

(an information-deficit model) will encourage appropriate behaviour has been criticised by scholars who see culture, norms and leadership as being more important in environmentally significant behavioural and organisational change.

Box 16.1

The role of the media

MAXWELL BOYKOFF

Media representations – from news to entertainment – are critical links between the everyday realities of how people experience climate change and the ways in which these are discussed at a distance between science, policy and public actors (Boykoff, 2009). Many studies, surveys and polls have found that the public frequently learn about science (and more specifically climate change) from the mass media. Mass media range from entertainment to news media, and spanning television, films, books, flyers, newspapers, magazines, radio and the internet (websites, blogs, Youtube, Facebook, etc.). In the past decade, there has been a significant expansion from consumption of ‘new social media’ – such as the internet, and mobile phone communications – where a great deal of climate communications now happen on blogs and tweets. This movement has signalled substantive changes in how people access and interact with information, who has access and who is seen as an ‘authority’ as well as an ‘expert’. Together, these media are constituted by a diverse and dynamic set of institutions, processes and practices that, together, serve as ‘mediating’ forces between communities such as science, policy and public citizens. Members of the communications industry and profession – publishers, editors, journalists and others – produce, interpret and communicate images, information and imaginaries for varied forms of consumption (Carvalho, 2007).

Media coverage of climate change first emerged in the late eighteenth century, and was linked to discussions of weather events: an example is news coverage linking climate and weather in the winter of 1788–89, when the Thames River in London froze. Coverage expanded in North America and Europe through the nineteenth century with a focus on the links between climate and agriculture. These themes of climate, weather and agriculture continued to play out in the twentieth century, such as during the 1930s in relation to the Dust Bowl in North America. Moving through the twentieth century, connections were increasingly made between climate change and scientific studies. As international and domestic climate policy began to take shape in the mid 1980s, sporadic media coverage of climate change science and policy gave way to a steady flow of climate news. Climate scientists were widely quoted and called upon in the media as ‘authorised’ speakers on behalf of the climate, and business and environmental groups also started to speak out on the issue. In the process of understanding changes in the climate, many entities, organisations, interests and individuals battled to shape awareness, engagement and possible action.

Media coverage of climate change reached a peak in 2006 and into 2007. Figure 16.3 shows the ebbs and flows of news articles on climate change or global warming from January 2004 through January 2010 in 50 newspapers across 20 countries. Abundant coverage of ‘climate change’ or ‘global warming’ can be attributed to a number of key and concatenate events.

Box 16.1 (cont.)

Among them, mid-2006 marked the global release of the Al Gore film 'An Inconvenient Truth'. Moreover, the much anticipated, discussed and criticised *Stern Review* was released on 30 October 2006. Intense media coverage of the *Stern Review* then fed into media attention on the UNFCCC COP12 meeting in Nairobi, Kenya, which began approximately a week later. Following on in 2007 were highly fluctuating oil and gasoline prices, as well as the releases of the highly influential IPCC Fourth Assessment Report. Figure 16.3 shows that there has been a discernible levelling off or decrease in the amount of coverage in later 2007, through 2008 and into 2009. The decline could be attributed to a number of intersecting influences including: (i) media attention on the global economic recession may have displaced climate change reporting; (ii) issues formerly discussed explicitly as 'climate change' or 'global warming' are now treated as 'energy' issues, 'sustainability' considerations, and other associated themes such as 'carbon trading'; and (iii) upon the 2007 release of various Working Group reports for the IPCC Fourth Assessment Report, fewer fundamental issues were deemed as 'controversial' as in previous assessments (although this apparently changed in late 2009 with the controversial hacking of emails about climate science from the University of East Anglia (UEA) Climate Research Unit (CRU)). However, another peak was no doubt reached during the Copenhagen COP15 in December 2009. The highly anticipated United Nations climate talks in Copenhagen, Denmark (COP15), along with news about the released UEA CRU emails, played key parts in this dramatic rise to close out 2009.

