Truth*, featuring former US Vice-President Al Gore, was the subject of a High Court case regarding its distribution in schools by the UK Government. The documentary *The Great Global Warming Swindle*, written and produced by filmmaker Martin Durkin, was examined by the broadcasting regulator Ofcom following numerous complaints after it was broadcast on television. In both cases, many of the subsequent media reports implied that the adjudication had found against the theory of anthropogenic global warming. Other media reports implied precisely the opposite.

These two cases offer an insight into the reception of media products about climate change. In particular, they reveal the discursive proliferation of accuracy claims, the ideological ends towards which such claims are directed, and the problems which arise when accuracy is taken to exist independently of the rest of the text. In this paper, I argue that in order to make sense of the contested claims and counter claims in discourse about politically-significant science, we need to treat accuracy as a property which, although determined by the referent reality, is of necessity a product of the rhetorical apparatus of the text. Accuracy cannot be judged in isolation but is one of many properties of the text which together speak to its truthfulness.

Questions of accuracy have long been a focus of scientists' concerns about the media representation of science and were among the first to be studied by researchers (e.g., Tichenor *et al.*, 1970; Tankard and Ryan, 1974; Moore and Singletary, 1985; Singer, 1990; Ankney, 1996). Such studies attempted to assess the accuracy of news reports on scientific topics but produced contradictory results. Allan Bell (1994) examined the accuracy of reports about ozone depletion and global warming in the New Zealand media. Acknowledging many of the difficulties associated with accuracy analyses, Bell found that at worst stories were only slightly inaccurate but that basic facts, such as names and spellings, were often wrong. He also found that scientists rated general media coverage as far less accurate than the individual stories reporting their own work. Even though findings such as Bell's suggest that scientists' perception of the

inaccuracy of media coverage is itself problematic, the notion of accuracy invoked in such assessments has received little critical attention.

Recent studies of the media representation of climate change have focussed on questions of balance. Maxwell Boykoff's content analyses show how newspapers and television news bulletins, in applying the journalistic norm of reporting both sides of an argument, have "perpetrated an informational bias by significantly diverging from the consensus view in climate science that humans contribute to climate change" (Boykoff, 2008: 1; see also Boykoff and Boykoff, 2004; 2007). Journalistic balance becomes an important issue because media reports on climate science can, intentionally or otherwise, serve political ends. It matters that sceptics of anthropogenic global warming are widely reported in the media because generating doubt about the cause of climate change will adversely affect the political support for taking action to limit CO₂ emissions. Anabela Carvalho proposes that this political significance of climate change science necessitates "a politicized reading" of how the subject is covered in the news media (Carvalho, 2007: 240). This paper is an attempt to undertake such a politicized reading. However, it looks beyond news reports, to examine the construction – and multiple deconstructions – of documentary film.

Non-news factual genres have been largely overlooked by researchers who have instead focussed on newspaper content and, when they do turn their attention to other media, television news. Yet documentary films, whether shown on television or distributed through cinemas, can act as prominent media products whose form and content becomes the subject of further public discourse. Films are talked about, critically reviewed, and thus re-mediated in a way that individual news reports usually are not. Like books (Mellor, 2003), feature-length films can acquire a distributed media presence, acting as focal points for public discourse about science.

In what follows, I argue that the discursive reconstructions of *An Inconvenient Truth* and *The Great Global Warming Swindle* demonstrate the inadequacy of "accuracy" both as an analytical concept for researchers and as the basis of public discourse about media representations of climate change. I begin by briefly describing each film and the proceedings through which it came to be judged. I then discuss the ways in which appeals to accuracy failed to resolve the disputes about each film. I finish by

considering how the rhetorical status of the documentary image confounds evaluations based on a narrow assessment of accuracy.

An Inconvenient Truth

An Inconvenient Truth (AIT) is a feature-length documentary directed by Davis Guggenheim and distributed in cinemas worldwide in 2006. Despite being essentially a lecture on film, it received an Oscar for Best Documentary in 2007 and later that year, just one day after the High Court passed its judgement about the distribution of the film in English schools, Al Gore was awarded the Nobel Peace Prize for his efforts to raise public awareness and understanding of global warming.

The film adopts a very personal mode of address, combining footage of Gore giving a lecture with shots of him travelling. The latter are accompanied by a voice-over in which he explains his own involvement in the climate change debate. He talks about growing up on a farm and about his family. He recalls the lecturers who inspired him as a student and refers to various scientists as his “friends”. These personal sequences and references punctuate the film’s exposition of climate change science. Here, we see Gore lecturing to an audience about the evidence for anthropogenic global warming and the consequences it might lead to. The lecture is slick, but it is nevertheless a lecture, with graphs, explanations of global climatic processes and slides of climatic events from around the world. The result, perhaps surprisingly, is a forceful and passionate attempt to persuade viewers that climate change is real, that it is happening now and that it requires urgent action.

In February 2007, the UK Government’s Department for Education and Skills announced that it would distribute the DVD of *AIT* to every secondary school in England as part of an educational pack about climate change. Also included in the pack were four other short films and a reference to a website where further Guidance Notes could be obtained which identified those parts of the film requiring further context or qualification from the teacher. The announcement prompted Stuart Dimmock to bring a legal action against the Secretary of State for Education and Skills.¹ Dimmock claimed that the film was political and as such its distribution to

schools contravened the Education Act 1996 which states that the education authorities:

shall forbid ... the promotion of partisan political views in the teaching of any subject in the school.

and:

shall take such steps as are reasonably practicable to secure that where political issues are brought to the attention of pupils ... they are offered a balanced presentation of opposing views.

