



Simon Cottle
General Editor

Vol. 5



PETER LANG

New York • Washington, D.C./Baltimore • Bern
Frankfurt am Main • Berlin • Brussels • Vienna • Oxford

Climate Change and the Media

EDITED BY
Tammy Boyce & Justin Lewis



PETER LANG

New York • Washington, D.C./Baltimore • Bern
Frankfurt am Main • Berlin • Brussels • Vienna • Oxford

different editorial responsibilities. (FUTERRA Sustainability Communications, 2005)

At a time when some parts of the media are still having difficulty in managing the tension between accuracy and impartiality, such a tactic was likely to be viewed with suspicion by many journalists. Hence a debate about the role of the BBC in reporting climate change and other environment issues generated the following response from Peter Barron (2007), editor of BBC television's *Newsnight* programme:

There's currently huge interest among the public in leading more sustainable lifestyles and we should reflect and explore that....But I don't think it's the BBC's job to try to save the planet.

By contrast, Lynas (2007) made the counter-argument for journalists to be co-opted: "If more of today's media commentators can summon up the courage to help defend the planet, even against the powerful vested interests that continue to profit from its destruction, then maybe the coming holocaust of global warming can be averted without such a deep and bitter conflict."

While some parts of the UK media, such as *The Independent* newspaper, clearly do regard it as their role to campaign for action on climate change (Ward, 2008b), most journalists are likely to be unwilling to sacrifice their profession's notions of impartiality.

Conclusions

The public debate about climate change has reached a watershed moment in the UK, with the overwhelming majority of the public accepting that a problem exists and that solutions are needed. This stage has been reached to a large extent through media coverage driven by campaigns from scientists, environmental organisations, and policy makers.

However, it is less clear what role media campaigns should play in the next stage of the public debate. These campaigns need to shift their emphasis away from warning of the potentially serious consequences of climate change, to creating advertising campaigns that make public participation in tackling greenhouse gas emissions seem desirable. Such a shift in emphasis is likely to be uncomfortable both for campaigners and journalists, who will need to tread warily around the issues of accuracy and impartiality in the media.

CHAPTER 6

The Climate Change Docudrama

Challenges in Simultaneously Entertaining and Informing Audiences

■ Grace Reid

Most people's first encounter with formal instruction and explanation of science takes place in the classroom. However, outside of the classroom, popular media are playing a role in public understanding of science, especially in the area of climate change knowledge (Stamm, Clark, & Eblacas, 2000: 230). This has caused social science researchers to become interested in studying media representations of climate change because they believe that it will lead to a better understanding of how these representations affect public perceptions of climate change and related scientific policy. In particular, a significant amount of academic attention has focused on how climate change is depicted in news media, with most of these studies focusing on newspapers (e.g., Carvalho, 2007; McComas & Shanalian, 1999; Trumbo, 1996; Wilkins, 1993; Zehr, 2000), and a few also examining broadcast news (e.g., Bell, 1994; Boykoff, 2008a). There are hardly any studies that consider how ideas and images about climate change are produced, represented, or received in entertainment media.

Kirby (2003: 262) writes, "Given the enormous audience for fictional films and television, it is important to broaden our conception of 'public understanding of science' to include fictional entertainment media." In response to this agenda, there have

been three studies about the Hollywood climate change blockbuster *The Day After Tomorrow* (Emmerich, 2004). Perkowitz (2007) looks at how climate change is presented in *The Day After Tomorrow* film text, while Leiserowitz (2004) and Lowe et al. (2006) use survey and focus group methods to understand how the film affects public perceptions of climate change.

In line with this research on entertainment media, this chapter focuses on the climate change drama *Burn Up* (Madha, 2008). *Burn Up* is a two-part television miniseries that follows a high-powered CEO of an oil company, as he struggles to come to terms with the impact that fossil fuel emissions have on world climate change. It is written by Simon Beaufoy, who is best known for writing the Oscar-winning film *The Full Monty* (Cattaneo, 1997), and features renowned actors such as Bradley Whitford, who played the character of Josh Lyman in the television series *The West Wing* (Schlamme, 1999). The programme was a 15-million dollar, joint UK/Canadian production that was broadcast on BBC Two in July 2008, and on Canadian Global Television in June 2008. It averaged 1.98 million viewers over the course of two nights on BBC Two, but only garnered an average of 381,000 viewers on Global.

The press material promoted *Burn Up* as a political thriller or a drama; however, the programme can also be classified as a docudrama, in order to emphasize the extensive research that forms the foundation of the drama. The docudrama is a genre that combines documentary research with dramatic conventions, while consistently prioritizing the drama (Paget, 1998: 112, 157). Most people think of docudramas as films that dramatise events from history or life stories of famous historical figures. However, Paget (1998: 61) says that docudramas can also "portray [current] issues of concern to national or international communities in order to provoke discussion about them." *Burn Up* meets the requirements for this third type of docudrama. Tom Cox (personal communication, 2008), one of *Burn Up*'s executive producers, said:

I still talk to people who either question the reality of climate change or, if they are willing to accept that it exists, question that it is caused by human actions. So, I think that in addition to entertaining audiences, the goal of this film was to shed light on the issue of climate change, and encourage audiences to examine their own view of it.

Having classified *Burn Up* as a docudrama, this chapter turns to exploring the difficulties associated with producing a programme about climate change that is both dramatic and informative. It begins by offering a detailed description of *Burn Up*, followed by an explanation of the chapter's research methods. The chapter then identifies six key challenges that the *Burn Up* production team encountered in creating a climate change docudrama, and concludes by reflecting on what these findings mean for the docudrama genre.

Programme Description

Burn Up is a two-part docudrama set approximately one year in the future. Part 1 opens in the Saudi desert, where all but one member in a team of British geologists

are shot and murdered. The surviving geologist, Masud Kamil, manages to escape with valuable data.

Back in London, the plot alludes to the fact that these murders have some connection to the resignation of Arrow Oil's CEO Sir Mark Foxbay, who is succeeded by his young son-in-law, Tom McConnell. During a party to celebrate Tom's new position, an Inuit woman (who is a climate change scientist and activist) interrupts the festivities to hand Tom a writ. The writ demands that Arrow Oil accept responsibility for the burning of fossil fuels, which releases carbon dioxide (CO₂) into the atmosphere and, in turn, increases the earth's atmospheric temperature. According to the writ, the warming has had a detrimental effect on the Inuit's livelihood (e.g., seals have moved north and hunters have fallen through melting ice never to be seen again).

In short, "They're trying to pin global warming on us!" says Tom. Tom and his best friend, James Mackintosh (aka Mack), a pro-oil lobbyist, discuss plans to deal with the writ. Mack decides that the best way to proceed is to discredit the science of global warming at the upcoming US Senate hearings on climate change. It seems this strategy is successful because the writ is eventually thrown out of court. In response to the court's decision, the Inuit woman who initiated the writ douses herself in gasoline and lights herself on fire. The woman's death causes Tom to question his commitment to the oil industry. He begins to investigate the science of climate change, and even has an opportunity to witness how melting permafrost releases methane (a greenhouse gas 20 times more powerful than CO₂) into the atmosphere. Tom is finally persuaded that something must be done about climate change; however, it is after he begins an extramarital affair with Arrow Oil's Head of Renewables, Holly Dernay.

As Tom begins to have a change of heart, the geologist who escaped the murders in Saudi Arabia resurfaces in London. Masud is anxious to get rid of the data for which he was nearly killed. He therefore contacts the former CEO of Arrow Oil (who commissioned the data) in an attempt to return it to its rightful owner. The meeting between the two goes awry, however, when the former CEO is intentionally hit and killed by an unknown vehicle.

In the second part of the drama, Tom's newfound passion for saving the environment takes him to Calgary for the Kyoto 2 Summit. In Calgary, Tom works secretly with the environmental groups to get the United States to commit to CO₂ emission cuts, because the US is responsible for approximately a quarter of the world's CO₂ emissions. However, Tom's actions are undermined by best friend Mack, who is scheming for the Open Business Coalition.

During the summit, geologist Masud approaches Tom and Holly in order to turn over the elusive data, which contain evidence that there is virtually no oil left in the Saudi desert. Together, Tom and Holly debate whether or not to release the data, but eventually Tom decides not to go public with the data because he worries that the information will generate oil wars and send the world economy into a free fall. Holly, however, disagrees with this decision. She therefore takes it upon herself to use the data to blackmail the US government into signing the Kyoto 2 agreement. Holly threatens to release the data if the United States does not sign. Unfortunately for

Holly, though, the United States does not respond well to blackmail, and one of the operatives for the Open Business Coalition murders Holly to prevent her from releasing the data (this same group is also responsible for the murders of the geologists and the former Arrow Oil CEO). Holly's death leaves Mack disillusioned with his role in the coalition.

The Kyoto 2 Summit ends with an announcement that the United States will not sign the agreement. Following this announcement, Tom and Mack have an intense confrontation where they ultimately decide that releasing the data is the only way to change the world's reliance on oil and save the climate. Mack therefore betrays the Open Business Coalition and releases the data. The docudrama ends by painting a gloomy picture of the world, as governments and citizens struggle to come to terms with the idea that peak oil was yesterday.

Research Methods

This chapter uses a combination of interview, focus group, and programme analysis methods. Four hour-long interviews were conducted with key members of the *Burn Up* production team:

- Simon Beaufoy: *Burn Up* writer
- Christopher Hall: *Burn Up* producer (Kudos Film and Television)
- Tom Cox: One of *Burn Up*'s executive producers (Seven24 Films)
- Dr. Joe Smith: *Burn Up* scientific consultant (Open University)

In addition to the interviews, two focus groups were also organised with natural and social scientists who research climate change at the University of Alberta. There were five scientists in each group (see Tables 1 and 2 below for further information about participants). The scientists were identified through the university Web site and were contacted to participate through cold call e-mails. Prior to the focus groups, each scientist was mailed a copy of *Burn Up* and asked to view it in preparation for the group. During the focus groups, participants spent an hour discussing the *Burn Up* docudrama. The goal of these groups was to understand scientists' ideas and opinions about the *Burn Up* docudrama.

Challenge One: Finding the Drama in Climate Change

One of *Burn Up*'s executive producers, Tom Cox, said that in order to grab audiences interested in climate change, "you first have to make sure that the programme is dramatic, entertaining and engaging." This presented a major challenge for the production team, who quickly came to the conclusion that while the topic of fossil fuel CO₂ emissions is important, it is also "highly undramatic." *Burn Up* producer Christopher

Hall (personal communication, 2008) summed up the challenge best when he asked, "How do you make a sexy drama about a gas that you can't see or smell?" Simon Beaufoy, the writer of *Burn Up*, eventually answered this question by finding drama in the political scheming that takes place behind the scenes of climate change CO₂ debates.

Burn Up therefore highlights the dramatic ways that scientists and environmentalists try to put climate change on the agenda, as well as the astounding ways that industry tries to undermine this agenda. For example in the *Burn Up* programme, one way that the scientific and environmental side tries to garner support for climate change is through the actions of the Inuit woman who initiates a writ against Arrow Oil. This woman shocks audiences when she later lights herself on fire in an effort to draw further attention to her cause. Drama can also be found in the way that industry's chicanery is revealed in *Burn Up*. Throughout the programme, industry engages in both minor and major transgressions to undercut the scientific/environmental agenda. For instance, pro-oil lobbyist Mack digs up information about an alleged affair to discredit a Royal Society climate change scientist. The Open Business Coalition also murders geologists, as well as the former Arrow Oil CEO and Holly, in order to prevent the release of data about Saudi's oil deposits. Although these events create a significant amount of drama, the *Burn Up* production team said that it is more than just this exciting plot that makes *Burn Up* engaging. It is also the intriguing characters, interesting dialogue, exotic locations, and the employment of big name actors that make the programme dramatic (Hall, personal communication, 2008).

Burn Up's scientific consultant, Dr. Joe Smith, said that he was pleasantly surprised by the amount of drama that the production team was able to generate in the final product:

If someone had said to me at the beginning of last year that I would work on a major BBC Two drama centring on United Nation climate change negotiations, I would have said, "No thanks!" I mean I can't imagine a less promising prospect; I've been to those proceedings and they're dire. So I think that the show's biggest achievement was giving dynamism to the issue of climate change.

Most of the climate change scientists in the focus groups agreed with Dr. Joe Smith's belief that the *Burn Up* production team successfully found the drama in climate change. However, not all of the focus group participants did. Taylor¹ (Focus Group 1) said:

I would say that the producers haven't done their job because the drama isn't really entertaining. There is not enough interesting character development and there's not enough action. I mean I had to wait three hours before Holly was killed off.

While some of the other participants were willing to agree that there was some "canned Hollywood drama," such as the extramarital affair, they also acknowledged

1 Focus group participants' names have been changed to protect their confidentiality.

that they enjoyed these dramatic events. Mario (Focus Group 1) said, "I disagree with you Taylor. I watched it with my wife and we found it quite entertaining."

Challenge Two: Ensuring the Drama Has a Foundation in Reality

While the docudrama genre prioritises the dramatic aspects of the programme, it is still important that the programme has a strong underpinning in real-life science and policy. Writer Simon Beaufoy said:

We went to incredible lengths to ensure that the programme was grounded in reality....I didn't want it to be rejected as science fiction. It's all too easy [for audiences] to say, "It's science fiction and it has nothing to do with me." This creates an emotional disconnect, where suddenly audiences don't have a responsibility to do anything about climate change.

In order to ensure that the film was "grounded in reality," Simon Beaufoy began researching various angles of climate change four years before the docudrama was broadcast. This involved reading books about climate change, attending climate change conferences, and talking to people on all sides of the climate change issue (e.g., scientists, environmental groups, policy makers, and oil executives). A scientific consultant was also hired to ensure that the science and policy in *Burn Up* were plausible. According to producer Christopher Hall, each piece of information was double and triple checked.

The production team's attention to detail seems to have paid off, because the climate change scientists who participated in the focus groups were for the most part very impressed with the accuracy of the climate change information. Taylor (Focus Group 1) said that the production team did an "extremely good job" of conveying the science and policy. Another scientist said that he could find a "kernel of truth" in each part of the programme (Focus Group 2). However, while some participants acknowledged the accuracy of the research, many also felt that there could have been more information in the docudrama and that the information presented was sometimes overdramatized (these ideas will be discussed further below).

Challenge Three: Climate Change Fact Catching Fiction

Having carried out the extensive research that is required for a docudrama, the production team subsequently had to adapt the facts into believable fiction. To make sure that the programme didn't become full-fledged science fiction, the production team set the docudrama in the very near future. Unfortunately, this meant that the reality of climate change was constantly catching up to the fiction that they had created.

Producer Christopher Hall said, "when Simon Beaufoy started writing [the script] a lot of people said, 'This is all science fiction,' but one by one, almost everything he wrote proved true." In terms of practical considerations, this meant that the production team was constantly forced to amend their projections in the script.