Figure 16.3 also shows the low number of stories on climate change or global warming in the regions of South America and Africa. This can be attributed partly to the low number of sources sampled in these regions. This points to an 'information gap' in reporting on these issues, and relates to capacity issues and support for reporters in these regions and countries (developing and poorer regions/countries). Those most at risk from the impacts of climate change typically have had access to the least information about it through mass media. Some organisations and networks are seeking to overcome these challenges, including the Climate Change Media Partnership, Internews, PANOS Institute and the Earth Journalism Network.

At the same time, capacity in climate change reporting is declining in developed countries, as all over Europe and America staff is being cut and budgets for getting out of the office slashed. From 1989 to 2006, the number of newspapers featuring weekly science sections shrunk by nearly two-thirds; while since 2001, nearly one newspaper journalist in five in the USA has been laid off. In December 2008, CNN cut its entire science, technology and environment news staff.

In the past decade, questions raised by the mass media have largely moved away from 'Is the climate changing?' and 'Do humans play a role in climate change?' to more textured considerations of governance and economics. For instance, many articles have addressed questions regarding how to effectively govern the mitigation of GHG emissions, and how to construct and maintain initiatives to help vulnerable communities adapt to already unfolding climate impacts.

As mass media serve a vital role in communication processes, media portrayals of climate change shape ongoing perceptions and considerations for action. Representations construct and negotiate meaning, and shape how people make sense of the world. Choices