Dimmock is described in the judgement as a parent and school governor. A report in his local newspaper some months before the hearing revealed that he was also standing as a candidate in the local elections on behalf of the New Party (*Dover Express*, 2007). The New Party is a small anti-regulation, low-taxation political party whose Chairman, quarry-owner Robert Durward, was a co-founder of the Scientific Alliance, a UK-based lobby group which challenges the scientific consensus on climate change (Doward, 2007). According to journalist Jonathan Leake (2007), the New Party's manifesto was written by Viscount Monckton, a former journalist and advisor to the then Prime Minister Margaret Thatcher. Monckton is a vocal climate change sceptic and chief policy advisor to the Science and Public Policy Institute, an American lobby group which claims that global warming is natural and harmless.² Monckton submitted a witness statement as part of the High Court case and described himself as one of Dimmock's "backers" (Leake, 2007).

The case was initially thrown out after a paper review, but following a renewed application it was heard before Justice Burton in the High Court at the end of September 2007. Burton found that although the film drew heavily on scientific research, it was a political film – a claim not challenged by the defence – and that it was therefore subject to the requirement of balance. Burton then went on to assess the need for balance by considering the film's accuracy as judged against the consensus position set out in the fourth assessment report of the Intergovernmental Panel on Climate Change (IPCC). He concluded that the film was "broadly accurate" but he went on to detail nine "errors" in particular scenes. These "errors" were points which had been identified as such by Dimmock's counsel and which the judge said he found to be persuasive. He concluded that in failing to discuss the shortcomings of these nine scenes, the original Guidance Notes had been insufficient to ensure a balanced

presentation. Since the Notes had now been revised, Burton ruled that no further action was required.

The Great Global Warming Swindle

Some months before his case came to court, Dimmock had told his local newspaper that he would be happy for *AIT* to be distributed to schools if it were accompanied by another film, *The Great Global Warming Swindle (GGWS)* (*Dover Express*, 2007). That film, directed by Martin Durkin and produced by his company WagTV, was billed as “the definitive response” to Gore’s film.³ In many respects, *GGWS* is a much more conventional science documentary than is Gore’s film. It uses the standard techniques of what documentary theorist Bill Nichols (1991) has called the expository mode; unlike Gore, Durkin does not appear in his film but instead provides a voice-of-God narration, and the film’s argument that global warming is not caused by humans is advanced by extensive use of “talking-head” shots of a large number of interviewees. All of the interviewees appear to support the film’s thesis and they are introduced with long recitals of their official affiliations and scientific credentials. Aside from footage of the interviewees and their surroundings, and a number of animations including nine graphs, much of the rest of the visual component of the film is made up of shots of beaches, traffic, clouds, and so on – what documentary filmmakers refer to as “wallpaper shots”.

Even before it was broadcast, the film had attracted media attention. Some heralded it as demonstrating that the theory of anthropogenic global warming was unfounded: “Climate change is natural and has been happening for years, experts say on The Great Global Warming Swindle” (*Sun*, 2007). Others pointed to the fact that Durkin had a track record of making anti-environmentalist films (Lean, 2007); ten years earlier he had produced a series of programmes for Channel 4 called *Against Nature* which had compared environmentalists to Nazis and had argued that environmentalism was a Western conspiracy against the developing world. On that occasion, complaints to the television regulator led to Channel 4 being found guilty of misleading contributors and misrepresenting their views. The production of *Against Nature* had involved former members of the Revolutionary Communist Party, a group which by the early 1990s had rebranded itself under the auspices of *LM* magazine and

was now promoting an extreme libertarian, anti-environmentalist ideology with little apparent connection to Marxism (Living Marxism, 1996). Although Durkin denied that he was a member of this political network (Lobbywatch, undated), *Against Nature* had reproduced *LM*'s anti-environmentalist thesis in detail. When, a decade later, *GGWS* was also criticised, Durkin defended his film in an interview with *Spiked*, the online magazine which is the successor to *LM* magazine (O'Neill, 2007).

GGWS was broadcast on 8th March 2007 by Channel 4, one of the UK's five national terrestrial channels. The broadcast provoked protests from climate scientists, environmental campaigners and others. Ofcom, the broadcasting regulator, received 265 complaints about the programme, as well as a 176-page Group Complaint which had been reviewed by a number of climate scientists and other relevant experts. Broadly, the complaints charged that the programme contravened the Broadcast Code by failing to treat the topic with due impartiality and by misrepresenting a number of facts. In addition, Ofcom considered three fairness cases following complaints from the UK's Chief Scientific Advisor Sir David King, the IPCC, and one of the film's interviewees, oceanographer Professor Carl Wunsch, all of whom complained that they had been misrepresented in the film.