For example, the script underwent several revisions with regard to the price of oil. Simon Beaufoy's first draft put the price of oil at 69 dollars a barrel. However, by the time the production team was ready to shoot, the price of oil was already at 80 dollars a barrel. The production team therefore decided to set oil at 98.12 dollars a barrel in the final programme. "We were worrying about 98 dollars a barrel, which at the time was very high," said scientific consultant Dr. Joe Smith. "We had to ask ourselves, 'Could we really imagine it going that high? Would the audience find it improbable?' And of course by the time it was screened, oil was at 125."

Another example of fact and fiction merging was the scene where the Inuit woman serves the head of Arrow Oil with a writ. This scene was already shot when in real life an Alaskan Inuit village filed a lawsuit against 24 oil, power, and coal companies in February 2008. Similar to the writ in *Burn Up*, the Alaskan lawsuit claims that these companies should be held responsible for releasing the greenhouse gases that have caused climate change and thereby affected the village's traditional way of life (Hagens Berman Sobol Shapiro, 2008). This real-life development meant that the production team had to check with its lawyers to ensure that they were still legally safe to broadcast the scene. As Paget (1998: 36–60) points out, films that reflect reality too closely can be a legal minefield.

A final example of fact catching fiction occurred in relation to the science about methane release. Methane is a greenhouse gas that has a significantly more powerful impact on the climate than CO₂. In the *Burn Up* script, climate change causes a lake to warm, melting the permafrost on the lake's floor. This melted permafrost then releases methane, which bubbles to the lake's surface but remains trapped as long as the lake's surface is frozen. Characters Tom and Holly release this methane however, when they chip a hole in the ice and light a match. The match sets the invisible methane on fire, causing a fairly substantial burst of flames. This scene provides Tom and Holly with evidence that climate change is happening.

Burn Up's scientific consultant Dr. Joe Smith and executive producer Tom Cox both admitted that when they read the script, they were very sceptical about the way this scene was written. However, just before the production team went to shoot the scene, the BBC broadcasted a documentary where a geologist in Siberia did the exact same experiment that writer Simon Beaufoy had described in the script. In this particular situation, fact catching fiction actually proved beneficial because the production team was able to show the documentary footage to their special effects technicians, who were then able to re-create the same experiment in *Burn Up*.

A number of the climate change scientists in the focus groups, however, still felt that the science in this scene was far-fetched. Josh (Focus Group 2) was not convinced that the flame would be that large, while Seth (Focus Group 2) just felt it was bad science, "I was thinking gosh this is a horrible experiment. They didn't go there ten

years ago to see if the methane was burning, so has this actually changed or was it something that was always there?" Despite these criticisms, all four members of the *Burn Up* production team stand by the science in this scene. Although, they did concede that the docudrama downplays the actual distance that the characters would have needed to drive in order to reach a point where they could find methane release.

Challenge Four: Communicating the Degree of Scientific Consent and Dissent in Climate Change Science

After addressing the issue of fact catching fiction, the *Burn Up* production team's next challenge came in deciding how to represent diverging scientific opinions in the climate change debate. Several studies (e.g., Boykoff & Boykoff, 2004; Boykoff, 2008a; Zehr, 2000) examining US news coverage of climate change suggest that reporters often overemphasize the disagreement associated with climate change. One way that reporters do this is through the use of the journalistic principle of "balance," which advocates that both sides of an issue are given equal attention in media coverage. However, this is problematic when scientific consensus is juxtaposed against a small number of sceptics, as is often the case with climate change science. The 2007 Intergovernmental Panel on Climate Change (IPCC) concluded that mainstream scientists believe that climate change is occurring and that they are more than 90 per cent certain that increases in anthropological activities are causing it (Bernstein et al., 2007: 27, 39). Consequently, giving equal weight to those who support climate change and those who deny it actually leaves readers with a biased and inaccurate picture of climate change (Boykoff & Boykoff, 2004). Wilson (2000b: 11) writes, "Perhaps a modification of the journalistic tenet to find 'balance' in every story would be beneficial in climate change reporting, and perhaps all scientific reporting.... Quality reporting on climate change needs to portray the scientific consensus and dissent accurately."

The docudrama does not have the same obligation to balance as do news media. However, several members of the production team said that the fact that *Burn Up* was funded and broadcasted by the BBC did place some restrictions on the team in terms of balance. Writer Simon Beaufoy said:

I was in favour of the science being absolutely fact checked and correct, but the more we did that, the more the BBC got frightened of its documentary sense. Because as soon as it starts to be factual, they have an extremely complex and rigorous remit about factual material and its bias.

The BBC's caution in this matter was no doubt emphasized by the fact that Channel 4 was heavily criticised for broadcasting *The Great Global Warming Swindle* (Durkin, 2007), because a number of scientists felt that the documentary misled audi-

ences by arguing against the anthropological causes of climate change, which Ward explores further in chapter 5. The BBC's concern about the appearance of bias did place some limitations on the *Burn Up* script in terms of balance. For example, producer Christopher Hall talked about how the original script described one of the women in the Open Business Coalition as a sexual predator with bad teeth, but the BBC came back and said that a climate change sceptic "shouldn't be portrayed as a sexual predator with bad teeth." Consequently, the production team amended this part of the script.

Despite these changes however, the BBC did allow *Burn Up* to present a persuasive case in favour of climate change and its anthropological origins. The docudrama presents both sides of the climate change debate, while still managing to convey the idea that climate change is happening and is caused by human activities. To do this, the *Burn Up* production team linked the belief that climate change is occurring to protagonists Tom and Holly, with whom audiences are likely to identify. Sceptical attitudes about change attitudes, though, are held by the antagonists of the film, and even these characters admit that they only deny that human actions are causing climate change to protect their business interests.

For these reasons, the climate change scientists in the focus groups felt that *Burn Up* did an excellent job of accurately conveying the scientific consent and dissent associated with climate change. One climate change scientist worried, however, that "lay" audiences might still buy into the idea that human actions are not responsible for climate change, even though the idea is clearly discredited in the docudrama. He therefore felt that the producers should not have presented this line of reasoning in the film.

Challenge Five: Conveying the Uncertainty of Climate Change Science

While there is consensus that climate change is happening and that increases in anthropological activities are causing it, there is still some uncertainty surrounding the degree and speed of climate change (Bernstein et al., 2007). This uncertainty presented a challenge for the *Burn Up* production team, in terms of how they would present the science of climate change.

Writer Simon Beaufoy described how the production team dealt with uncertainty when presenting scientific figures:

I'm sure you know that projections have a low and high range, so we always chose the middle range to be safe. We didn't want to make any outrageous statements that couldn't be backed up or seemed to be hysterical.

Having selected the middle range projection, Simon Beaufoy was then careful to word the projections in such a way that it would be clear to audiences that it was a scientific estimate as opposed to a scientific fact. The best example of this occurs in

the scene where a Royal Society scientist, Sir Richard Langham, is trying to convince a British political servant of the severity of climate change. The scientist says, "It seems likely that by 2030 there won't be any summer sea ice in the arctic at all." Later in the conversation the scientist says, "Even a conservative estimate makes that a global rise in sea level of about 78 centimetres by the end of the century." Sir Richard then lists several places, such as Bangladesh and Miami, which would be flooded due to this rise in sea level. He concludes the conversation by saying, "I think we've got between five and 10 years before the warming becomes unstoppable." In this scene, the use of words such as "it seems likely," "estimate," and "I think" convey the idea that there is uncertainty associated with these projections.

One of the scientists in the focus groups mentioned this scene during the discussion. Seth (Focus Group 2) said:

I think the Royal Society scientist had a good strategy for addressing the little waves of uncertainty that can accompany scientific data. The scientist character would say things like, "We can't say with complete certainty," and I thought that those types of phrases allowed him to address the issue of uncertainty in science without overemphasizing it.

In contrast, Cindy, another scientist in this group, overlooked the way Sir Richard uses language in this scene to subtly convey the uncertainty associated with climate change. Consequently, she felt that this part of the docudrama presented the science of climate change as quite certain. Cindy (Focus Group 2) said, "I thought the leading scientist was quite deterministic in the way he talked about the effects of climate change. I mean he talked definitively about the way that various countries and cities would flood." She went on to explain that she felt that this certainty "was absolutely appropriate for a television show, because a show should target viewers' emotions and get them to go 'Wow.'" She concluded by saying that the docudrama's message about the impact of climate change "would not have been as powerful if the scientist had said, 'Well, there's an 80 percent chance that Bangladesh will be underwater, and there's a 60 percent chance New Orleans will be underwater.'"

In another scene later in the *Burn Up* docudrama, the production team manages to further communicate the uncertainty associated with climate change science. This occurs during the scene where Senate hearings on climate change take place. The scene is noteworthy because it not only expresses the idea that there is uncertainty in climate change science but also the notion that groups who refuse to recognise the validity of climate change often use uncertainty to undermine the scientific agenda. For example, before Tom (who at this point of the film is still pro-oil) enters the Senate hearings to testify, his friend Mack chides, "Remember, doubt is our friend." During Tom's testimony, he says:

You've asked me whether I am absolutely certain of the effects of carbon dioxide on the planet's temperature. [pause] No. And we absolutely need to be, because if you're certain and I mean really certain then we have to stop burning oil. And that means no driving, no flying, no heating our hospital, day care centres, schools. You have to be very very sure of your science to do that. Are we?

In this speech, Tom emphasizes the uncertainty as a way to give the committee an opportunity to reject climate change, so that they can then keep the luxuries to which people have become accustomed.

Tom's testimony is later followed by Sir Richard's deposition. At one point the scientist says, "It is my fear and my belief that this cycle could cause an irreversible warming situation. As far as I know the first time humanity has ever faced such a possibility." In response to this statement, a senator who is on the committee and also in the pocket of big oil says, "Belief and fear and possibility. I must admit that I was hoping for something a little more scientific from the author of the Langham reports, Sir Richard. [pause] A little more certainty." The scientist replies, "This is a projection, a scientific projection based on NASA's temperature data. By the time you have certainty, the water will be lapping at our feet." The senator retorts, "Projections, they're notoriously unreliable aren't they? I mean my broker's forever making them and he hasn't got a damn one right yet!" This comment causes the room to erupt in laughter, and with that, the senator has rather successfully played on the uncertainty associated with climate change science to undercut the scientist's testimony.

One of the focus groups discussed how this scene in *Burn Up* skilfully dealt with the uncertainty of climate change:

Seth: One thing I did like was when the programme used the hearing to show how scientific uncertainty can be used to belittle scientific data. I think that was quite a realistic portrayal of how science is used by climate change sceptics.

Tony: Yes, the show managed to get across the idea that uncertainty can be used against science, as opposed to [the idea that] science is inherently uncertain. The show didn't spend time discussing the true scientific uncertainty of the research [interrupted].

Cindy: And I think that's fine. I don't think that uncertainty is something that should have been emphasized in the movie.

Josh: I agree. Most scientists aren't really bothered by uncertainty. It just reflects the limits of our knowledge and uncertainty typically decreases over time. (Focus Group 2)

The scientists therefore concluded that *Burn Up* manages to go beyond presenting climate change science through a frame of uncertainty (as is common in newspaper coverage), in order to address some of the ways that uncertainty can be used to undermine that scientific agenda.

Challenge Six: Striking the Right Compromise between Documentary and Drama

The *Burn Up* production team's final challenge came in deciding how much documentary and how much drama should be included in the programme. Too much documentary and *Burn Up* would have resembled a science lecture; too much drama and

it would have become *The Day After Tomorrow*, which has been criticised for its unrealistic portrayal of climate change (e.g., Perkowitz, 2007: 88–89). “It’s a tricky balance,” said Tom Cox, an executive producer for *Burn Up*. “Are we ever one hundred percent successful? I doubt it, but I actually think that this is one of the programmes that comes pretty close.” He went on to explain:

There may not be enough facts for a rigorous scientist...but for normal audience members I think there is enough fact that they can go, “Hmmm, I believe that this is a real issue that I should consider,” and strong enough fiction that they are immersed in the characters, story and drama until the end.

Tom Cox was certainly right in his assumption that there were not enough facts in the *Burn Up* drama to satisfy climate change scientists. The scientific consultant, Dr. Joe Smith, talked about how there were some changes that he might have made to the script if it had been left entirely up to him. For example, he would have liked to have seen the Inuit woman, who was supposed to be a scientist, actually doing some science in the programme. He also would have softened the representation of American big business as the bad guys. Although, he did achieve a modest victory on that front, when he convinced the production team to acknowledge in the script that there are opportunities for oil executives to become investors or leaders in renewables. There is therefore a brief moment in *Burn Up* where Tom tries to convince the board of Arrow Oil to invest in renewables when he says, “China’s already produced its first solar billionaire, do I see any oil billionaires in the room?”

This sort of give and take between a scientific consultant and other members of the production team has been well documented in other production studies of science films. Kirby (2003: 268) writes:

Although they may be authors on the film, it would be naive to believe that scientists have as much control over the science in a film as the director or the production designers have...often times “scientific accuracy” takes a back seat to issues of filmability, budget, and drama.

This was one of the biggest surprises to Dr. Joe Smith, who said that his involvement with *Burn Up* taught him just how little science and scientific policy you can get into a science docudrama. Although, Dr. Joe Smith was quick to acknowledge that he could see why the producers did not take all his advice onboard. “I would write a very poor drama,” he said. Then he explained that he understood that the producers did not have time to show the Inuit woman conducting science experiments, and that the caricature of big business produced a strong antagonist that is a requirement for a good drama. Rosenstone (2003: 338) has also argued that stereotypes, such as the one of big business in *Burn Up*, are “part of the way film delivers its messages. The realities of the world are pretty messy. Stereotypes simplify the world and its issues... if you want depth psychology, go to the novel but certainly not the film.”

Like Dr. Joe Smith, many of the climate change scientists in the focus groups also felt that there was not enough fact in the programme. “I think there was maybe only five minutes of science in the whole movie,” said Josh (Focus Group 2). These scientists were also quick to give their ideas about where more fact could have been added

to the script. However, as the list grew longer in both groups, one or two people would suddenly recognize that they had turned *Burn Up* into a documentary as opposed to a docudrama. Three of the scientists seemed to realise that “the point of fictional media is not to devise accurate/educational communications about science, but to produce images of science that are entertaining” (Kirby, 2003: 236). Cindy (Focus Group 2) said:

I don’t think this type of show is the right vehicle for educating people about climate change. I think it’s an opportunity to get people interested and thinking about climate change and then hopeful they’ll go and get educated about climate change from somewhere else.

In response to this comment, another participant in the group suggested that *Burn Up* might peak audience interest in seeing Al Gore’s documentary *An Inconvenient Truth* (Guggenheim, 2006).