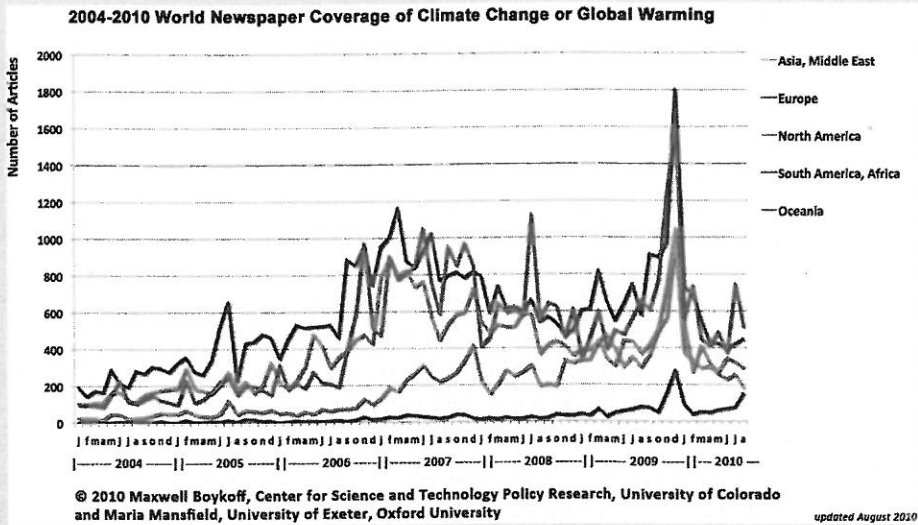


Figure 16.3 Newspaper coverage of climate change or global warming in 50 newspapers across 20 countries and six continents over a five-year period (January 2004–January 2010). The newspapers used in this figure (appearing alphabetically by newspaper) are *The Age* (Australia), *The Australian* (Australia), *Business Day* (South Africa), *Clarín* (Argentina), *The Courier-Mail* (Australia), the *Daily Express* (and *Sunday Express*) (United Kingdom), *Daily Mail* (*Mail on Sunday*) (United Kingdom), the *Daily News* (United States), the *Daily Telegraph* (Australia), *Dominion Post* (New Zealand), *Fiji Times* (Fiji), the *Financial Mail* (South Africa), *Globe and Mail* (Canada), the *Guardian* (and *Observer*) (United Kingdom), *The Herald* (United Kingdom), the *Hindu* (India), *Hindustan Times* (India), the *Independent* (and *Sunday Independent*) (United Kingdom), *Indian Express* (India), the *Irish Times* (Ireland), *Japan Times* (Japan), the *Jerusalem Post* (Israel), the *Jerusalem Report* (Israel), the *Korea Herald* (South Korea), the *Korea Times* (South Korea), the *Los Angeles Times* (United States), the *Mirror* (*Sunday Mirror*) (United Kingdom), the *Moscow News* (Russia), the *Nation* (Pakistan), the *Nation* (Thailand), *National Post* (Canada), the *New Straits Times* (Malaysia), the *New York Times* (United States), *New Zealand Herald* (New Zealand), the *Prague Post* (Czech Republic), *The Press* (New Zealand), *The Scotsman* (and *Scotland on Sunday*) (United Kingdom), the *South China Morning Post* (China), the *South Wales Evening Post* (United Kingdom), *The Straits Times* (Singapore), *The Sun* (and *News of the World*) (United Kingdom), *Sydney Morning Herald* (Australia), the *Telegraph* (and *Sunday Telegraph*) (United Kingdom), the *Times* (and *Sunday Times*) (United Kingdom), *The Times of India* (India), the *Toronto Star* (Canada), *USA Today* (United States), the *Wall Street Journal* (United States), the *Washington Post* (United States) and *Yomiuri Shimbun* (Japan). Source: http://sciencepolicy.colorado.edu/media_coverage/.

by journalists regarding how they represent climate science and policy through the media hinge on interpretation, perspectives and available information – as well as contextual social, political, economic and environmental factors. While media interventions seek to enhance understanding of complex and dynamic human–environment interactions, vague and

Box 16.1 (cont.)

de-contextualised reporting instead can enhance bewilderment. Better reporting has critical implications for understanding, meaning and potential public engagement, and possible support for policy action.

Ultimately, a more informed public space and better supported links between science, policy and media are in our collective self-interest.

Encouraging pro-environmental behaviour through shifting norms may be better achieved through social and community networks than through top-down government communication campaigns. Analyses of barriers to behaviour examine both external/contextual and internal/psychological factors. For example, Jackson identified three main sets of barriers – external conditions such as infrastructure and institutions, social context, and lock in to habits and preferences (Jackson, 2006). Examples of the significance of infrastructure include the presence or absence of public transport or kerbside recycling. The value-belief-norm theory of environmentalism links pro-environmental behaviour to basic values of altruism; and beliefs about nature, to consequences and personal efficacy, and to norms about obligations (Dietz *et al.*, 2005). Lessons from social marketing theory have also been helpful in understanding how to promote behavioural change, grouping the public into segments, building awareness, and encouraging collective action and reflection. For example, Gilg *et al.* (2005) identified clusters that include committed environmentalists, mainstream environmentalists, occasional environmentalists and non-environmentalists.

Assumptions about individual values and attitudes underlie economic analyses of climate change including Stern's pivotal study on the economics of climate change (Chapter 12; Stern *et al.*, 2006). Although many economists assume that people value the future less than the present, by applying discount rates of 3% or more, Stern took the position that discounting the future is unethical and used a near-zero discount rate, which produced significant future damages that far exceeded the costs of early action on mitigation. Empirical support for individual perceptions of future values, risks and equity concerns showed that most people do value the future, are risk-averse and are concerned about the unequal effects (Chapters 9 and 10) of climate change (Beckerman and Hepburn, 2007; Saelen *et al.*, 2008).

Surveys also provide important insights into how the public views solutions to climate change, especially perceptions of risk that may constrain the acceptability of certain technologies. Some scientists and policymakers are proposing nuclear energy, biofuels, carbon capture and storage (CCS) and geoengineering (such as atmospheric sulfur injection) as the only scalable solutions for reducing levels of greenhouse gases in the atmosphere or limiting the temperature increase. The barriers to rapid global adoption of these technologies include resources and cost, but research suggests that public opposition to CCS and other technologies is also likely (Shackley *et al.*, 2005; Huijts *et al.*, 2007; Singleton *et al.*, 2009; Wong-Parodi and Ray, 2009). For example, research on attitudes to CCS among