Over a year after the film was first broadcast, Ofcom issued its ruling (Ofcom, 2008). The Broadcast Code requires that news programmes be factually accurate and impartial. However, these requirements only apply to non-news factual programmes if they deal with "matters of political or industrial controversy and matters relating to current public policy" (Ofcom, 2005). Ofcom found that the final part of *GGWS*, which considered the impact on the developing world of reducing CO₂ emissions, had been in breach of the Code for failing to present alternative views on a matter of major political controversy. However, Ofcom concluded that the first four parts of the film, which dealt with the science of global warming, did not deal with matters of political controversy and the requirement for accuracy and impartiality therefore did not apply. These parts of the film were therefore found not to be in breach. In respect of the fairness cases, Ofcom upheld the complaint by King and partially upheld the complaints by the IPCC and Wunsch.

The regress of accuracy claims

Accuracy was a key analytical frame drawn on in both the above cases. Scrutinising the accuracy of the texts was invoked as a way of judging the films. Yet, as this section will discuss, accuracy claims served to generate further rounds of dispute rather than to resolve the matter.

As noted above, although Justice Burton ruled that *AIT* was “substantially founded upon scientific research and fact” and, with the expanded Guidance Notes, allowed it to be circulated in schools, he also identified nine “errors” in the film. When discussing these nine points, Burton placed the word “error” within quote marks, emphasising that this was the claimant’s framing and suggesting that it was not one he necessarily accepted. However, in no other way did he challenge this framing – for instance, by offering an alternative way of describing the nine points at issue – and when talking more generally, he used the term without the scare quotes.

It was on these “errors” that subsequent media commentary focussed, in both professional news media and internet blogs. The BBC’s ten o’clock news bulletin on BBC1 led with the story, framing it entirely in terms of inaccuracies and giving examples of four of the supposed errors identified by the judge. The report on the BBC website took a similar approach:

Gore climate film’s nine ‘errors’

A High Court judge who ruled on whether climate change film, *An Inconvenient Truth*, could be shown in schools said it contains nine scientific “errors”.

(BBC, 2007)

The national newspapers reported the story in similar vein. For instance, the lead paragraph of the report in *The Times* stated that: “Al Gore’s award-winning climate change documentary was littered with nine inconvenient untruths, a judge ruled yesterday” (Smith, 2007). The headline of *The Daily Express* report referred to: ‘Al Gore climate film’s 9 “untruths”’ (Guyoncourt, 2007) and according to the columnist Richard Littlejohn, writing in the right-wing tabloid *The Daily Mail*, the judge had ruled that the film was “hysterical and inaccurate” (Littlejohn, 2007). Despite noting that the judge had found the film to be “broadly accurate”, even *The Guardian*, a

newspaper usually sympathetic to calls for action on climate change, emphasised errors: ‘Gore’s climate film has scientific errors – judge’ (Adam, 2007).

This focus on error stimulated responses from climate scientists and other internet commentators, who now studied the accuracy of the judge’s claims of inaccuracy. For instance, John Shepherd, Professor of Oceanography at Southampton University and Deputy Director of the Tyndall Centre for Climate Change Research, issued a statement going through the judgement point by point. He concluded that: “In no case is there a scientific “error” as such.... To refer to ‘nine scientific errors’ is therefore itself a very considerable misrepresentation of the facts” (Shepherd and Rapley, 2007: 4). Likewise, climate scientists Gavin Schmidt and Michael Mann concluded that: “it is clear that the purported ‘errors’ are nothing of the sort” (Schmidt and Mann, 2007). Computer scientist and climate change blogger Tim Lambert accused the judge of being “badly wrong” on several points (Lambert, 2007). Others, such as climate physicist Andrew Dressler, felt that whilst parts of the film were poorly phrased and could be classed as errors, the film’s overall accuracy was more significant (Dressler, 2007). These accuracy claims in turn prompted further comments, some of which disputed the accuracy of the climate scientists’ statements. In the case of the RealClimate website, for instance, the blog by Schmidt and Mann garnered almost five hundred comments in response.

Immediately, then, accuracy proved a contentious and slippery notion. Commentators disputed both the accuracy of the judge’s own accuracy claims and his definition of what counted as error. Far from settling the matter, the judgement triggered a proliferation of further accuracy claims leading, in an almost endless regress, to accuracy claims about accuracy claims about accuracy claims. Accuracy claims thus opened up room for more and more debate rather than closing down debate into a final judgement.

In the case of *GGWS*, accuracy claims unfolded rather differently but again failed to resolve the case. Accuracy was the main substance of the complaints about that film’s breach of broadcasting standards. For instance, the Group Complaint claimed that the film had argued against the theory of anthropogenic global warming “by displaying erroneous or artificially manipulated graphs, and presenting incorrect, misleading, or

incomplete opinions and facts on the science of global warming and the related economics” (Rive *et al.*, 2007: 1). After noting that Durkin had admitted to some “inadvertent errors”, the Group Complaint suggested that whether or not the errors were intentional was not relevant but that “the sheer number of transgressions” was.

Over the course of the programme, the programme-maker systematically failed to ensure that individual facts and graphs presented were correct, that interviewee’s individual opinions were indicated as such, that narrator impartiality was maintained, and that the consequent overall message of the programme was an accurate reflection of the scientific facts.