Conclusion

As this chapter has shown, the *Burn Up* production team faced a number of challenges in creating a climate change docudrama that would both entertain and inform audiences. Some of the challenges that the *Burn Up* production team encountered were similar to those tackled by producers of a purely entertainment genre (i.e., trying to generate drama and excitement for a complex subject such as climate change). Whereas others were more closely associated with producing a factual genre (i.e., ensuring the facts have been accurately researched, communicating the degree of scientific consent/dissent, and conveying the uncertainty associated with climate change science). However, there was also a category of challenges that were unique to the docudrama genre. For example, the predicament of fact catching fiction and the difficulty of making a programme that has the perfect combination of drama and documentary are two production challenges that can only be found in a genre that merges both fact and fiction. These findings suggest that creating a docudrama presents more challenges than those encountered when producing an exclusively fictional or an exclusively factual genre.²

This chapter has viewed several of the efforts that the production team undertook to resolve these challenges, and described the impact that these production decisions had on the final *Burn Up* script. On the one hand, the *Burn Up* production team helped to guarantee that the docudrama had a strong grounding in reality by hiring a scientific consultant who verified that the script’s scenario was scientifically plausible. On the other hand, the producers overcame the difficulty of conveying the uncer-

2 Haran and colleagues (2008) and Hill (2007) claim that it is difficult to find an exclusively fictional or factual genre because the boundaries between fact and fiction are merging within genres. While this may be true, there are still genres such as films that are considered to be entertainment media, and other genres such as documentaries and news that are typically classified as factual media.

tainty associated with climate change by using phrases such as "it seems likely" and "I think" to describe the uncertainty associated with scientific projections. The production team also used the Senate hearing scene to show how climate change sceptics can overemphasize uncertainty, in order to undermine the validity of scientific projections. This scene shows how the *Burn Up* production team often had to be creative in resolving production challenges.

The focus groups gave climate change scientists an opportunity to view the docudrama, and weigh in on whether or not the production team was successful in resolving the dilemmas that it faced. The scientists in the focus groups were often in disagreement about how a climate change docudrama should be portrayed. For example, while most participants were pleased with the amount of drama in the programme, a couple of people felt that *Burn Up* was lacking sufficient drama and excitement to entertain audiences. Similarly, while the majority of scientists thought that *Burn Up* did a good job of weighing both sides of the climate change debate, one scientist worried that the programme's introduction of arguments that discredit climate change science could have a negative effect on audiences' perceptions of climate change. Many of the scientists also wanted to see more factual information in *Burn Up*, while a few of the scientists understood that "films do not re-create the world on screen, but deal instead with certain kinds of proximities" (Rosenstone, 2003: 338). These findings indicate that perhaps the ultimate challenge of the docudrama genre, and indeed any media form, is creating a programme that satisfies the diverse expectations of various audiences. While it is not possible to create a programme that meets everyone's needs, docudrama producers must still make every effort to generate a programme that leaves the majority of viewers both entertained and better informed.

Table 1: Focus Group 1: University of Alberta Climate Change Scientists

Participants	Sex	Academic Rank	Department	Research Area
Participant 1	F	Postdoctoral Researcher	Renewable Resources	Impact of climate change on Douglas-fir growth
Participant 2	M	Professor	Earth and Atmospheric Sciences	Role of sea ice in climate change
Participant 3	M	Professor	Earth and Atmospheric Sciences	Paleoclimate and long-term climate evolution
Participant 4	M	Assistant Professor	Renewable Resources	Impact of climate change on insects

Participant 5	F	Postdoctoral Researcher	Renewable Resources	Impact of climate change on Douglas-fir growth
---------------	---	-------------------------	---------------------	--

Table 2: Focus Group 2: University of Alberta Climate Change Scientists

Participants	Sex	Academic Rank	Department	Research Area
Participant 1	M	Professor	Renewable Resources	Impact of climate change on terrestrial ecosystems
Participant 2	F	Associate Professor	Rural Economy	Social impact of climate change
Participant 3	F	Associate Professor	Rural Economy	Environmental and energy policies that support oil dependency
Participant 4	M	Associate Professor	Biological Sciences	Impact that animal grazing has on climate change
Participant 5	M	Professor	Biological Sciences	Landscapes' release of greenhouse gases

Bibliography

- Adam, D. (2007, 27 January). US answer to global warming: Smoke and giant space mirrors. *The Guardian*.
- Adam, D. (2008, 28 May). Exxon to cut funding to climate change denial groups. *The Guardian*. www.guardian.co.uk/environment/2008/may/28/climatechange.fossilfuels (accessed 30 May 2008).
- Ader, C. R. (1995). A longitudinal study of agenda setting for the issue of environmental pollution. *Journalism and Mass Communication Quarterly*, 72(2), 300–311.
- Age, The. (2006). Murdoch u-turn on climate. www.Theage.Com.Au/news/world/murdoch-uturn-on-climate/2006/11/07/1162661648576.html (accessed 8 July 2008).
- AIDMI. (2008). Asian media and civil society unite to influence global climate policy. *Thomson Reuters AlertNet*. www.Alertnet.org/thenews/fromthefield/219824/12161253327.htm (accessed 18 July 2008).
- Allan, S. (2002). *Media, risk and science*. Buckingham: Open University Press.
- Allan, S., Adam, B., & Carter, C. (eds.). (2000). *Environmental risks and the media*. London: Routledge.
- Althusser, L. (1971/2001). *Lenin and philosophy and other essays*. New York: Monthly Review Press.
- Anders, G. (2008, 14 May). Carbon-Market concept moves mainstream. *The Wall Street Journal*, p. B2.
- ANDI. (2008). *Climate change in the Brazilian press: An analysis of 50 newspapers from July 2005 to June 2007*. www.8ci.org.Br/_pdfs/MudancasClimaticas.pdf (accessed 8 August 2008).
- Anderson, A. (1997). *Media, culture and the environment*. London: Routledge.

- Anderson, B. (1991). *Imagined communities: Reflections on the origin and spread of nationalism*. London: Verso.
- Anderson, R. B., Atwater, T., & Salwen, M. B. (1985). Media agenda-setting with environmental issues. *Journalism Quarterly*, 62(2), 393–397.
- Andreadis, E., & Smith, J. (2007). Beyond the ozone layer. *British Journalism Review*, 18(1), 50–56.
- Anon. (1969). Smoking and health proposal. p. 4. Bates no.: 690010951–690010959. <http://tinyurl.com/5k4ha2> (accessed 27 April 2009).
- Antilla, L. (2005). Climate of scepticism: US newspaper coverage of the science of climate change. *Global Environmental Change*, 15(4), 338–352.
- Arias-Maldonado, M. (2007). An imaginary solution? The green defence of deliberative democracy. *Environmental Values*, 16(2), 233–252.
- Arnheim, R. (1969). *Film as art*. London: Faber & Faber.
- Australian, *The*. (2007a, 6 March). End of the beginning for Labor and Rudd. p. 13.
- Australian, *The*. (2007b, 7 March). Nuclear reaction. p. 15.
- Avian/Communication Tower Collisions. (2004, 30 September). Prepared for Federal Communications Commission by Avatar Environmental, LLC, West Chester, PA.
- Baker, C. (1994). *Advertising and a democratic press*. Princeton: Princeton University Press.
- Balibar, E. (1991). The nation form: History and ideology. In E. Balibar & I. Wallerstein (Eds.), *Race, nation, class: Ambiguous identities*. London: Verso.
- Ball-Rokeach, S., & DeFleur, M. (1976). A dependency model of mass media effects. *Communication Research*, 3, 10–21.
- Barnett, J. (2007). The geopolitics of climate change. *Geography Compass*, 1(6), 1361–1375.
- Baron, J. (2006). Thinking about global warming. *Climatic Change*, 77, 137–150.
- Barringer, F. (2007, 19 January). A coalition for firm limit on emissions. *The New York Times*, p. C1.
- Barron, P. (2007). How green should we be? The editors. BBC News website. www.Bbc.Co.uk/blogs/theeditors/2007/02/how_green_should_we_be. Html (accessed 10 October 2008).
- Barry, J. (2006). Resistance is fertile: From environmental to sustainability citizenship. In A. Dobson & D. Bell (Eds.), *Environmental citizenship*. Cambridge, MA: MIT Press.
- Basel Action Network. (2006). *JPEPA as a step in Japan's greater plan to liberalize hazardous waste trade in Asia*. www.ban.org/library/JPEPA_Report.pdf (accessed 12 November 2008).
- Basel Action Network and Silicon Valley Toxics Coalition. (2002, February 25). *Exporting harm: The high-tech trashing of Asia*. Seattle, Washington: BAN.
- Baudelaire, C. (1972). *Les Fleurs du Mal*. Paris: Gallimard.
- Bauman, Z. (2001). *The individualized society*. Cambridge: Polity Press.
- BBC. (2005). Editorial guidelines: The BBC's values and standards. www.Bbc.Co.uk/guidelines/editorialguidelines/edguide/ (accessed 24 August 2008).
- BBC. (2005). The way ahead: Five thinkers' views. BBC Online. <http://tinyurl.com/67boll>.
- BBC Trust. (2007). From seesaw to wagon wheel: Safeguarding impartiality in the 21st century. www.Bbc.Co.uk/bbctrust/research/impartiality. Html (accessed 24 August 2008).

- BBC Trust. (2008). Service Review. www.Bbc.Co.uk/bbctrust/index. Html.
- BBC World Service. (2007). All countries need to take major steps on climate change: Global poll, news. [Bbc.Co.uk/2/shared/bsp/hi/pdfs/25_09_07climatepoll](http://www.Bbc.Co.uk/2/shared/bsp/hi/pdfs/25_09_07climatepoll). Pdf (accessed 28 September 2008).
- Beck, U. (1992). *Risk society. Towards a New Modernity*. London: Sage.
- Beck, U. (1995). *Ecological politics in an age of risk*. Cambridge: Polity Press.
- Beck, U. (1996). *The reinvention of politics: Rethinking modernity in the global social order*. Cambridge: Polity Press.
- Beck, U. (1999). *World risk society*. Cambridge: Polity Press.
- Beck, U. (2001). Losing the traditional: Individualization and precarious freedom. In U. Beck & E. Beck-Gernsheim (Eds.), *Individualization: Institutionalized individualism and its social and political consequences*. London: Sage.
- Beck, U. (2006). *Cosmopolitan vision*. Cambridge: Polity Press.
- Beck, U., Beck-Gernsheim, E. (Eds.). (2001). *Individualization: Institutionalized Individualism and its social and political consequences*. London: Sage.
- Beckford, M. (2007, 9 September). BBC drops Planet Relief plan to save world. *Daily Telegraph* (accessed 20 March 2008).
- Beder, S. (2002). *Global spin: The corporate assault on environmentalism*. Foxhole: Green Books.
- Bell, A. (1994). Media (mis)communication on the science of climate change. *Public Understanding of Science*, 3(3), 259–275.
- Benjamin, W. (1985). Central Park (Lloyd Spencer with Mark Harrington, Trans.). *New German Critique*, 34, 32–58.
- Bennett, P. (1999). Understanding responses to risk: Some basic findings. In P. Bennett & K. Calman (Eds.), *Risk communication and public health*. Oxford: Oxford University Press.
- Bennett, W. L. (1996). An introduction to journalism norms and representations of politics. *Political Communication*, 13, 373–384.
- Bennett, W. L. (2003). Communicating global activism: Strengths and vulnerability of networked politics. *Information, Communication & Society*, 6(2), 143–168.
- Berglez, P. (2008). What is global journalism? Theoretical and empirical conceptualisations. *Journalism Studies*, 9(6), 845–858.
- Bernstein, L., Bosch, P., Canziani, O., Chen, Z., Christ, R., Davidson, O., et al. (2007). *Climate change 2007: Synthesis report*. Geneva: Intergovernmental Panel on Climate Change (IPCC).
- Billett, S. (in review). Dividing climate change: How do postcolonial political geographies permeate the Indian national press's portrayal of climate change. *Climatic Change*.
- Billig, M. (1991). *Ideology, rhetoric and opinions*. London: Sage.
- Billig, M. (1995). *Banal nationalism*. London: Sage.
- Billig, M., Condor, S., Edwards, D., Gane, M., Middleton, D., & Radley, A. (1988). *Ideological dilemmas: A social psychology of everyday thinking*. London: Sage.
- Black, L. (2006). "Making Britain a gay and more cultivated country": Wilson, Lee and the creative industries in the 1960s. *Contemporary British History*, 20(3), 323–342.
- Blair, G. A. (1926). The development of the motion picture raw film industry. *Annals of the American Academy of Political and Social Science*, 128, 50–53.

- Bord, R. J., Fisher, A., & O'Connor, R. E. (1998). Public perceptions of global warming: United States and international perspectives. *Climate Research*, 11, 75–84.
- Bord, R., O'Connor, R., & Fischer, A. (2000). In what sense does the public need to understand global climate change? *Public Understanding of Science*, 9(3), 205–218.
- Bowser, E. (1990). *History of the American cinema*. Vol. 2: *The transformation of cinema, 1907–1915*. New York: Charles Scribner's Sons.
- Boyce, T. (2007). *Health, risk and news: The MMR vaccine and the media*. New York: Peter Lang.
- Boykoff, M. T. (2007a). Flogging a dead norm? Newspaper coverage of anthropogenic climate change in the United States and United Kingdom from 2003 to 2006. *Area*, 39(2), 470–481.
- Boykoff, M. T. (2007b). From convergence to contention: United States mass media representations of anthropogenic climate change science. *Transactions of the Institute of British Geographers*, 32, 477–489.
- Boykoff, M. (2008a). Lost in translation? United States television news coverage of anthropogenic climate change, 1995–2004. *Climatic Change*, 1–2, 1–17.
- Boykoff, M. T. (2008b). The cultural politics of climate change discourse in the UK tabloids. *Political Geography*, 27(5), 549–569.
- Boykoff, M. T. (2008c). The real swindle. *Nature Reports: Climate Change*, 2, 31–32. www.Nature.Com/climate/2008/0803/full/climate.2008.14. Html (accessed 20 August 2008).
- Boykoff, M. T., & Boykoff, J. (2004). Balance as bias: Global warming and the US prestige press. *Global Environmental Change*, 14, 125–136.
- Boykoff, M. T., & Boykoff, J. (2007). Climate change and journalistic norms: A case study of US mass-media coverage. *Geoforum*, 38(6), 1190–1204.
- Boykoff, M. T., & Mansfield, M. (2008). "Ye olde hot aire": Reporting on human contributions to climate change in the UK tabloid press. *Environmental Research Letters*. www.Iop.org/EJ/article/1748–9326/3/2/024002/erl8_2_024002. Pdf?request-id=c0ac938d-d7fd-45c4-9011-e7cd68c9f115 (accessed 30 July 2008).
- Boykoff, M. T., & Rajan, S. R. (2007). Signals and noise: Mass media coverage of climate change in the USA and the UK. *European Molecular Biology Organisation Reports*, 8(3), 207–211.
- Boykoff, M. T., & Roberts, J. T. (2007). Media coverage of climate change: Current trends, strengths, weaknesses. Human Development Report Background Paper 2007/8. UN Development Programme. hdr.undp.org/en/reports/global/hdr2007–2008/papers/boykoff,%20maxwell%20and%20roberts,%20j.%20timmons. Pdf (accessed 10 July 2008).
- Braudel, F. (1973). *Capitalism and material life, 1400–1800* (Miriam Kochan, Trans.). New York: Harper Colophon Books.
- Brenner, E. (2003, 16 March). It's getting easier to be green. *The New York Times*, section 14, p. 1.
- Brigden, K., Santillo, D., & Johnston, P. (2008). *Playing dirty: Analysis of hazardous chemicals and materials in games console components*. Amsterdam: Greenpeace.
- Broad, W. J. (2007, 31 July). NASA forced to steer clear of junk in cluttered space. *New York Times*, p. F4.
- Brody, S. (1988). Television: A new weapon for the new imperialist war. *Jump Cut*, 33, 105–106.

- Brossard, D., Shanahan, J., & McComas, K. (2004). Are issue-cycles culturally constructed? A comparison of French and American coverage of global climate change. *Mass Communication and Society*, 7(3), 359–377.
- Brown, C. (2006, 26 October). Blair condemned for "toothless approach" to climate legislation. *The Independent*, p. 2.
- Bucchi, M. (1998). *Science and the media: Alternative routes in scientific communication*. London: Routledge.
- Buckman, R. (2008, 10 June). Sun's Gage to join Kleiner Perkins. *The Wall Street Journal*, p. B9.
- Burgess, J., & Carvalho, A. (2005). Cultural circuits of climate change in UK broadsheet newspapers, 1985–2003. *Risk Analysis*, 25(6), 1457–1469.
- Burke, D. (2004). GM food and crops: What went wrong in the UK? *EMBO Reports*, 5(5), 432–436.
- Burke, J. G. (1979). Wood pulp, water pollution, and advertising. *Technology and Culture*, 20(1), 175–195.
- Buzek, A. (1964). *How the communist press works*. London and Dunmow: Pall Mall Press.
- Cammaerts, B. (2007). Media and communication strategies of globalized activists: Beyond media-centric thinking. In B. Cammaerts & N. Carpentier (Eds.), *Reclaiming the media: Communication rights and democratic media roles*. Bristol: Intellect Books.
- Camp for Climate Action. www.Climatecamp.org.uk/ (accessed 19 July 2008).
- Canales, C. (2007). www.eci.ox. Ac.uk/news/events/070727-carbonundrum/canales. Pdf (accessed 9 July 2008).
- Cantrill, J. (1992). Understanding environmental advocacy: Inter-disciplinary research and the role of cognition. *Journal of Environmental Education*, 24(1), 35–42.
- Cappella, J., & Jamieson, K. (1997). *The spiral of cynicism*. Oxford: Oxford University Press.
- Caribbean Media Network. (2008). *Climate change handbook for journalists coming*. www.Caribbean-media. Net/articles/article359. Html (accessed 19 March 2008).
- Carvalho, A. (2005). Representing the politics of the greenhouse effect: Discursive strategies in the British media. *Critical Discourse Studies*, 2(1), 1–29.
- Carvalho, A. (2007). Ideological cultures and media discourses on scientific knowledge: Re-reading news on climate change. *Public Understanding of Science*, 16(2), 223–243.
- Carvalho, A., & Burgess, J. (2005). Cultural circuits of climate change in UK broadsheet newspapers, 1985–2003. *Risk Analysis*, 25(6), 1457–1469.
- Cattaneo, P. (Director). (1997). *The full monty* [Motion picture]. UK: Twentieth Century-Fox Film Corporation.
- Central Office of Information. (2008). *Attitudes to climate change—Wave 7: Topline summary* www.defra.gov.uk/environment/climatechange/uk/individual/attitudes/pdf/ccresearch-toplines7–0803. Pdf (accessed 19 August 2008).
- Chalaby, J. K. (2004). Scandal and the rise of investigative reporting in France. *American Behavioural Scientist*, 47(9), 1194–1207.
- Chameides, W. L., & Bergin, M. (2002). Soot takes centre stage. *Science*, 297(5590), 2214–2215.
- Chason, G. (2008, 24 July). Cold comfort: Arctic is oil hot spot—Hard-to-reach energy reserves limit potential. *The Wall Street Journal*, p. A9.

- Cheng, B. (2007, 14 July). Forecast grim for insurance companies, local bodies. *New Zealand Herald*.
- Chibnall, S. (1977). *Law and order news: An analysis of crime reporting in the British press*. London: Routledge.
- Clark, A. (2008, 19 May). Exxon facing shareholder revolt over approach to climate change. *The Guardian*. www.guardian.co.uk/business/2008/may/19/exxonmobil.oil (accessed 20 May 2008).
- Clarkson, J. (2007, 19 May). John Prescott. *The Sun*.
- Climate Change Journalist Club. (2008). Reporting climate change: Knowledge, vision and approaches. Beijing. www.ClimateReporting.Cn/sub.Asp?id=915 (accessed 19 May 2008).
- Cohen, B. C. (1963). *The press and foreign policy*. New Jersey: Princeton University Press.
- Coleman, C. (1997). Science, technology and risk coverage of a community conflict. In D. Berkowitz (Ed.), *Social Meanings of News* (483–496). Thousand Oaks, CA: Sage.
- Connor, S. (2007, 8 May). C4 accused of falsifying data in documentary on climate change. *Independent*. www.Independent.co.uk/news/media/c4-accused-of-falsifying-data-in-documentary-on-climate-change-447927.Html (accessed 20 July 2008).
- Cook, G., Robbins, P. T., & Pieri, E. (2006). Words of mass destruction: British newspaper coverage of the genetically modified food debate, expert and non-expert reactions. *Public Understanding of Science*, 15, 5–29.
- Corbett, C. J., & Turco, R. P. (2006, November). *Sustainability in the motion picture industry*. Integrated Waste Management Board of the State of California. personal., &erson.ucla.edu/charles.Corbett/papers/mpis_report.Pdf (accessed 7 July 2008).
- Corbett, J. B., & Durfee, J. L. (2004). Testing public (un)certainly of science media representations of global warming. *Science Communication*, 26(2), 129–151.
- Corbett, J. B., & Durfee, J. L. (2005). Context and controversy: Global warming coverage. *Nieman Reports*, 59(4), 88–89.
- Corbin, A. (1986). *The foul and the fragrant: Order and the French social imagination*. Cambridge, MA: Harvard University Press.
- Corfee-Morlot, J., Maslin, M., & Burgess, J. (2007). Global warming in the public sphere. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, 365, 2741–2776.
- Cornelissen, G., Pandelaere, M., Dewitte, S., & Warlop, L. (2008). Positive cueing: Promoting sustainable consumer behavior by cueing common environmental behaviors as environmental. *International Journal of Research in Marketing*, 25, 46–55.
- Cortese, A. (2002, 18 August). Business: As the earth warms, will companies pay? *The New York Times*, section 3, p. 6.
- Cottle, S. (1998). Ulrich Beck, risk Society and the media: A Catastrophic View? *European Journal of Communication*, 13(1), 5–32.
- Cottle, S. (2000). TV news, lay voices and the visualisation of environmental risks. In S. Allan, B. Adam, & C. Carter (Eds.), *Environmental risks and the media*. London: Routledge.
- Cottle, S. (2006). *Mediatized conflict*. Maidenhead: Open University Press.

- Cox, S. (2007, 31 July). Are your cell phone and laptop bad for your health? *AlterNet*. www.Alternet.org/healthwellness/58354/?page=1 (accessed 4 August 2008).
- Cramer, C. (2008). *The framing of climate change in three daily newspapers in the Western Cape Province of South Africa*. Master of Philosophy (Journalism). Stellenbosch University, South Africa.
- Crosby, J. (2007, 29 June). The mania over Apple's latest product could translate into an avalanche of electronic waste. *Star Tribune*, p. 1D.
- Curry, P. (2006). *Ecological ethics: An introduction*. Cambridge: Polity Press.
- Curwen, L. (2007, 26 April). Science climate conflict warms up. BBC Online news. Bbc.Co.uk/1/hi/business/6595369.Stm (accessed 20 March 2008).
- Dayton, L. (2006, 7 January). Kyoto recalcitrants unite. *Weekend Australian*, p. 20.
- Deacon, D., Pickering, M., Golding, P., & Murdock, G. (1999). *Researching communications*. New York: Hodder Arnold.
- Dean, H. (2001). Green citizenship. *Social Policy & Administration*, 35(5), 490–505.
- Deardorff, J. (2003, 12 January). Big business to buy, sell greenhouse gas credits. *Chicago Tribune*, p. 1.
- De Burgh, H. (2003). *The Chinese journalist: Mediating information in the world's most populous country*. London: Routledge.
- D'Haenens, L., & De Lange, M. (2001). Framing of asylum seekers in Dutch regional newspapers. *Media, Culture & Society*, 23(6), 847–860.
- DeLuca, K. M. (1999). *Image politics: The new rhetoric of environmental activism*. Mahwah, NJ: Lawrence Erlbaum.
- DeLuca, K. M., & Peeples, J. (2002). From public sphere to public screen: Democracy, activism and the violence of Seattle. *Critical Studies in Media Communication*, 19(2), 125–151.
- Demirjian, K. (2007, 8 March). Taking climate legislation to the Hill: 4 major bills battle for Congress's support. *Chicago Tribune*, p. 4.
- Department of Prime Minister and Cabinet. (2006). *Uranium mining, processing and nuclear energy review: Opportunities for Australia?* Commonwealth of Australia, Barton.
- Descartes, R. (1977). *Philosophical writings* (Elizabeth Anscombe and Peter Thomas Geach, Trans., & Ed.). London: Nelson's University Paperbacks.
- Deutsch, C. H. (2005a, 22 November). Goldman to encourage solutions to environmental issues. *The New York Times*, p. C3.
- Deutsch, C. H. (2005b, 22 November). Saving the environment, one quarterly earnings report at a time. *The New York Times*, p. C1.
- Deutsch, C. H. (2006, 24 May). Wall St. develops the tools to invest in climate change. *The New York Times*, p. C3.
- de Salema, E., Salvador, B.V., & Nobre, J. (2007). *Media coverage, community perspectives and policy response on climate change and climate change adaptation in Mozambique*. Panos Institute: Southern Africa.
- De Vreese, C. H. (1999). *Framing Europe: Television news and European integration*. Doctoral Dissertation. The Amsterdam School of Communications Research, University of Amsterdam.

- De Vreese, C. H., Peter, J., & Semetko, H. A. (2001). Framing politics at the launch of the Euro: A cross-national comparative study of frames in the news. *Political Communication*, 18, 107–122.
- Di Gennaro, C. & Dutton, W. (2006). The Internet and the Public: Online and Offline Political Participation in the United Kingdom. *Parliamentary Affairs*, 59(2), 299–313.
- Dinerstein, J. (2006). Technology and its discontents: On the verge of the posthuman. *American Quarterly*, 58(3), 569–595.
- Dispensa, J., & Brulle, R. (2003). Media's social construction of environmental issues: Focus on global warming—A comparative study. *The International Journal of Sociology and Social Policy*, 23(10), 74–105.
- Dobson, A. (2003). *Citizenship and the environment*. Oxford: Oxford University Press.
- Doherty, B. (2006). Friends of the Earth International: Negotiating a transnational identity. *Environmental Politics*, 15(5), 860–880.
- Douglas, M., & Wildavsky, A. (1982). *Risk and culture*. Cambridge: MIT Press.
- Doulton, H. L., & Brown, K. (2009). Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press. Tyndall Centre for Climate Change Research Working Paper 111. www.tyndall.ac.uk/publications/working_papers/twpl11.pdf (accessed 14 July 2008).
- Downing, P., & Ballantyne, J. (2007). *Tipping point or turning point? Social marketing and climate change*. London: IPSOS-MORI Social Research Institute.
- Doyle, J. (2007). Picturing the clima(c)tic: Greenpeace and the representational politics of climate change. *Science as Culture*, 16(2), 129–150.
- Doyle, T., & McEachern, D. (2008). *Environment and politics*. London: Routledge.
- Durkin, M. (Director). (2007). *The great global warming swindle* [television documentary]. UK: Channel Four.
- Durning, A. (1991). Asking how much is enough. In Lester Brown (Ed), *State of the World*. New York: Norton.
- Eaton, L., & Gold, R. (2008, 24 May). Rockefeller rebellion turns up heat on Exxon—John D.'s heirs seek change—and respect. *The Wall Street Journal*, p. A1.
- Edwards, P. N., & Schneider, S. H. (2001). Self-Governance and peer review in science-for-policy: The case of the IPCC second assessment report. In C. A. Miller & P. N. Edwards (Eds.), *Changing the atmosphere: Expert knowledge and environmental governance*. London: MIT Press.
- Edwards, T. (2000). *Contradictions of consumption*. Buckingham: Open University Press.
- Ekström, M., Nohrstedt, S. A. (1996). *Journalistikens etiska problem* (The ethical problems of journalism). Stockholm: Rabén & Prisma/Svenska Journalistförbundet.
- Elliot, L. (1998). *The global politics of the environment*. Basingstoke: Macmillan.
- Ellis, J. (2007). TV FAQ: Uncommon answers to common questions about TV. London: IB Tauris.
- Ellison, K. (2002, 25 April). The new hot trend: Climate control. *Los Angeles Times*, section 5, p. 1.
- Elster, J. (1999). *Strong feelings*. Cambridge, MA: MIT Press.

- Emmerich, R. (Director). (2004). *The day after tomorrow* [Motion picture]. USA: Twentieth Century-Fox Film Corporation.
- Entman, R. (1989). *Democracy without Citizens: Media and the decay of American politics*. Oxford: Oxford University Press.
- Entman, R. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58.
- Environmental Protection Agency. (2007, April). *Fact Sheet: Management of electronic waste in the United States*. Washington, D.C.: EPA. See also: www.epa.gov/epawaste/conserve/materials/recycling/index.htm (accessed 23 July 2008).
- Ereaut, G., & Segnit, N. (2006). *Warm words: How are we telling the climate story and can we tell it better?* London: Institute for Public Policy Research. www.ippr.org.uk/members/download.Asp?f=/ecomm/files/warm_words.Pdf&a=skip (accessed 6 June 2008).
- Fahn, J. (2008a). Rescuing reporting in the global South. *Nature Climate Change Reports*. www.nature.com/climate/2008/0807/full/climate.2008.64.html (accessed 1 July 2008).
- Fahn, J. (2008b). Poor countries' media must tackle climate change. *SciDev.Net*. www.scidev.net/en/opinions/poor-countries-media-must-tackle-climate-change-1.html (accessed 8 August 2008).
- Fieschi, C. (2007). Commentary: It's a civic Christmas. *Parliamentary Affairs*, 60(4), 691–699.
- Fioravanti, C. (2007, 27 June). *Climate change reporting in Brazil*. Presentation at workshop Carbonundrums: Making sense of climate change reporting around the world, University of Oxford. www.eci.ox.ac.uk/news/events/070727-carbonundrum/fioravanti.Pdf.
- Fischhoff, B. (1995). Risk perception and communication unplugged—20 years of process. *Risk Analysis*, 15(2), 137–145.
- Fischhoff, B., Lichtenstein, S., & Slovic, P. (1980). Facts and fears: Understanding perceived risk. In W. Albers & R. Schwing (Eds.), *Societal risk assessment: How safe is safe enough?* New York: Plenum Press.
- Flanigan, J. (2004, 10 October). Industry energized by Kyoto Pact. *Los Angeles Times*, p. C1.
- Forbes, M. (2007, 28 July). PM tiptoes around drug sentences in Indonesia. *Sydney Morning Herald*.
- Fowler, R. (1991). *Language in the news: Discourse and ideology in the press*. London: Routledge.
- Frey, D. (2002, 8 December). How green is BP? *The New York Times*, section 6, p. 99.
- Friends of the Earth International. (2008a). 'Home Page.' <http://www.foei.org/> (accessed 17 April 2008).
- Friends of the Earth International. 2008b. (Campaigns). <http://www.foei.org/en/campaigns> (accessed 17 April 2008).
- Friends of the Earth International. (2008c). 'Stop Climate Change.' <http://www.foei.org/en/campaigns/climate> (accessed 17 April 2008).
- Friends of the Earth UK. (2008). 'Is your MP supporting a strong Climate Bill for 2008?' http://www.foe.co.uk/campaigns/climate/press_for_change/email_mp/index.html (accessed 17 April 2008).