(Rive *et al.*, 2007: 1)

Among the inaccuracies enumerated in the Group Complaint were the graphs used in the film. One of these graphs misrepresented recent warming by deleting the past twenty years of data (which show the greatest warming) and relabelling the time axis to obscure the deletion. In another graph, which purported to show a correlation between historic temperatures and solar activity, what was actually a gap in the solar activity data was filled with a line following that of the temperature (Rive *et al.*, 2007: 4). In response to these allegations, Channel 4 excused the graphs as highly stylised, noting that the error with the time axis had been corrected in the repeat of the programme and claiming that in any case it had not affected the overall argument of the programme. Accuracy, then, was differently contextualised by the two sides. For the complainants, accuracy was to be understood as a property relating to the text as a whole, as well as to individual instances of error. The large number of misrepresentations, ranging from factual errors through to misleading arguments, reinforced each other and brought the integrity of the whole programme into question. For Channel 4, however, the factual errors were to be considered in isolation from each other and as such were deemed to be insignificant.

The presence of misrepresentations of data in the film would seem to suggest that the discourse of accuracy would, in this case at least, offer an unambiguous means of judging the film. However, this was not to be. For Ofcom, questions of accuracy were highly problematic and, far from providing the basis of a definitive judgement, resulted in an adjudication that was self-contradictory. Whatever the cause (and some suggested that the adjudication had exposed the limitations of the regulator), the result was that accuracy claims again failed to close down debate.

In considering the claims of factual inaccuracy, Ofcom responded that it was “not a fact-finding tribunal” (Ofcom, 2008: 7). It was beyond its remit to “adjudicate on ‘facts’ such as whether global warming is a man-made phenomenon, nor is Ofcom able to reach conclusions about the validity of any particular scientific theories” (Ofcom, 2008: 14). Furthermore, there is no formal requirement, as there is for news programmes, for a documentary to be factually accurate unless it deals with matters of political controversy or matters relating to current public policy. Section 5 of the Broadcast Code defines these as “political or industrial issues on which politicians, industry and/or the media are in debate.” As noted above, Ofcom argued that the first four parts of the programme dealt with the science of global warming and did not assess particular government policies. Since the consensus view of the science was not disputed by any of the main political parties, Ofcom concluded that these parts of the film did not deal with a matter of political controversy and so the requirement for accuracy did not apply. That anthropogenic global warming is a matter of media debate, as evidenced by the film itself as well as by the findings of media researchers such as Boykoff, was not addressed in this part of the ruling. Elsewhere, Ofcom described anthropogenic global warming as a subject of “scientific controversy”; an observation which led it to conclude that it was therefore inevitable that those involved in such debates would disagree about the facts (Ofcom, 2008: 14).

Despite finding that the section 5 requirement for due accuracy did not apply, Ofcom did consider charges of inaccuracy with reference to section 2.2 of the Broadcast Code, which requires that programmes do not mislead the audience so as to cause harm or offence. Channel 4 had introduced the programme as “a controversial and thought-provoking documentary from filmmaker Martin Durkin”. Ofcom argued that this meta-textual framing – together with explicit comments within the film which, for instance, referred to the consensus view as “lies” – clearly identified the film as a polemical work and as such it would not have misled the audience. Furthermore, since anthropogenic global warming had been widely presented in the media, Ofcom concluded that the audience would already be informed about the mainstream view. In this context, Ofcom concluded, the instances of inaccuracy and misrepresentation detailed by the complainants were not such as to cause harm.

Thus the question of accuracy led Ofcom to a contradictory position: declining to rule on matters of fact even whilst assessing the effect of such matters on the audience; and finding no political or media controversy in climate change science even whilst identifying scientific controversy in a polemical film on the subject. On the one hand, accuracy was deemed irrelevant to the required standards of a factual programme about a controversy concerning science, and, on the other hand, the significance of individual instances of inaccuracy was to be determined purely by reference to the wider media context. Not only did this construal of accuracy bypass questions about how the text as a whole signified through the combination of its individual elements, but it also subsumed accuracy within a judgement of the assumed knowledge and reactions of the audience and inconsistent assessments of the public controversy around global warming.

For many commentators responding to Ofcom's ruling, its sidestepping of the question of accuracy was baffling. For instance, Michael McCarthy, writing in *The Independent* newspaper, thought that "the most fascinating aspect of the Ofcom judgement ... is that the broadcasting regulator declares itself – quite remarkably, one might think – unable to pronounce on whether the contents of the programme were accurate or not" (McCarthy, 2008). Similarly, environmentalist and *Guardian* columnist George Monbiot suggested that the "paradoxical judgement" had "exposed the limitations of the regulator" (Monbiot, 2008). By contrast, Channel 4's Head of Documentaries, Hamish Mykura, writing in response to Monbiot, appealed to the Ofcom ruling as vindication of the film's overall accuracy:

Ofcom scrutinised this film in unprecedented detail and it is now possible to dismiss Monbiot's allegations with authority. He claims that the programme manipulated graphs and fabricated data, but, having acknowledged a few unintentional errors, Channel 4 showed that none of the scientific data was materially misleading and Ofcom agreed.
(Mykura, 2008)

Similarly, the *Daily Mail* reported that the broadcaster had been "cleared of misleading" viewers (Derbyshire, 2008) and, whilst some newspapers, such as *The Daily Telegraph*, reported the ruling as finding against Channel 4 (Martin, 2008), *New Scientist* magazine thought Channel 4 had been "let off the hook" (*New Scientist*, 2008).

Thus, as in the case of *AIT*, accuracy claims failed to resolve the dispute over *GGWS*. Despite being presented with evidence of the material misrepresentation of data, the regulator refused to consider factual accuracy as falling within its remit and judged the significance of accuracy as a product only of the wider media context. The status of the text as a whole and its relationship to the reality of which it claimed to speak were deemed to be of little relevance compared to assumptions about audience knowledge and political consensus.