- FUTERRA Sustainability Communications Ltd. (2005). *UK communications strategy on climate change*. www.defra.gov.uk/environment/climatechange/uk/individual/pdf/cce-strategy.Pdf (accessed 1 February 2008).
- Galtung, J., & Ruge, M. (1965). The structure of foreign news: The presentation of the Congo, Cuba and Cyprus crises in four Norwegian newspapers. *Journal of International Peace Research*, 1, 64–91.
- Gamson, W. A. (1992). *Talking politics*. New York: Cambridge University Press.
- Gamson, W. A., & Modigliani, A. (1987). The changing culture of affirmative action. In R. G. Braungart & M. M. Braungart (Eds.), *Research in political sociology*. Greenwich: JAI Press.
- Gamson, W. A., & Modigliani, A. (1989). Media discourse and public opinion on nuclear power: A constructionist approach. *American Journal of Sociology*, 95(1), 1–37.
- Gartner newsroom. (2007). Gartner estimates ICT industry accounts for 2 percent of global CO2 emissions. (26 April). <http://www.gartner.com/it/page.jsp?id=503867> (accessed 28 January 2009).
- Gavin, N. T. (2007a). *Global warming and the British press: The emergence of an issue and its political implications*. Paper presented at the 2007 EPOP Conference, Bristol University.
- Gavin, N. T. (2007b). *Press and television in British politics: Media, money and mediated democracy*. London: Palgrave/Macmillan.
- Gelbspan, R. (2004). *Boiling point: How politicians, big oil and coal, journalists, and activists have fueled the climate crisis—And what we can do to avert disaster*. New York: Basic Books.
- Gibson, R.K., Lusoli, W. & Ward, S. (2005). Online Participation in the UK: Testing a 'Contextualised' Model of Internet Effects. *British Journal of Politics and International Relations*, 7(4), 561–83.
- Giddens, A. (1994). Living in a post-traditional society. In U. Beck, A. Giddens, & S. Lash (Eds.), *Reflexive modernization: Politics, tradition and aesthetics in the modern social order*. Cambridge: Polity Press.
- Gidwani, V. K. (2006). Subaltern cosmopolitanism as politics. *Antipode*, 38(1), 7–21.
- Gonzenbach, W., & Hester, J. (1997). The environment: TV news, real world cues, and public opinion over time. *Mass Communication Review*, 22(1/2), 5–20.
- Gramsci, A. (2000). *The Gramsci reader: Selected writings, 1916–1935*. New York: New York University Press.
- Grant-Taylor, T. (2007, 21 July). Why Gladstone plant does not mean cheap gas at our doorstep. *Courier-Mail*.
- Greek, D. (2005, 24 November). Green computing: How to watch your waste. *PC Magazine*. www.pcmag.co.uk/computeractive/features/2146583/green-computing-waste-watchers (accessed 12 June 2008).
- Greenpeace International. (2008a). 'About Greenpeace.' www.greenpeace.org/international/ (accessed 17 April 2008).
- Greenpeace International. (2008b). 'Stop climate change.' www.greenpeace.org/international/campaigns/climate-change (accessed 20 July 2008).
- Greenpeace International (2008c). 'Energy [R]evolution.' <http://www.greenpeace.org/international/campaigns/climate-change/energyrevolution> (accessed 1 July 2008)

- Greenpeace UK. (2008). 'All about EfficiencyCity.' www.greenpeace.org.uk/efficiencycity/about (accessed 14 July 2008).
- Grossman, E. (2006). *High tech trash: Digital devices, hidden toxics, and human health*. Washington: Island Press.
- Guggenheim, D. (2006). *An inconvenient truth*. Paramount Classics, USA.
- Gunawardene, N. (2008). Planet before profit for climate change films. *SciDevNet*. www.Scidev.Net/en/opinions/planet-before-profit-for-climate-change-films. Html (accessed 4 November 2008).
- Gurevitch, M., Levy, M., & Roeh, I. (1991). The global newsroom: Convergences and diversities in the globalisation of television news. In P. Dahlgren & C. Sparks (Eds.), *Communication and citizenship: Journalism and the public sphere in the news media age*. London: Routledge.
- Gustafsson, E. (2008). Politikens strategier och mediernas labyrint, hur kommuniceras klimatfrågan? (Political strategies and the labyrinth of Media: How climate change is communicated). Örebro: Örebro University.
- Hagens Berman Sobol Shapiro LLP. (2008). *Kivalina—Global warming*. www.Hbsslaw.Com/Kivalina (accessed 2 September 2008).
- Hajer, M. (1995). *The politics of environmental discourse: Ecological modernization and the policy process*. Oxford: Clarendon Press.
- Hajer, M., & Versteeg, W. (2005). A decade of discourse analysis of environmental politics. *Journal of Environmental Policy and Planning*, 7(3), 175–184. <http://www.Informaworld.Com/smpptitle~content=t713433817~db=all~tab=issueslist~branches=7~v7> (accessed 10 June 2008).
- Haklay, M. (2002). Public environmental information: Understanding requirements and patterns of likely public use. *Area*, 34(1), 17–28.
- Hansard. (2005). *Spinning the web: Online campaigning in the 2005 general election*. London: Hansard. [Need first initial.] There is no initial—this is a government department in the UK
- Hansen, A. (1991). The media and the social construction of the environment. *Media, Culture and Society*, 13(4), 443–458.
- Hansen, A. (1993). Greenpeace and press coverage of environmental issues. In A. Hansen (Ed.), *The mass media and environmental issues*. Leicester: The University of Leicester Press.
- Hansen, A. (2000). Claims-making and framing in British newspaper coverage of the Brent Spar controversy. In S. Allan, B. Adam, & C. Carter (Eds.), *Environmental risks and the media*. London: Routledge.
- Haran, J., Kitzinger, J., McNeil, M., & O'Riordan, K. (2008). *Human cloning in the media: From science fiction to science practice*. London: Routledge.
- Harbinson, R. (2006). *Whatever the weather: Media attitudes to reporting climate change*. Panos London. www.Panos.org.uk/download.Php?id=146 (accessed 3 August 2008).
- Hargreaves, I., Lewis, J., & Speers, T. (2003). *Towards a better map: Science, the public and the media*. London: Economic and Social Research Council (ESRC).
- Hargreaves, I., & Thomas, J. (2002). *New News, Old News*. London: ITV/BSC.
- Harriss, J. (2006). Middle-Class activism and the politics of the informal working class: A perspective on class relations and civil society in Indian cities. *Critical Asian Studies*, 38(4), 445–465.

- Haworth, J. (2008, 5 June). Inside climate change: Fears of climate change "fudge." *The Scotsman*, p. 10.
- Hertog, J., & McLeod, M. (2003). A multiperspectival approach to framing analysis: A field guide. In S. Reese, O. Gandy, & E. Grant (Eds.), *Framing public life*. Mahwah, NJ: Lawrence Erlbaum.
- Hertsgaard, M. (1990). Covering the world: Ignoring the earth, *Greenpeace*, 15, 14–18.
- Hilgartner, S., & Bosk, C. L. (1988). The rise and fall of social problems: A public arenas model. *The American Journal of Sociology*, 94(1), 53–78.
- Hill, A. (2007). *Restyling factual TV: The reception of news, documentary, and reality genre*. London: Routledge.
- Höijer, B. (2007). (Ed.). *Ideological horizons in media and citizen discourses: Theoretical and methodological approaches*. Göteborg: Nordicom.
- Höijer, B. (2008). Sociala representationer i medietexter (Social representations in media texts). In M. Ekström (Ed.), *Mediernas språk* (The language of media). Malmö: Liber.
- Höijer, B., Lidskog, R., & Uggle, Y. (2006). Facing dilemmas: Sense-making and decision-making in late modernity. *Futures*, 38, 350–366.
- Holdren, J. (2008, 3 July). "Global disruption" more accurately describes climate change, not "global warming"—Leading scientist John Holdren." *Democracy Now!* www.democracynow.org/2008/7/3/global_disruption_more_accurately_describes_climate (accessed 20 August 2008).
- Holmes, T. (2008) "Objectivity, BBC-style," *The Memory Hole*, 20 January 2008; online at <http://tinyurl.com/62q8ks> (accessed 29 April 2009).
- Holmwood, L. (2007, 26 August). BBC criticised over climate change coverage. *The Guardian*. www.guardian.co.uk/media/organgrinder/2007/aug/26/bbcriticisedoverclimatech (accessed 7 June 2006).
- Hopkin, M. (2007). Climate panel offers grounds for optimism. *Nature*, 447, 120–121.
- Houghton, D. (2007, 21 July). Flegg starts thinking nuclear. *Courier-Mail*.
- Howard, J. (2006a, 6 June). Review of uranium mining, processing and nuclear energy in Australia. *News Room Press Releases Prime Minister of Australia John Howard*. Commonwealth of Australia. www.Pm.gov.au/news/media_releases/media_release1965. Html (accessed 7 June 2006).
- Howard, J. (2006b, 18 July). Let's not bury our head in the sand on nuclear energy. *Australian*, p. 13.
- Hughes, R. (1985, 9 September). The urban poet. *Time*.
- Hulme, M. (2007). Newspaper scare headlines can be counter-productive. *Nature*, 445, 818.
- Hulme, M. (2008). Geographical work at the boundaries of climate change. *Transactions of the Institute of British Geographers*, 33, 5–11.
- Independent Press Association, Conservatree, and Co-op America. (2001, May). *Turning the Page: Environmental Impacts of the Magazine Industry and Recommendations for Improvement*. Washington, D.C.: The Paper Project.
- IPCC. (2007a). *Climate change 2007—The physical science basis*. Contribution of Working Group I to the Fourth Assessment Report of the IPCC. Published for the Intergovernmental Panel on

- Climate Change. Cambridge University Press. <http://www.Ipcc.Ch/ipccreports/ar4-wg1.Htm>.
- IPCC. (2007b). *Climate change 2007—Impacts, adaptation and vulnerability*. Contribution of Working Group II to the Fourth Assessment Report of the IPCC. Published for the Intergovernmental Panel on Climate Change. Cambridge University Press. <http://www.Ipcc.Ch/ipccreports/ar4-wg2.Htm>.
- IPCC. (2007c). *Climate change 2007—Mitigation of climate change*. Contribution of Working Group III to the Fourth Assessment Report of the IPCC. Published for the Intergovernmental Panel on Climate Change. Cambridge University Press. <http://www.Ipcc.Ch/ipccreports/ar4-wg3.Htm>.
- IPCC. (2007d). *Climate change 2007—Synthesis report: Summary for policymakers*. Published for the Intergovernmental Panel on Climate Change. Cambridge University Press. http://www.Ipcc.Ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.Pdf.
- Ipsos MORI. (2007). *Tipping point or turning point?* www.Ipsos-mori.Com/_assets/pdfs/turning%20point%20or%20tipping%20point.Pdf (accessed 3 October 2008).
- Ipsos MORI. (2008). *Public attitudes to climate change, 2008: Concerned but still unconvinced*. www.Ipsos-mori.Com/content/public-attitudes-to-climate-change-2008-concerned. Ashx (accessed 3 October 2008).
- Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. Chicago: University of Chicago Press.
- Jamison, A. (1996). The shaping of the global environmental agenda: The role of non-governmental organisations. In S. Lash, S. Bronislaw, & B. Wynne (Eds.), *Risk, environment and modernity: Towards a new ecology*. London: Sage.
- Jha, A. K., Sharma, C., Singh, N., Ramesh, R., Purvaja, R., & Gupta, P. K. (2008). Greenhouse gas emissions from municipal solid waste management in Indian mega-cities: A case study of Chennai landfill sites. *Chemosphere*, 71, 750–758.
- Jhally, S. (1990). *The codes of advertising*. New York: Routledge.
- Jia, H. (2008, April). Climate change media survey results and analysis. *Climate Change Journalist Club*. Draft report.
- Jones, C. (2001). Co-evolution of entrepreneurial careers, institutional rules and competitive dynamics in American film. *Organization Studies*, 22(6), 911–944.
- Joppke, C. (1991). Social movements during cycles of issue attention: The decline of the anti-nuclear energy movements in West Germany and the USA. *British Journal of Sociology*, 42(1), 43–60.
- Kahn, R., & Kellner, D. (2004). New media and Internet activism: From the battle of Seattle to blogging. *New Media & Society*, 6(1), 87–95.
- Kahneman, D., & Tversky, A. (1984). Choices, values and frames. *American Psychologist*, 39, 341–350.
- Kasperson, R. K., Pidgeon, N. F., & Slovic, P. (2003). *The social amplification of risk*. Cambridge: Cambridge University Press.
- Kempton, W. (1991). Lay perspectives on global climate change. *Global Environmental Change*, 1(3), 183–208.
- Kerr, J. (2006, 22 November). 25 nuclear plants by 2050. *Australian*, p. 1.
- Kerr, R. (2007). Pushing the scary side of global warming. *Science*, 316, 1412–1414.