The rhetoric of the documentary image

Competing notions of accuracy meant that, in both the cases considered here, claims about inaccuracies failed to produce definitive adjudications. In this section I argue that the problem in judging the films arises in part from the lack of attention given to the rhetoric of the film text, especially regarding the visual component of film. By considering the rhetoric of a film in its entirety, we can better approach the question of a film's truthfulness – the underlying (and, I suggest, more significant) property to which accuracy claims attempt to speak. A key issue is the honesty of the film, not in terms of the filmmaker's motivations but in terms of how open the film is in its rhetorical claims. Rather than reducing a media text to a list of (in)accuracies, we need instead to focus on the text's integrity – both in the sense of considering the text as a whole made up of many individual rhetorical elements and also in the sense of evaluating its honesty and openness.

Unlike words, images cannot be explicit about their rhetorical status. Words can both convey content and also, simultaneously, signal the representational form through which the content is conveyed. Images do not so easily have this reflexive capacity. Editing and special effects can be used to introduce some degree of rhetorical signposting, but editing more often seeks to hide itself. In documentary film, we are typically invited to take images at face value and we thus approach such films with this expectation. This, I suggest, becomes a particularly acute problem in the case of science documentaries since the representational methods of scientific discourse invite similar expectations to those of documentary film. I will illustrate this by returning to the question of the graphs in *GGWS*.

In using the standard techniques of an expository documentary – a voice-of-God narration and extensive use of edited footage of interviewees presented as experts – Durkin was deploying a familiar rhetoric which positioned the film, for all its polemic, as the product of a privileged relationship with the reality to which it referred. This rhetorical positioning drew on both the documentary tradition and the rhetoric of science.

As documentary theorists have argued, the documentary form – and particularly the expository mode – asserts an indexical relationship with reality; the filmic image of the documentary, formed through a direct interaction with that which it records, serves as witness to actual events. To acknowledge this is not, however, to deny that the documentary image is also heavily mediated. It is worth quoting Nichols at some length on this point:

Among the assumptions that we bring to documentary ... is that individual shots and sounds, perhaps even scenes and sequences will bear a highly indexical relationship to the events they represent but that the film as a whole will stand back from being a pure document or transcription of these events to make a comment on them or to offer a perspective on them. Documentaries are not documents in the strict sense of the word, but they are based on the document-like quality of elements within them. As an audience we expect to be able both to trust to the indexical linkage between what we see and what occurred before the camera *and* to assess the poetic or rhetorical transformation of this linkage into a commentary or perspective on the world we occupy. We anticipate an oscillation between the recognition of historical reality and the recognition of a representation about it. This expectation distinguishes our involvement with documentary from our involvement with other film genres.

(Nichols, 2002: 38-9)

Thus documentary films take a position, but they aim to persuade by establishing trust through their indexicality. The use of talking-head shots in an expository documentary, for example, testifies to the fact that this person really did make that particular claim. The rhetoric of the film establishes a contract between filmmaker and viewer in which the viewer accepts the veracity of the elements out of which the film's visual text is composed even whilst they may question the filmmaker's overall argument or narration.

In science documentaries, indexicality is also established by virtue of the subject matter. Science's empirical base and its appeal to organised scepticism make similar claims for a strong causal link between material reality and representation, so much so that in public discourse the representational activity of science is often overlooked.

Thus the typical science documentary asserts its indexicality twice over, raising the possibility that the oscillation, of which Nichols speaks, between the recognition of historical reality and the recognition of representation is greatly diminished as the act of representation is eclipsed by its referent subject.

Graphs are perhaps the most highly indexical of the representational techniques of science, tracing as they do data gathered from the material world. In using graphs in a documentary about science, Durkin asserts an indexical linkage at multiple levels of form, subject, and content. Ofcom described the purpose of the graphs as “primarily to provide a visual illustration of the commentary/interviews they accompanied in order to develop the thesis of the programme” (Ofcom, 2008: 16). Whilst it is certainly the case that the graphs served to develop the thesis of the film, such an interpretation – the innocent of the visual image as illustration – ignores the rhetorical work that graphs accomplish in establishing an indexicality which is not available to the linguistic component of the film. As Nichols notes, the indexical nature of documentary film enables the audience to invest trust in it. In falsifying graphs, and in doing so without the use of explicit textual indicators such as irony, Durkin surreptitiously broke the indexical link even at the same time as he invoked the full range of rhetorical techniques to claim such a link and hence to signify his film as trustworthy. In other words, in its textual cues, Durkin’s film repeatedly and consistently invoked audience expectations of the trustworthiness of both documentary film and scientific evidence even as it simultaneously negated these expectations through unmarked means. Regardless of Durkin’s own motivations and intentions, the film text was dishonest.