- Kirby, D. A. (2003). Scientists on the set: Science consultants and the communication of science in visual fiction. *Public Understanding of Science*, 12, 261–278.
- Kirkup, J. (2008, 9 July). MPs threaten climate change revolt. *The Telegraph*, p. 4.
- Kitzinger, J. (2006). Framing and frame analysis. In E. Devereux (Ed.), *Media studies: Key issues and debates*. London: Sage.
- Kitzinger, J., & Reilly, J. (1997). The rise and fall of risk reporting: Media coverage of human genetics research, false memory syndrome and mad cow disease. *European Journal of Communication*, 12(3), 319–350.
- Kline, S. L., Karel, A. I., & Chatterjee, K. (2006). Covering adoption: General depictions in broadcast news. *Family relations*, 55(4), 487–498.
- Kogan, R. (2001, 30 September). The cruise that became a cause: Land's End founder Gary Comer sailed into the Arctic as a tourist, he returned as a crusader on global warming. *Chicago Tribune*, p. C12.
- Ladle, R. J., Jepson, P., & Whittaker, R. J. (2005). Scientists and the media: The struggle for legitimacy in climate change and conservation science. *Interdisciplinary Science Reviews*, 30(3), 231–240.
- Lahsen, M. (2005a). Seductive simulations: Uncertainty distribution around climate models. *Social Studies of Science*, 35(6), 895–922.
- Lahsen, M. (2005b). Technocracy, democracy, and U.S. climate politics: The need for demarcations. *Science, Technology, & Human Values*, 30, 137–169.
- Latour, B. (1993). *We have never been modern* (Catherine Porter, Trans.). Cambridge, MA: Harvard University Press.
- Latta, P. A. (2007). Locating democratic politics in ecological citizenship. *Environmental Politics*, 16(3), 377–393.
- Layard, R. (2003, 3, 4, 5 March). *Lionel Robbins Memorial Lectures, 2002/2003*. Delivered at the London School of Economics.
- Lean, G. (2007). Climate change: An inconvenient truth...for C4. *The Independent*. www.Independent.Co.uk/environment/climate-change/climate-change-an-inconvenient-truth-for-c4-439773. Html (accessed 23 July 2008).
- Lean, G. (2008). Mobile phones more dangerous than smoking. *The Independent*. www.Independent.Co.uk/life-style/health-and-wellbeing/health-news (accessed 20 October 2008).
- Leemans, R. (2008). Personal experiences with the governance of the policy-relevant IPCC and Millennium Ecosystem Assessments. *Global Environmental Change*, 18(1), 12–17.
- Leiserowitz, A. (2004). Before and after the day after tomorrow. *Environment*, 46, 22–37.
- Leiserowitz, A. (2006). Climate change risk perception and policy preferences: The role of effect, imagery and values. *Climatic Change*, 77, 45–72.
- Leiserowitz, A. (2007). Communicating the risks of global warming: American risk perceptions, affective images, and interpretive communities. In S. C. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge: Cambridge University Press.
- Lenton, T.M., Held, H., Kriegler, E., Hall, J.W., Lucht, W., Rahmstorf, S. & Schellnhuber, H.J. (2008). Tipping Elements in the Earth's Climate System, *Proceedings of the National Academy of Sciences of the USA*, 105(6), 1786–1793.

- Levitt, J. (2007, 1 April). Cash from waste. *EE Times Supply Network*. //eetimesupplynetwork.com/showArticle.jhtml?articleID=197008176 (accessed 12 June 2008).
- Lewis, D. (2007, 26 July). Bourke's backbone struggling to keep the town's head up. *Sydney Morning Herald*.
- Lewis, J. (2001). *Constructing public opinion*. New York: Columbia University Press, 2001.
- Lewis, J., Inthorn, S., & Wahl-Jorgensen, K. (2005). *Citizens or consumers? What the media tell us about political participation*. Maidenhead: Open University Press.
- Lewis, J., Williams, A., & Franklin, B. (2008). A compromised fourth estate? UK news journalism, public relations and news sources. *Journalism Studies*, 9(1), 1–20.
- Lewis, S. (2006, 6–7 January). Climate fund's \$100m kickstart. *Weekend Australian*, p. 1.
- Lin, E., Xu, Y., Wu, S., Ju, H., & Ma, S. (2007). China's National Assessment Report on Climate Change (II), Climate change impacts and adaptation. *Advances in Climate Change Research*, 3(Suppl.), 6–11. www.Climatechange.Cn/qikan/manage/wenzhang/02. Pdf (accessed 23 March 2008).
- Linder, S. H. (2006). Cashing-in on risk claims: On the for-profit inversion of signifiers for "global warming." *Social Semiotics*, 16(1), 103–132.
- Lindvall, J. (2004). *The politics of purpose*. Gothenburg: Department of Political Science, Gothenburg University.
- Liu, X., Vedlitz, A., & Alston, L. (2008). Regional news portrayals of global warming and climate change. *Environmental Science & Policy*, 11, 379–393.
- Liverman, D. (2007). From uncertain to unequivocal: The IPCC Fourth Assessment Report on the Physical Science Basis of Climate Change. *Environment*, 49(8), 36–39.
- Lockwood, A. (2008, September). *Seeding doubt: The influence of online scepticism in the delay to act on climate change*. Paper presented at the Association for Journalism in Education Conference, University of Sheffield.
- Lorenzoni, I., & Pidgeon, N. F. (2006). Public views on climate change: European and USA perspectives. *Climatic Change*, 77, 73–95.
- Lorenzoni, I., Pidgeon, N. F., & O'Connor, R. E. (2005). Dangerous climate change: The role of risk research. *Risk Analysis*, 25(6), 1387–1398.
- Lowe, I. (2007). Reaction time: Climate change and nuclear opinion. *Quarterly Essay*, 27, 1–88.
- Lowe, T. (2006). Is this climate porn? How does climate change communication affect our perceptions and behaviour? *Tyndall Centre for Climate Change Research Working Paper 98*. www.Tyndall.Ac.uk/publications/working_papers/twp98. Pdf (accessed 16 August 2008).
- Lowe, T., Brown, K., Dessai, S., De França Doria, M., Haynes, K., & Vincent, K. (2006). Does tomorrow ever come? Disaster narrative and public perceptions of climate change. *Public Understanding of Science*, 15(4), 435–457.
- Luganda, P. (2007). Media can help fight climate change in Africa. *SciDev.Net*. www.Scidev.Net/en/opinions/media-can-help-fight-climate-change-in-africa.Html (accessed 3 March 2008).
- Luis, A. (2008). Editors' consultation eyes climate change. *International Center for Journalists*. //knight.lcfj.org/OurWork/TheImpact/ImpactArulLouis/tabid/686/Default.aspx (accessed 2 February 2008).
- Lunn, S. (2007, 9 March). French minister plants nuclear hope. *Australian*, p. 6.

- Lupia, A., & Sin, G. (2003). Which public goods are endangered? How evolving communication technologies affect the logic of collective action. *Public Choice*, 117(3-4), 315-331.
- Lusoli, W. (2005). A second-order medium? The Internet as a source of electoral information in 25 European countries. *Information Polity*, 10(3-4), 247-265.
- Lusoli, W., & Ward, S. (2003, March-April). Hunting protesters: Mobilisation, participation, and protest online in the countryside alliance. Paper presented at the BCPR Joint Sessions, University of Edinburgh.
- Lusoli, W., & Ward, S. (2005). Politics makes strange bedfellows. *The Harvard International Journal of Press/Politics*, 10(4), 71-97.
- Lusoli, W., Ward, S., & Gibson, R. (2006). (Re)connecting politics? Parliament, the public and the Internet. *Parliamentary Affairs*, 59(1), 24-42.
- Luther, C. A., & Zhou, X. (2005). Within the boundaries of politics: news framing of SARS in China and the United States. *Journalism & Mass Communication Quarterly*, 82(4), 857-872.
- Lynas, M. (2007, 30 August). Neutrality is cowardice. *New Statesman*. www.Newstatesman. Com/environment/2007/08/climate-change-lynas-planet (accessed 30 March 2008).
- MacGregor, S. (2006). *Beyond mothering earth: Ecological citizenship and the politics of care*. Vancouver: University of British Columbia Press.
- Madha, O. (Director). (2008). *Burn up* [Television mini-series]. BBC; Global Television.
- Madigan, M. (2007, 18 July). Black mark on emissions—Report hits Australia's spiralling carbon debt. *Courier-Mail*.
- Maiden, S., & Box, D. (2006, 12 January). Nuclear power crucial to helping environment says US. *Australian*, p. 1.
- Malone, T. W., & Klein, M. (2007). Harnessing collective intelligence to address global climate change. *Innovations: Technology, Governance, Globalization*, 2(3), 15-26.
- Mann, M.E. (2005, 18 November). The false objectivity of "balance." *RealClimate*. www.Realclimate.org/index.php/archives/2005/11/the-false-objectivity-of-balance/ (accessed 20 July 2007).
- Manyatsi, A. M. (2007). *Media coverage, community perspectives and policy response on climate change and climate change adaptation in Swaziland*. Panos Institute: Southern Africa.
- Marland, G., Boden, T., & Andres, B. (n.d.). Ranking of the world's countries by 2004 per capita fossil-fuel CO2 emission rates. *Carbon Dioxide Information Analysis Center*. //cdiac.ornl.gov/trends/emis/top2004. Cap (accessed 14 August 2008).
- Maseko, M., & Mayembe, M. (2007). *Media coverage, community perspectives and policy response on climate change and climate change adaptation in Zambia*. Panos Institute Southern Africa.
- Maxwell, R., & Miller, T. (2008). Ecological ethics and media technology. *International Journal of Communication*, 2(Figure), 331-353.
- May, R. M., & Pitts, R. (2000). *Communicating the science behind global environmental change issues*. London: Earthscan.
- Mayfield, K. (2003, 10 January). E-Waste: Dark side of digital age. *Wired*.
- Mazur, A. (1981). Media coverage and public opinion on scientific controversies. *Journal of Communication*, 31(2), 106-115.
- Mazur, A. (1990). Nuclear power, chemical hazards, and the quantity of reporting. *Minerva*, 28(3), 294-323.

- Mazur, A. (1998). Global environmental change in the news. *International Sociology*, 13(4), 457-472.
- Mazur, A., & Lee, J. (1993). Sounding the global alarm: Environmental issues in the US national news. *Social Studies of Science*, 23(4), 681-720.
- McCarthy, J. (2007, 19 July). Good times just keep on rolling. *Courier-Mail*.
- McComas, K., & Shanahan, J. (1999). Telling stories about global climate change: Measuring the impact of narratives on issue cycles. *Communication Research*, 26(1), 30-57.
- McCombs, M. E., Shaw, D. L., & Weaver, D. (1997). *Communication and democracy: Exploring the intellectual frontiers in agenda-setting theory*. Mahwah, NJ: Lawrence Erlbaum.
- McCright, A., & Dunlap, R. (2000). Challenging global warming as a social problem: An analysis of the conservative movement's counter-claims. *Social Problems*, 47(4), 499-522.
- McCright, A., & Dunlap, R. (2003). Defeating Kyoto: The conservative movement's impact on US climate policy. *Social Problems*, 50(3), 348-373.
- McKibben, B. (1989). *The end of nature*. Random House.
- McManus, M. (1994). *Market driven journalism: Let the citizen beware?* Thousand Oaks, CA: Sage.
- McManus, P. (2000). Beyond Kyoto? Media representation of an environmental issue. *Australian Geographical Studies*, 38(3), 306-319.
- McNair, B. (1994). *News and journalism in the UK*. London: Routledge.
- McNair, B. (2000). *Journalism and democracy*. London: Routledge.
- McQueen, M. P. (2008, 1 July). Hurricane watch: Insurers criticized for new rate models. *The Wall Street Journal*, p. A1.
- Media Monitors. (2007). *The energy debate: Discussion on nuclear, coal, solar, wind and other energy sources in Asia Pacific*. www.Mediamonitors. Com. Au/documents/Energy%20Report. Pdf (accessed 8 July 2008).
- Meyer, D. (2007). Building social movements. In S. C. Moser & L. Dilling (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge: Cambridge University Press.
- Milieu en Natuur Planbureau (Netherlands Environmental Assessment Agency). (2007). Chinese CO2 emissions in perspective—Country intercomparison of CO2 emissions. www.Mnp.Nl/en/service/Newsitems/20070622ChineseCO2emissionsinperspective. Html (accessed 2 August 2008).
- Miller, C. (2000). The dynamics of framing environmental values and policy: Four models of societal processes. *Environmental Values*, 9, 211-233.
- Miller, M. M., & Riechert, B. P. (2000). Interest group strategies and journalistic norms: News media framing of environmental issues. In S. Allan, B. Adam, & C. Carter (Eds.), *Environmental Risks and the Media*. London: Routledge.
- Miller, T. (1992). An editorial introduction for radio. *Continuum: The Australian Journal of Media & Culture*, 6(1), 5-13.
- Miller, T. (2007a). *Cultural citizenship: Cosmopolitanism, consumerism, and television in a neoliberal age*. Philadelphia: Temple University Press.

- Miller, T. (2007b, 16 December). Face up to tech waste. *Press-Enterprise*. www.Pe.Com/localnews/opinion/localviews/stories/PE_OpEd_Opinion_D_op_1216_miller_loc.1b11b81.Html (accessed 20 July 2008).
- Miller, T. (2008). La mano visible: Apuntes sobre la incorporación del impacto ambiental de las tecnologías mediáticas en la investigación sobre medios y globalización [The visible hand: Notes on the incorporation of the environmental impact of media technologies on media and globalisation research]. In J.C. Lozano Rendón (Ed.), *Comunicación*. Monterrey: Fondo Editorial de Nuevo León.
- Milne, G. (2005, 11 April). Climate changes on Labor's nuclear reaction. *Australian*, p. 15.
- Monbiot, G. (2003). *The age of consent: A manifesto for a new world order*. London: Flamingo.
- Monbiot, G. (2006). *Heat: How to stop the planet burning*. London: Penguin Books.
- Monbiot, G. (2007, 1 April). Correspondence with Hamish Mykura. www.Monbiot.Com/archives/2007/04/01/correspondence-with-hamish-mykura/ (accessed 20 March 2008).
- Mooallem, J. (2008, 13 January). The afterlife of cellphones. *New York Times*, pp. 38–43.
- Mormont, M., & Dasnoy, C. (1995). Source strategies and the mediatization of climate change. *Media, Culture and Society*, 17, 49–64.
- Mosco, V. (2004). *The digital sublime*. Cambridge, MA: MIT Press.
- Moscovici, S. (1988). Notes towards a description of social representations. *European Journal of Social Psychology*, 18, 211–250.
- Moscovici, S. (2000). *Social representations: Explorations in social psychology*. Cambridge: Polity Press.
- Moscovici, S. (2007). *Psychoanalysis: Its image and its public*. Oxford: Blackwell Publishing (originally published in French, 1961).
- Moser, S. C., & Dilling, L. (2004). Making climate hot: Communicating the urgency and challenge of global climate change. *Environment*, 46(10), 32–46.
- Moser, S. C., & Dilling, L. (Eds.). (2007). *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge: Cambridge University Press.
- Murdoch, R. (2007). Remarks by Rupert Murdoch AC, Chairman and Chief Executive Officer, News Corporation at launch of Global Energy Initiative to News Corporation Employees. www.1degree.Net.Au/files/RMurdochRemarksClimateChange.Pdf (accessed 16 August 2008).
- Murdock, G., Petts, J., & Horlick-Jones, T. (2003). After amplification: Rethinking the role of the media in risk communication. In N. Pidgeon, R. E. Kasperson, & P. Slovic (Eds.), *The social amplification of risk*. Cambridge: Cambridge University Press.
- Myers, G., & Macnaghten, P. (1998). Rhetorics of environmental sustainability: Commonplaces and places. *Environment and Planning A*, 30, 333–353.
- Mythen, G. (1998). *Ulrich Beck: A critical Introduction to the risk society*. London: Pluto.
- Naturvårdsverket (Swedish Environmental Protection Agency). (2006). *Allmänheten och växthuseffekten 2006* (The public and the greenhouse effect, 2006). www.Naturvardsverket.Se/klimat (accessed 3 March 2008).
- Naturvårdsverket (Swedish Environmental Protection Agency). (2008). *Allmänhetens kunskaper och attityder till klimatförändringen* (Public knowledge and attitudes towards climate change). ARS Research AB.