In *AIT*, Gore also used graphs, albeit more sparingly than Durkin, to advance his argument. In one scene, he shows a graph of past temperatures and CO₂ levels to make the case for a correlation between the two. Gore mounts a rising platform to emphasise the magnitude of projected levels of CO₂. This was one of the scenes which Justice Burton identified as an error. In his narration, Gore notes that the relationship is “very complicated” but goes on to say that “when there is more carbon dioxide, the temperature gets warmer” – a statement that is technically correct but which obscures the fact that in the past temperature rises have tended to precede rises in CO₂. The graph’s demonstration of the correlation between CO₂ and temperature

helps reinforce an interpretation of causal relation. Like Durkin, Gore is here using the indexicality of the graph to establish the trustworthiness of his argument, but its juxtaposition with the precarious platform onto which Gore climbs – the absurdity and drama of which marks a clear rhetorical addition to the reality of global temperatures – serves to draw attention to the representational work on which the film is embarked. It explicitly plays on, and indeed exploits, Nichols's "oscillation" between the recognition of historical reality and the recognition of representation. Nor has there been any suggestion that the data on these graphs had been falsified. Like Durkin, Gore uses the graphs rhetorically, but unlike Durkin he does so openly and honestly.

The indexicality of the documentary image is closely related to its metonymic status. This aspect of the rhetoric of the documentary film is also relevant to other scenes in *AIT* which the judge found to be in error. Metonymy is the figure of speech in which a cause or effect of the thing referred to stands in for the thing itself. Metonymy is also often taken as an overarching term that includes synecdoche, where a part is taken to stand in for the whole. As Richard Kilborn and John Izod argue, documentary film makes extensive use of the visual equivalent of metonymy in order to "reassure us that the visible indexical bond of the documentary image does indeed authenticate historical actuality" (Kilborn and Izod, 1997: 37). A typical example of this use of image can be found in the final part of *GGWS* where an African woman is shown cooking over a smoking wood fire while the narration speaks of the health implications of breathing in smoke and, more generally, of the dangers to local populations of preventing development in poor countries. In this scene, the woman and her fire are to be read as one example of the widespread use of wood fires (the image functions synecdochically) and the situation pictured is to be seen as caused by lack of development (the image functions metonymically). The visuals of many other current affairs documentaries and television news packages function in a similar manner. Together, then, metonymy and synecdoche direct our usual reading of the documentary image.

Both synecdoche and metonymy are figures of contiguity. Thus the conventional figural status of the visual image in documentary film is one of proximity, of direct witnessing. However, this relationship often becomes problematic in the case of

science documentaries; partly because of the level of abstraction of much science and partly because science often deals with that which has not been witnessed directly.

The abstraction of science means that science documentaries are typically driven by, and gain their coherence from, the verbal narration. The images are often secondary and arbitrary and their content frequently represents neither a part of the topic being discussed nor are they caused by it. Shots of talking heads do testify to the presence of experts, but other images – especially so-called “wallpaper shots” – have no such metonymic function. The numerous shots of beaches and clouds in *GGWS* are typical. They speak to the film’s content at some general level – this is what current weather and society are like – but they don’t directly contribute to the argument advanced in the film’s linguistic message.

Likewise, the need to speak of events or phenomena which have not yet happened – as is the case in climate change science – renders problematic the act of witnessing that forms the basis of a documentary’s indexicality. One working through of this tension can be found in what Mark Wolf has termed the “subjunctive documentary”; that is, documentaries which use computer simulations or enactments to visualise future or past events deduced from scientific data. Wolf argues that such simulations reveal “a greater willingness to trade close indexical linkage for new knowledge that would otherwise be unattainable within the stricter requirements of indexical linkage that were once needed to validate knowledge empirically” (Wolf, 1999: 274). For Wolf, this indexical “elongation” is not so very different from the usual editing through which the documentary filmmaker constructs a particular point of view. Yet the figural status of simulated images is very much more ambiguous than edited footage of actual events. Simulations are neither metonymic (they are not caused by, nor connected to, the future or past reality to which they refer); nor are they synecdochic (they are not a part of that reality). Any documentary about climate change faces similar issues since the effects of global warming have not yet been realised. When we attempt to represent global warming, we of necessity enter into the subjunctive mode.

As a result of these constraints, the figural status of the science documentary image is often (although not always) metaphorical rather than metonymic. It establishes a

relationship of similarity rather than of contiguity. Science documentaries are not alone in this; modern documentaries come in many forms and use a variety of visual rhetorical techniques. However, the use of metaphor rather than metonymy becomes ambiguous in the case of science documentaries. This is in part because the indexicality of science reinforces expectations of metonymy in the filmic image and in part because science documentaries trigger expectations that images will be used conventionally, since films in this sub-genre have invariably experimented less with form than have other documentaries. (For instance, the BBC's Horizon series of science documentaries sticks closely to the conventions of the expository mode despite a frequent lack of metonymic images other than talking-head shots.)

This ambiguity over the figural status of the image explains some of Justice Burton's findings of error in *AIT*. I will illustrate this by reference to Gore's representation of Hurricane Katrina. The judge claimed that in part of the film:

Hurricane Katrina and the consequent devastation in New Orleans is ascribed to global warming. It is common ground that there is insufficient evidence to show that.
(*Dimmock v. Secretary of State for Education & Skills*: para 31)

At no point does Gore, in his narration, actually claim that Hurricane Katrina was caused by global warming. What he does do, however, is show images of Katrina and its aftermath after talking about the consequences of warming oceans. Taken as metonymic images, this suggests an attribution of a causal relationship between this particular hurricane (the subject of the images) and global warming (the reality to which the film refers). Yet read metaphorically, as a figure of similarity rather than contiguity, the images serve to demonstrate what the climate-changed future might be *like*, with extreme weather events *similar* to Katrina. As visual metonymy, this scene makes a claim that cannot be justified. As metaphor, it tells a truth that is compatible with the IPCC consensus.

Thus Gore exploits the ambiguity of the filmic image to make available readings of causation without actually uttering an untruth. This is possible because of rhetorical slippage throughout the course of the film. Pictures of Gore arriving at a lecture, for instance, function synecdochically; one brief moment standing in for the whole tour and for his continual efforts over a long time to raise public awareness. Elsewhere, as

in the scene about Hurricane Katrina, the images function metaphorically. The on-screen presence of Gore, his identity as a political figure, and his personalised narration all signal that the rhetoric of the film does not rest purely on indexical claims as does Durkin's film, but also on an emotional appeal. A film such as this, then, is able to constantly shift its visual rhetoric without contradicting the expectations cued by other elements of the text. To judge the representational work of such a film, we must acknowledge this changing rhetoric. It is this that accounts – in part, at least – for the failure of the discourse of accuracy to get a secure purchase on the film, for accuracy already assumes a literal relationship between text and reality and in so doing forecloses the possibility of accounting for the changing figural status of a film's images.

Conclusion

Accuracy is an obvious discourse on which to draw in attempting to evaluate disputed media texts. However, as the cases involving *AIT* and *GGWS* have shown, the discourse of accuracy does not necessarily help resolve dispute. Rather, accuracy claims serve to perpetuate and extend controversy and in so doing they become political resources in their own right. In both the cases examined here, the discourse of accuracy was deployed for political ends. The case against the Government's distribution of *AIT* to schools was brought and supported by, and possibly funded by, members of a right-wing anti-environmentalist political party. The judge's ruling that the Guidance Notes should be amended to highlight the ambiguous and contested parts of the film was entirely reasonable. However, his identification of "errors" in the film provided political ammunition for those disputing the need to take action against climate change. Whilst there is no reason to suppose that the judge himself was politically motivated in using this term, his recourse to a discourse of accuracy offered support to the ideological agenda of the climate sceptics. In enumerating the errors of the film, the judge himself made a category error, mistaking metaphor for metonym and in so doing providing judicial sanction to those, like the members of the New Party, who would have us believe that global warming is an environmentalist conspiracy.

In the case of *GGWS*, the film was offered as a response to Gore's call to action by a filmmaker who had a track record of taking an anti-environmentalist position and who had previously worked with members of an extreme libertarian network. Climate scientists and environmental campaigners appealed to the discourse of accuracy in an attempt to delegitimise the film. Yet Ofcom's refusal to take factual fabrications as evidence of breach of the Broadcast Code was invoked by climate sceptics as evidence of the film's accuracy. The ambivalent ruling offered political capital for both sides of the debate; but most significantly, it ensured that those who wish to deny the evidence of anthropogenic global warming continue to be able to cite the film as a legitimate representation of fact.

The discourse of accuracy narrows and reduces the ways in which media texts about science can be evaluated. Yet to question the usefulness of the notion of accuracy as a primary unit of analysis is not to suggest that questions of truth are unimportant. Indeed, it is because of its failure to resolve the issue of the truthfulness of a film that accuracy becomes problematic. I have argued that paying attention to the textuality of documentary film can help in evaluating the truthfulness of the text as a whole. Rather than an isolated property, a sort of textual singularity pointing only outwards towards the referent reality, accuracy is better seen as one textual property among many which work together to construct the overall integrity of the text, signifying its truthfulness, openness and honesty. Attention to the textual integrity of prominent media products about climate change will not, of course, prevent continued controversy, but it should at least ensure that debates about those texts are grounded by the evidence of the texts themselves.

Endnotes

1. The showing of the film in schools had also been formally challenged in the US shortly before Dimmock brought his action (McClure and Stiffler, 2007).
2. See http://scienceandpublicpolicy.org/a_proper_focus_in_the_climate_change_debate.html.
3. See <http://www.greatglobalwarmingswindle.com/>.

References

- Adam, David (2007) 'Gore's climate film has scientific errors – judge' *The Guardian* (11 Oct): 5.
- Ankney, R.N., P. Heilman and J. Kolff (1996) 'Newspaper coverage of the coronary artery bypass grafting report' *Science Communication* 18(2): 153-164.
- BBC (2007) 'Gore climate film's nine "errors"' (11 Oct)
<http://news.bbc.co.uk/1/hi/education/7037671.stm>.
- Bell, Allan (1994) 'Media (mis)communication on the science of climate change' *Public Understanding of Science* 3: 259-275.
- Boykoff, Maxwell T. (2008) 'Lost in translation? United States television news coverage of anthropogenic climate change, 1995–2004' *Climatic Change* 86: 1–11.
- Boykoff, Maxwell T. and Jules M. Boykoff (2004) 'Balance as bias: global warming and the US prestige press' *Global Environmental Change* 14: 125–136.
- Boykoff, Maxwell T. and Jules M. Boykoff (2007) 'Climate change and journalistic norms: a case-study of US mass-media coverage' *Geoforum* 38: 1190–1204.
- Carvalho, Anabela (2007) 'Ideological cultures and media discourses on scientific knowledge: re-reading news on climate change' *Public Understanding of Science* 16: 223–243.
- Derbyshire, David (2008) 'C4 is cleared of misleading over film on global warming "lies"' *Daily Mail* (22 Jul): 29.
- Dimmock v. Secretary of State for Education & Skills* [2007] EWHC 288 (Admin) (10 Oct).
- Doward, Jamie (2007) 'Revealed: the man behind court attack on Gore film: fuel and mining magnate backed UK challenge to An Inconvenient Truth' *The Observer* (14 Oct): 11.
- Dover Express* (2007) 'A proper gander at Gore's propaganda' *Dover Express* (26 Apr): 5.
- Dressler, Andrew (2007) 'Errors in An Inconvenient Truth?' *Gristmill* (11 Oct)
<http://gristmill.grist.org/story/2007/10/11/9119/4948>.
- Guyoncourt, Sally (2007) 'Al Gore climate film's 9 "untruths"' *The Daily Express* (11 Oct): 19.
- Kilborn, Richard and John Izod (1997) *An Introduction to Television Documentary: Confronting Reality* Manchester: Manchester University Press.