- Nelkin, D. (1987). *Selling science: How the press covers science and technology*. New York: W. H. Freeman and Company.
- Nerlich, B. (2008). The post-antibiotic apocalypse and the war on superbugs: Catastrophic discourse in microbiology, its rhetorical form and political function. *Public Understanding of Science*. (in press)
- Neuman, W. R., Just, M. R., & Crigler, A. N. (1992). *Common knowledge: News and the construction of political meaning*. Chicago: University of Chicago Press.
- New Age. (2007, 1 December). Living climate change. Supplement. www.Newagebd.Com/2007/dec/01/climatechange07/climatechange07.html (accessed 12 January 2008).
- New Age. (2008, 31 March). Faces of change: A special issue on climate change. www.Newagebd.Com/2007/dec/01/climatechange07/climatechange07.html (accessed 12 May 2008).
- Newell, P. (1997). *Climate for change: Non-state actors and the global politics of the greenhouse*. Cambridge: Cambridge University Press.
- New York Times (2007, 20–24 April). New York Times/CBS News poll. *New York Times*. graphics8.Nytimes.Com/packages/pdf/national/20070424_poll.Pdf (accessed 16 August 2008).
- Nicholson-Cole, S. (2005). Representing climate change futures: a critique on the use of images for visual communication. *Computers, Environment and Urban Systems*, 29, 255–273.
- Niman, M. I. (2003, 29 May). *Kodak's toxic moments*. kodakstoxiccolors.org (accessed 29 July 2008).
- Nisbet, M., & Mooney, C. (2007). Framing science. *Science*, 316(5821), 56.
- Nissani, M. (1999). Media coverage of the greenhouse effect. *Population and Environment*, 21(1), 27–43.
- Nivón, E. B. (Ed.). (2006). *Políticas culturales en México: 2006–2020: Hacia un plan estratégico de desarrollo cultural*. [Cultural policies in Mexico, 2006–202: Towards a strategic plan for cultural development]. Mexico City: Universidad de Guadalajara/Miguel Ángel Porrúa.
- Nohrstedt, S. A. (2007). Ideological horizons: Outline of a theory on hegemony in news discourse. In B. Höijer (Ed.), *Ideological horizons in media and citizen discourses: Theoretical and methodological approaches*. Göteborg: Nordicom.
- Oates, S. (2008). *An introduction to media and politics*. London: Sage.
- Ofcom (2007). *New news, future news: The challenges for television news after digital switch-over*. London: Ofcom.
- Ofcom (2008a). *Ofcom broadcast bulletin*. Issue 114. www.ofcom.org.uk/tv/obb/prog_cb/obb114/issue114.Pdf (accessed 1 November 2008).
- Ofcom (2008b). *The ofcom broadcasting code*. www.ofcom.org.uk/tv/ifi/codes/bcode/bcode.Pdf (accessed 1 November 2008).
- Olausson, U. (2005). *Medborgarskap och globalisering. Den diskursiva konstruktionen av politisk identitet* (Citizenship and globalization: The discursive construction of political identity). Örebro Universitet: Örebro Studies in Media and Communication 3.
- Olausson, U. (2009). Global Warming—Global Responsibility? Media Frames of Collective Action and Scientific Certainty. *Public Understanding of Science*, 18(4) (in press).
- Olausson, U. (in press). Towards a European Identity? The News Media and the Case of Climate Change. *European Journal of Communication*.

- Olausson, U., & Ugglä, Y. (in press). Offentlig kommunikation om klimatförändring (Public communication on climate change). In I. Elander & Y. Ugglä, (Eds.), *Global uppvärmning och lokal politik*. (Global Warming and Local Politics). Stockholm: Santérus förlag.
- Olson, M. (1965). *The logic of collective action: Public good and the theory of groups*. Cambridge, MA: Harvard University Press.
- Olson, S. R. (1999). *Hollywood Planet: Global media and the competitive advantage of narrative transparency*. Mahwah, NJ: Lawrence Erlbaum.
- O'Malley, B. (2007a, 24 July). Bikeway so near—And yet so far. *Courier-Mail*.
- O'Malley, B. (2007b, 28 July). Politicians lose plot on global warming. *Courier-Mail*.
- O'Neill, S. J., & Nicholson-Cole, S. (2009). Fear won't do it: Promoting positive engagement with climate change through visual and iconic representations. *Science Communication* (in press).
- OneWorld. (2008). More media coverage of climate change a necessity. *One World*. us.oneworld.Net/article/358246-more-media-coverage-climate-change-a-necessity (accessed 28 October 2008).
- Osibanjo, O., & Nnorom, I. C. (2007). The challenge of electronic waste (e-waste) management in developing countries. *Waste Management & Research*, 25, 489–501.
- Owens, L., & Palmer, L. K. (2003). Making the news: Anarchist counter-public relations on the World Wide Web. *Critical Studies in Media Communication*, 20(4), 335–361.
- Paget, D. (1998). *No other way to tell it: Dramadoc/docudrama on television*. Manchester: Manchester University Press.
- Painter, J. (2007). All doom and gloom? International TV coverage of the April and May 2007 IPCC reports. www.eci.ox. Ac.uk/news/events/070727-carbonundrum/painter. Pdf (accessed 23 October 2008).
- Palfreman, J. (2006). A tale of two fears: Exploring media depictions of nuclear power and global warming. *Review of Policy research*, 23(1), 23–43.
- Papacharissi, Z., & Oliveira, M. (2008). News frames terrorism: A comparative analysis of frames employed in terrorism coverage in U.S., & U.K. newspapers. *The International Journal of Press/Politics*, 13(1), 52–74.
- Paradis, T. (2007, 25 April). Big mutual funds not warming up to climate issue. *Chicago Tribune*, p. C9.
- Parks, L. (2007). Falling apart: Electronics salvaging and the global media economy. In C. Acland (Ed.), *Residual media*. Minneapolis: University of Minnesota Press.
- Patt, A. (2007). Assessing model-based and conflict-based uncertainty. *Global Environmental Change*, 17(1), 37–46.
- Patterson, T. (1993). *Out of order*. New York: Knopf.
- Payne, R. A. (2007). The geopolitics of global climate change. *Sustain*, 16, 9–15.
- Peatling, S. (2007a, 18 July). Emissions job will be even harder to institute. *Sydney Morning Herald*.
- Peatling, S. (2007b, 18 July). Battle for credibility goes under the sheets. *Sydney Morning Herald*.
- Perkowitz, S. (2007). *Hollywood science*. New York: Columbia University Press.
- Perttunen, Mary E. (Ed.). (2007). *The social construction of climate change: Power, knowledge, norms, discourses*. Aldershot: Ashgate.

Bibliography

- Pham, H. D. (2007). *Climate change coverage by the Vietnamese media: Institute of Health, Environment and Development in association with the Vietnam Forum of Environmental Journalists and Internews Earth Journalism Network*. www.earthjournalism.Com/ejn_vietnam_execsum_20071201. Htm (accessed 18 October 2008).
- Pickerrill, J. (2003). *CyberProtest: Environmental activism online*. Manchester: Manchester University Press.
- Pilkington, E. (2008, 23 June). Put oil firm chiefs on trial, says leading climate change scientist. *The Guardian*. www.guardian.Co.uk/environment/2008/jun/23/fossilfuels.Climatechange (accessed 25 June 2008).
- Plane Stupid. (2008). www.Planestupid.Com/ (accessed 19 July 2008).
- Porteous, C. (2007, 28 July). Climate change at centre stage. *Courier-Mail*.
- Potter, J., & Wetherall, M. (1987). *Discourse and social psychology: Beyond attitudes and behaviour*. London: Sage.
- Power, S., & Talley, I. (2008, 12 July). Administration releases EPA report, then repudiates it—Blueprint to reduce greenhouse gases called too costly. *The Wall Street Journal*, p. A2.
- Price, V., Tewksbury, D., & Powers, E. (1997). Switching trains of thought: The impact of news frames on readers' cognitive responses. *Communication Research*, 24(5), 481–506.
- Princen, T., & Finger, M. (1994). *Environmental NGOs in world politics: Linking the local and the global*. London: Routledge.
- Pusey, M. (2003). *The experience of Middle Australia: The dark side of economic reform*. Cambridge: Cambridge University Press.
- Rabkin, S., & Gershon, D. (2007). Changing the world one household at a time: Portland's 30-day program to lose 5,000 pounds. In S. C. Moser & L. Dilling, L. (Eds.), *Creating a climate for change: Communicating climate change and facilitating social change*. Cambridge: Cambridge University Press.
- Ray, M. R., Mukherjee, G., Roychowdhury, S., & Lahiri, T. (2004). Respiratory and general health impairments of ragpickers in India: A study in Delhi. *International Archives of Occupational and Environmental Health*, 77, 595–598.
- Rayner, S., & Malone, E. (Eds.). (1998). *Human choice and climate change. Vol. 1: The societal framework*. Columbus, OH: Batelle Press.
- Rector, L. H. (2008). Comparison of Wikipedia and other encyclopedias for accuracy, breadth, and depth in historical articles. *Reference Services Review*, 36(1), 7–22.
- Reese, S. (2003). Prologue-Framing public life: A bridging model for media research. In S. Reese, O. Gandy, & E. Grant (Eds.), *Framing public life*. Mahwah, NJ: Lawrence Erlbaum.
- Regeringens klimatpolitik. (2008, April). *Insatser och initiativ i klimatarbetet* (Achievements and initiatives in the climate work). Informationsblad från Miljödepartementet (Information from the Swedish government, Ministry of the Environment). www. Regeringen.Se.
- Revin, A. C. (2007). Climate change as news: Challenges in communicating environmental science. In J. F. C. DiMento & P. Doughman (Eds.), *Climate change: What it means for us, our children, and our grandchildren*. Cambridge, MA: MIT Press.
- Richardson, L. (2000). Writing: A method of enquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed.). London: Sage.
- Rieght, K. (1998). *Nationalising foreign conflict*. Stockholm: University of Stockholm.

- Riffe, D., Lacy, S., & Fico, F. (2005). *Analyzing media messages: Using quantitative content analysis in research*.
- Risbey, J. S. (2008). The new climate discourse: Alarmist or alarming? *Global Environmental Change*, 18(1), 26–37.
- Rogers, R.W. (1983). Cognitive and physiological processes in fear appeals and attitude change: a revised theory of protection motivation. In J. Cacioppo & R. Petty (Eds.), *Social Psychophysiology*. New York: Guilford Press.
- Rogers, R., & Marres, N. (2000). Landscaping Climate Change: A mapping technique for understanding science and technology debates on the World Wide Web. *Public Understanding of Science*, 9(2), 141–163.
- Romero, P. (2008, 14 August). The campaign for reporting on climate change starts in the newsroom. *Newsbreak.Com*. //newsbreak.Com.Ph/index.Php?option=com_content&task=view&id=5241&Itemid=88889066 (accessed 20 August 2008).
- Rootes, C. (2005). A limited transnationalisation? The British environmental movement. In D. Porta & S. Tarrow (Eds.), *Transnational protest and global activism*. Oxford: Rowman and Littlefield.
- Rootes, C. (2006). Facing South? British environmental movement organisations and the challenge of globalisation. *Environmental Politics*, 15(5), 768–786.
- Rosen, C. M., & Sellers, C. C. (1999). The nature of the firm: Towards an ecocultural history of business. *Business History Review*, 73(4), 577–600.
- Rosenstone, R. A. (2003). Comments on science in the visual media. *Public Understanding of Science*, 12, 335–339.
- Rowell, A. (2007). Exxon's foot soldiers: The case of the international policy network. In W. Dinan & D. Miller (Eds.), *Thinker, faker, spinner, spy: Corporate pr and the assault on democracy*. London: Pluto.
- Rowling, M. (2008). Who's helping media in developing countries tackle climate change? *Thomson Reuters AlertNet*. www.Alertnet.org/db/blogs/20316/2008/07/15–173925–1.Htm (accessed 1 September 2008).
- Royal Society. (2007). *Climate change controversies: A simple guide*. London: The Royal Society.
- Russell, B. (2006, 1 November). Flat screen televisions will add to global warming. *The Independent*.
- Russell, C. (2008, July/August). Climate change: now what? *Columbia Journalism Review*. www.Cjr.org/feature/climate_change_now_what.Php?page=1 (accessed 1 September 2008).
- Russell, C. (2008). The billion-dollar Kyoto botch-up: Climate change communication in New Zealand. *Media International Australia*, 127, 138–151.
- Ryan, C. (1991). *Prime time activism: Media strategy for grassroots organising*. Boston, MA: South End Press.
- Rydh, C. J. (2003). *Environmental assessment of battery systems: Critical issues for established and emerging technologies*. Thesis. Department of Environmental Systems Analysis, Chalmers University of Technology, Göteborg.
- Sancho, J. (2001). *Election 2001: Viewers' response to the television coverage*. London: Independent Television Commission.

- Saunders, A. (2008, 8 September). The elephant in a warming room: Media in developing countries struggle to give global climate change local coverage. *MediaGlobal*. www.Mediaglobal.org/article (accessed 8 September 2008).
- Schaefer, P. D., & Durham, M. G. (2007). On the social implications of invisibility: The iMac G5 and the effacement of the technological object. *Critical Studies in Media Communication*, 24(1), 39–56.
- Scheufele, D. A. (1999). Framing as a theory of media effects. *Journal of Communication*, 49(1), 103–122.
- Schlamme, T. (Director). (1999). *The west wing* [Television series]. USA: NBC.
- Schoenfeld, A. (2007, 22 December). Everyday items, complex chemistry. *New York Times*, p. C9.
- Schuck, A., & De Vreese, C. H. (2006). Between risk and opportunity: News framing and its effects on public support for EU enlargement. *European Journal of Communication*, 21(1), 5–32.
- Scottish Broadcasting Commission. (2008). *Public attitudes to broadcasting in Scotland*. www.Scotland.gov.uk/publications/2008/05/08112958/3 (accessed 20 August 2008).
- Segnit, N., & Ereaut, G. (2007). *Warm words II: How the climate story is evolving*. London: IPPR and the Energy Saving Trust.
- Semerko, H. A., & Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, 50(2), 93–110.
- Shanahan, D. (2007, 10–11 March). One big happy nuclear family. *Weekend Australian*, p. 27.
- Shanahan, D. (2008, 29 July). Don't wait for world on climate: poll. *The Australian*. www.heaustralian.News.Com.Au/story/0,25197,24093601–5013871,00.Html (accessed 13 August 2008).
- Shanahan, D. & Marris, S. (2007, 6 March). Nation Warms to Nuclear Future. *The Australian*.
- Shanahan, D., & Murphy, K. (2005, 10 June). PM fires up debate on n-power. *Australian*, p. 6.
- Shanahan, J., & McComas, K. (1999). *Nature stories: Depictions of the environment and their effects*. New Jersey: Hampton Press.
- Shanahan, M. (2006). Science journalism: Fighting a reporting battle. *Nature*, 443, 392–393.
- Shanahan, M. (2008). Bridging the climate-change media divide on the road to Copenhagen, *IISD/MEA Bulletin*, 40a. www.Iisd.ca/mea-1/guestarticle40a.Html (accessed 20 August 2008).
- ShapeNZ (2008). *New Zealanders' views on climate change and emissions trading*. www.Nzbcsd.org.Nz/story.Asp?id=865 (accessed 13 August 2008).
- Shellenberger, M., & Nordhaus, T. (2004). *The death of environmentalism: Global warming politics in a post-environmental world*. //thebreakthrough.org/PDF/Death_of_Environmentalism.Pdf (accessed 15 April 2008).
- Shogren, E. (2001, 4 August). Powerful pact formed in Senate on global warming. *Los Angeles Times*, p. 12.
- Siebert, F. S., Peterson, E., & Schramm, W. L. (1963). *Four theories of the press*. Illinois: University of Illinois Press.
- Simms, A. (2007). *Tescopoly*. London: Constable.
- Simmons, D. (2005, 14 October). India's poor tackle e-waste. *BBC News*.
- Singer, S. F., & Avery, D. T. (2006). *Unstoppable global warming every 1,500 years*. Lanham, MD: Rowman and Littlefield.

- Slade, G. (2007, March/April). I Waste. *Mother Jones*, p. 76.
- Slater, D. (2007, 12 August). Resolved: Public corporations shall take us seriously. *The New York Times*, section MM, p. 22.
- Slovic, P. (2000). *The perception of risk*. London: Earthscan.
- Smith, J. (Ed.). (2000). *The Daily Globe: Environmental change, the public and the media*. London: Earthscan.
- Smith, J. (2005). Dangerous news: Media decision making about climate change risk. *Risk Analysis*, 25(6), 1471–1482.
- Smith, L. (2006, 13 October). Bill to tackle climate change. *The Times*.
- Snell, C. (2008). Climate change and climate change policy in the UK 2006–2007. *Social Policy Review*, 20(1), 69–92.
- Snyder, C. R., Rand, K. L., & Sigmon, D. R. (2001). Hope theory: A member of the positive psychology family. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology*. Oxford: Oxford University Press.
- Spaargaren, G., & Mol, A. P. J. (1992). Sociology, environment and modernity: Ecological modernization as a theory of social change. *Society and Natural Resources*, 5, 323–344.
- Sparks, C., & Tulloch, J. (2000). *Tabloid tales: Global debates over media standards*. Lanham, MD: Rowman and Littlefield.
- Stamm, K., Clark, F., & Eblacas, P. (2000). Mass communication and public understanding of environmental problems: The case of global warming. *Public Understanding of Science*, 9, 219–237.
- Strauber, J., & Rampton, S. (2002). *Trust us, we're experts! How industry manipulates science and gambles with your future*. New York: Penguin Putnam.
- Stegman, A. (2005). Convergence in carbon emissions per capita. *Centre for Applied Macroeconomic Analysis Working Paper 8*. The Australian National University. //cama. Anu.edu. Au/Working%20Papers/Papers/2005/Stegman82005.Pdf (accessed: 26 August 2008).
- Stern, N. (2006). *Stern review on the economics of climate change*. London: HM Treasury. www.Hmtreasury.gov.uk/independent_reviews/Cfm (accessed 16 September 2007).
- Sterne, J. (2007). Out with the trash: On the future of new media. In C. Acland (Ed.), *Residual media*. Minneapolis: University of Minnesota Press.
- Stop Climate Chaos. (2008). *Home Page*. www.Stopclimatechaos.org/ (accessed 10 July 2008).
- Swierstra, T. (1997). From critique to responsibility: The ethical turn in the technology debate. *Society for Philosophy and Technology*, 3(1), 6–74. //scholar. Lib.vt.edu/ejournals/SPT/v3n1/swierstra. Html (accessed 20 July 2008).
- Taylor, A. (4 August 2008). Anger at police raid on green camp ahead of coal protest. *The Guardian*. www.guardian.co.uk/environment/2008/aug/04/kingsnorthclimatecamp. Climatechange (accessed 5 August 2008).
- Thompson, C. (2008, 22 June). A green coal baron? *The New York Times*, section MM, p. 26.
- Thompson, J. B. (1990). *Ideology and modern culture: Critical social theory in the era of mass communication*. Stanford: Stanford University Press.

- Thompson, M., & Rayner, S. (1998). Cultural discourses. In S. Rayner & E. L. Malone (Eds.), *Human choice and climate change*. Vol. 1: *The societal framework*. Columbus, OH: Battelle Press.
- Tickell, O. (2008). *Kyoto 2: How to manage the global greenhouse*. London: Zed Books.
- Tolan, S. (2007). Coverage of climate change in the Chinese media. *Human Development Report Office Occasional Paper 38*. UN Development Programme.
- Tong, X., & Wang, J. (2004). Transnational flows of e-waste and spatial patterns of recycling in China. *Eurasian Geography and Economics*, 45(8), 608–621.
- Towler, R. (2002). *The public's view, 2002*. London: Independent Television Commission/Broadcasting Standards Commission.
- Trumbo, C. (1996). Constructing climate change: Claims and frames in US news coverage of an environmental issue. *Public Understanding of Science*, 5(3), 269–283.
- Trumbo, C., & Shanahan, J. (2000). Social research on climate change: Where we have been, where we are, and where we might go. *Public Understanding of Science*, 9, 199–204.
- Tuchman, G. (1972). Objectivity as strategic ritual: An examination of newsmen's notions of objectivity. *American Journal of Sociology*, 77(4), 660–679.
- Tuchman, G. (1978). *Making news: A study in the construction of reality*. New York: Free Press.
- Tunstall, J. (1996). *Newspaper Power*. Oxford: Clarendon Press.
- Uggla, Y. (2008). Strategies to create risk awareness and legitimacy: The Swedish climate campaign. *Journal of Risk Research*, 11(6), 719–734.
- UNDP. (2007). *Human Development Report 2007/2008 fighting climate change: Human solidarity in a divided world*. United Nations Development Programme.
- UNFCCC. (2008). *United Nations Framework Convention on Climate Change*. //unfccc. Int/ (accessed 20 June 2008).
- Ungar, S. (1992). The rise and (relative) decline of global warming as a social problem. *The Sociological Quarterly*, 33(4), 483–501.
- Ungar, S. (1998). Bringing the issue back in: Comparing the marketability of the ozone hole and global warming. *Social Problems*, 45(4), 510–527.
- Ungar, S. (1999). Is strange weather in the air? A study of U.S. national network news coverage of extreme weather events. *Climatic Change*, 41(2), 133–150.
- Ungar, S. (2000). Knowledge, ignorance and the popular culture: Climate change versus the ozone hole. *Public Understanding of Science*, 9(3), 297–312.
- Valkenburg, P. M., Semetko, H. A., & De Vreese, C. H. (1999). The effects of news frames on reader's thoughts and recall. *Communication Research*, 26(5), 550–569.
- Van Dijk, T. (1998). *Ideology: A multidisciplinary approach*. London: Sage.
- Van Gorp, B. (2004). *Framing en het interpreteren van nieuws. Een experimenteel onderzoek naar de effecten van frames*. (Framing and the interpretation of news: An experimental study of the effects of frames). PSW-paper 2004/6. Antwerpen: Universiteit Antwerpen—Faculteit politieke en sociale wetenschappen.
- Von Storch, H., & Krauss, W. (2005). Culture contributes to perceptions of climate change. *Nieman Reports*, 59(4), 99–102.

- Wald, M. L. (2007, 7 November). Taming the guzzlers that power the World Wide Web. *New York Times*, p. H7.
- Walker, J. (1998, April). Memo to Global Climate Science Team. tinyurl.com/65rjna (accessed 20 June 2006).
- Wall, D. (1999). Mobilising earth first! in Britain. In C. Rootes (Ed.), *Environmental movements: Local, national and global*. London: Frank Cass.
- Wapner, P. (1996). *Environmental activism and world civic politics*. New York: State University of New York Press.
- Ward, R. E. T. (2006, 4 September). Letter to Exxon Mobil. www.tinyurl.com/5bjloa (accessed 30 July 2008).
- Ward, R. E. T. (2007a). The Royal Society and the debate on climate change. In M. W. Bauer & M. Bucchi (Eds.), *Journalism, science and society: Science communication between news and public relations*. Abingdon, UK: Routledge.
- Ward, R. E. T. (2007b). Climate change and the press: Freedom or accuracy. *Science and Public Affairs*. www.The-ba.Net/NR/exeres/F3AA3031-F103-48F6-A031-13A4F5BE9D22.Htm (accessed 23 March 2008).
- Ward, R. E. T. (2008a, 10 March). Reporters feel the heat over climate change. *The Independent*. www.Independent.Co.uk/news/media/reporters793586.Html (accessed 20 November 2008).
- Ward, R. E. T. (2008b). Good and bad practice in the communication of uncertainties associated with the relationship between climate change and weather-related natural disasters. In D. G. B. Liverman, C. P. G. Pereira, & B. Marker (Eds.), *Communicating environmental geoscience*. London: Geological Society.
- Warren, M. (2007, 10–11 March). Generation Y says why not go nuclear. *Weekend Australian*, p. 27.
- Weart, S. R. (2003). *The discovery of global warming*. Cambridge, MA: Harvard University Press.
- Weekend Australian (2006, 27–28 May). Nuclear power options—The Australian National Forum. *Weekend Australian*, p. 21.
- Weingart, P., Engels, A., & Pansegrau, P. (2000). Risk of communication: Discourses on climate change in science, politics, and the mass media. *Public Understanding of Science*, 9(3), 261–283.
- Whitehouse, D. (2007). Ray of hope: Can the sun save us from global warming? *The Independent*. www.Independent.Co.uk/news/science/762878.Html (accessed 23 July 2008).
- Widmer, R., Oswald-Krapf, H., Sinha-Khetriwal, D., Schnellmann, M., & Böni, H. (2005). Global perspectives on e-waste. *Environmental Impact Assessment Review*, 25, 436–458.
- Wilkins, L. (1993). Between facts and values: Print media coverage of the greenhouse effect, 1987–1990. *Public Understanding of Science*, 2, 71–84.
- Wilkins, L., & Patterson, P. (1987). Risk analysis and construction of news. *Journal of Communication*, 37(3), 80–93.
- Wilkins, L., & Patterson, P. (1991). Science as symbol: The media chills the greenhouse effect. In L. Wilkins & P. Patterson (Eds.), *Risky business: Communicating issues of science, risk, and public policy*. Westport, CT: Greenwood.

- Willemts, P. (1996). From Stockholm to Rio and beyond: The impact of the environmental movement on the United Nations consultative arrangements for NGOs. *Review of International Studies*, 22, 57–80.
- Williams, M. (2008, 15 June). Greenpeace says e-waste from US stopped in Hong Kong. *PC World*.
- Wilson, K. (1995). Mass media as sources of global warming knowledge. *Mass Communication Review*, 22(1 & 2), 75–89.
- Wilson, K. M. (2000a). Communicating climate change through the media: Predictions, politics and perceptions of risk. In S. Allan, B. Adam, & C. Carter (Eds.), *Environmental risks and the media*. London: Routledge.
- Wilson, K. (2000b). Drought, debate, and uncertainty: Measuring reporters' knowledge and ignorance about climate change. *Public Understanding of Science*, 9, 1–13.
- Wilson, N. (2006, 30 May). Nuclear dawn won't be tomorrow. *Australian*, p. 26.
- Winston, B. (2007). Let them eat laptops: The limits of technicism. *International Journal of Communication*, 1, 170–176.
- Wintour, P. (2007, 3 August). Judges should enforce climate bill targets, say MPs. *The Guardian*, p. 13.
- Wong, C. S. C., Wu, S. C., Duzgoren-Aydin, N. S., Aydin, A., & Wong, M. H. (2007). Trace metal contamination of sediments in an e-waste processing village in China. *Environmental Pollution*, 145, 434–442.
- Worcester, R. M., & Mortimore, R. (2001, September). *The 2001 British general election: The most boring election ever?* Paper prepared for the Elections Public Opinion and Parties Conference, University of Sussex.
- World Health Organization. (2006). *Air quality guidelines: Global update 2005: Particulate matter, ozone, nitrogen dioxide and sulphur dioxide*. Copenhagen: World Health Organization.
- WWF-UK. (2008a). *Weathercocks and signposts: The environmental movement at a crossroads*. www.wwf.org.uk/filelibrary/pdf/weathercocks_report2.Pdf (accessed 1 May 2008).
- WWF-UK. (2008b). 'One planet future—Will I make a difference?' www.wwf.org.uk/oneplanet/about_0000003950.Asp (accessed 15 July 2008).
- WWF. (2008a). 'Who we are.' http://www.panda.org/who_we_are/ (accessed 17 April 2008).
- WWF (2008b). 'Where and how we work.' http://www.panda.org/about_wwf/what_we_do/climate_change/solutions/where_we_work/index.cfm (accessed 17 April 2008).
- Wynne, B. (1991). Knowledges in context. *Science, Technology and Human Values*, 16(1), 111–121.
- Wynne, B. (1994). SSK's identity parade: Signing-up, off-and-on. *Social Studies of Science*, 26(2), 357–39.
- Wynne, B. (2008). Elephants in the rooms where publics encounter science: A response to Darrin Durant, accounting for expertise: Wynne and the autonomy of the lay public. *Public Understanding of Science*, 17, 21–33.
- Xinhua News Agency. (2008, 25 August). UN seeks media partnership on climate change. [//news.xinhuanet.com/english/2008-08/25/content_9709439.Htm](http://news.xinhuanet.com/english/2008-08/25/content_9709439.Htm) (accessed 20 November 2008).

- Yearley, S. (2008). Nature and the environment in science and technology studies. In E. J. Hackett, O. Amsterdamska, M. Lynch, & J. Wajcman (Eds.), *The handbook of science and technology studies*. London: MIT Press.
- Zehr, S. (2000). Public representations of scientific uncertainty about global climate change. *Public Understanding of Science*, 9(2), 85–103.
- Zhao, Y. (1998). *Media, market, and democracy in China: Between the party line and the bottom line*. Chicago: University of Illinois Press.

About the Contributors

Peter Berglez is a postdoctoral fellow in Media and Communications at Örebro University, Sweden. Peter is involved in a research project on media and climate change, and is the author of *The Materiality of Media Discourse: On Capitalism and Journalistic Modes of Writing* (2006) and "What Is Global Journalism? Theoretical and Empirical Conceptualizations" in *Journalism Studies*, 9(6): 845–858.

Tammy Boyce is a research fellow in public health at The King's Fund, London, UK. Her research interests include media coverage of risk, science, and health. She is the author of *Health, Risk and News: The MMR Vaccine and the Media* (Peter Lang).

Catherine Butler is a postdoctoral researcher in the School of Psychology at Cardiff University, UK. Her research interests are in socio-environmental risk with a particular emphasis on climate change. She is currently working on a Leverhulme Trust-funded project entitled "Understanding Risk: Climate Change and Energy Choices."

Astrid Dirikx is a research assistant of the Fund for Scientific Research-Flanders (Belgium), working at the Leuven School for Mass Communication Research K.U.Leuven. Her research interests are in government communication, government image-building, and science communication. She is currently working on a PhD regarding the role of media in young peoples' perceptions of the police.