- Lambert, Tim (2007) 'An "error" is not the same thing as an error' *Deltoid* (11 Oct)
http://scienceblogs.com/deltoid/2007/10/an_error_is_not_the_same_thing.php.
- Leake, Jonathan (2007) 'Please, sir – Gore's got warming wrong' *The Sunday Times*
 (14 Oct): 4.
- Lean, Geoffrey (2007) 'An inconvenient truth or hot air?' *Independent On Sunday* (4
 Mar): 32-33.
- Littlejohn, Richard (2007) 'The Richard Littlejohn Column' *Daily Mail* (12 Oct): 17.
- Living Marxism (1996) *The Point is to Change it: a Manifesto for a World Fit for
 People* London: Junius Publications.
- Lobbywatch (undated) 'Martin Durkin' *Lobbywatch Profiles*
<http://www.lobbywatch.org/profile1.asp?PrId=39>.
- Martin, Nicole (2008) 'Channel 4 rebuked for being unjust and unfair' *The Daily
 Telegraph* (22 Jul): 9.
- McCarthy, Michael (2008) 'Ofcom's judgement failed to address the key question:
 was this programme accurate?' *The Independent* (22 Jul).
- McClure, Robert and Lisa Stiffler (2007) 'Federal Way schools restrict Gore film'
Seattle Post Intelligencer (11 Jan): A1.
- Mellor, Felicity (2003) 'Between fact and fiction: demarcating science from non-
 science in popular physics books' *Social Studies of Science* 33(4): 509-538.
- Monbiot, George (2008) 'A crusade against science' *The Guardian* (22 Jul): 7.
- Moore, B. and M. Singletary (1985) 'Scientific sources' perceptions of network news
 accuracy' *Journalism Quarterly* 62: 816-823.
- Mykura, Hamish (2008) 'It's not us who make the public sceptical on climate change'
The Guardian (23 Jul): 31.
- New Scientist* (2008) 'Controversial global-warming TV programme let off the hook'
New Scientist 199(26 Jul): 7.
- Nichols, Bill (1991) *Representing Reality* Bloomington: Indiana University Press.
- Nichols, Bill (2002) *Introduction to Documentary* Bloomington: Indiana University
 Press.
- Ofcom (2005) *The Ofcom Broadcasting Code*
<http://www.ofcom.org.uk/tv/ifi/codes/bcode/>.
- Ofcom (2008) *Ofcom Broadcast Bulletin* 114(21 Jul).
- O'Neill, Brendan (2007) 'Apocalypse my arse' *Spiked* (9 Mar) [http://www.spiked-
 online.com/index.php?/site/article/2948/](http://www.spiked-online.com/index.php?/site/article/2948/).

- Rive, Nathan, Brian Jackson and Dave Rado (2007) 'Complaint to Ofcom regarding "The Great Global Warming Swindle"' Final revision (11 Jun)
<http://www.ofcomswindlecomplaint.net/FullComplaint.pdf>.
- Shepherd, John and Chris Rapley (2007) 'Al Gore versus Mr Justice Barton: a personal evaluation' (12 Oct)
<http://www.cpi.cam.ac.uk/gore/pdf/Al%20Gore%20versus%20Mr%20Justice%20Barton1.pdf>.
- Schmidt, Gavin and Michael Mann (2007) 'Convenient untruths' *RealClimate* (15 Oct) <http://www.realclimate.org/index.php/archives/2007/10/convenient-untruths/>.
- Singer, E. (1990) 'A question of accuracy: how journalists and scientists report research on hazards' *Journal of Communication* 40(4): 102-116.
- Smith, Lewis (2007) 'Gore's inconvenient judgment' *The Times* (11 Oct): 3.
- Sun* (2007) 'Climate alert "lie"' *The Sun* (5 Mar): 22.
- Tankard, J.W. and M. Ryan (1974) 'News source perceptions of accuracy of science coverage' *Journalism Quarterly* 51: 219-225, 334.
- Tichenor, P.J., C.N. Olien, A. Harrison and G.A. Donohue (1970) 'Mass communication systems and communication accuracy in science news reporting' *Journalism Quarterly* 47: 673-683.
- Wolf, Mark J. P. (1999) 'Subjunctive documentary: computer imaging and simulation' in Jane M. Gaines and Michael Renov (eds) *Collecting Visible Evidence* Minneapolis: University of Minnesota Press, 174-291.