

Environment and the media

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Media communication on environmental issues

Media range from entertainment to news media, spanning traditional or mass media such as television, films, books, flyers, newspapers, magazines, and radio, as well as new media such as the Internet in general, Web 2.0, and social media. Traditional media rely on one-to-many (often monodirectional) communications and are sometimes referred to as “mass media,” whereas new or social media involve many-to-many, more interactive, webs of communications. Since the 1990s, the shift from traditional to new media has signaled substantive changes in how people access and interact with information, who has access to it, and who are considered “authorized” definers (e.g., actors with more power and influence than others) of the various dimensions of environmental issues. It is argued that new and social media have democratizing influences, as these channels of communication often offer a platform for more people to become content producers, and therefore have the potential to more readily shape the public agenda.

In all media, actors such as publishers, editors, journalists, and other content producers such as

online bloggers generate, interpret, and communicate images, information, and imaginaries for varied forms of consumption. These “media representations” are therefore critical inputs to what becomes public discourse on today’s environmental issues.

As an example, climate change as a highly politicized media topic, especially in the United States, illustrates how (powerful) groups with diverging political ideologies, worldviews, or economic interests heavily influence the public debate on climate change. Recent studies on worldwide media coverage of climate change (Boykoff *et al.* 2015; see Figure 1), as well as on climate discourse and the interconnection of media, politics, and public opinion, suggest that media agendas match public agendas on the perception of climate change and policy implications (Hmielowski *et al.* 2014; Brulle, Carmichael, and Jenkins 2010; McCright and Dunlap 2011; Boykoff and Roberts 2007; Boykoff and Boykoff 2004; Weingart and Engels 2000). Through a web of interactions, the media have thereby influenced a range of processes from formal environmental policy to informal notions of public understanding about the environment.

Illustrating how this influence has changed over time, Figure 1 shows media attention on the terms “climate change” and “global warming” in English- and Spanish-language newspapers around the globe. The attention spikes can be attributed to certain events, for example the publication of the Stern Review and Al Gore’s film *An Inconvenient Truth* in 2006, the Fourth Intergovernmental Panel on Climate Change (IPCC) Assessment Report and the Bali Summit on Climate Change in 2007, President Obama’s inauguration and making climate change a

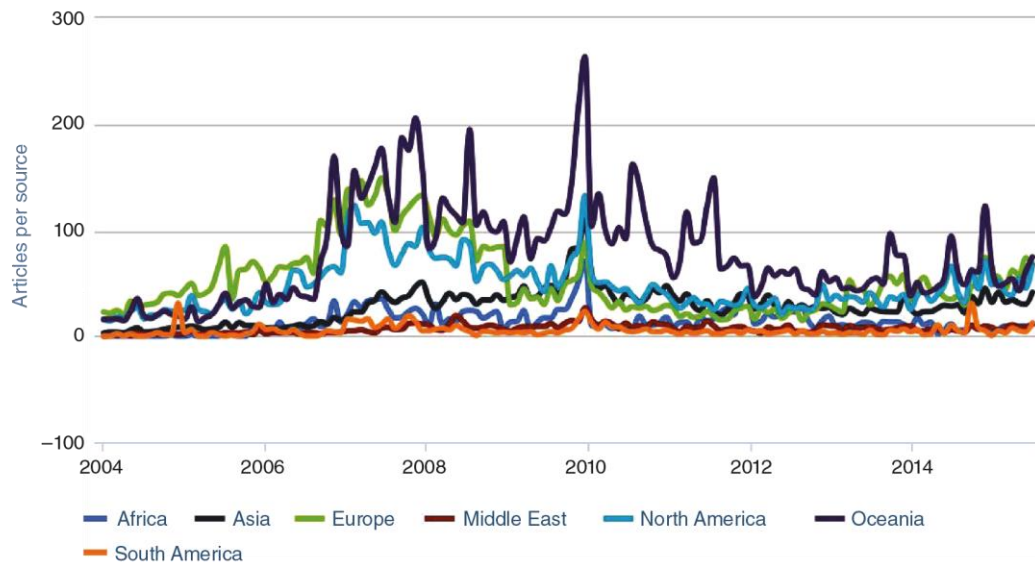


Figure 1 World newspaper coverage of climate change or global warming in 50 newspapers across 25 countries and six continents, 2004–2015 (Boykoff *et al.* 2015; reproduced from Center for Science and Technology Policy Research International Collective on Environment, Culture & Politics).

political issue, the Climate Change Conference in Copenhagen in December 2009, and the United States–China joint announcement on climate change and green energy cooperation by the end of 2014. However, the figure also shows that the Fifth IPCC Assessment Report, published in 2014, had lower media visibility and public attention compared to the Fourth IPCC Report, although it provides better knowledge on the causes and effects and on the predictions of climate change in the future (Fernández-Reyes, Piñuel-Raigada, and Vicente-Mariño 2015).

Media coverage and journalistic norms

Mass media follow ethical codes of pursuing fair, accurate and objective journalistic work. These codes, mainly referred to as *professional norms*, consider journalism as a platform for an open

and transparent discourse between different sectors of society. In this context, media strive for independence, truth, and accuracy in coverage (ASNE 2002), which are reflected in similar values and attitudes toward their professional work (Bennett 1996). However, these ethical codes or norms can also be considered as *styles of storytelling* that focus on how these rules critically shape media content and become an inherent part of communication (Boykoff and Boykoff 2007), also known as “news values” (Galtung and Ruge 1965). In this context, journalists follow the newsworthiness of a message according to a set of criteria such as familiarity, negativity, meaningfulness, unexpectedness, personalization, conflict, and others. Galtung and Ruge call these criteria the “conditions for news,” which turn facts or events into media messages. These norms also intersect with the journalistic norm of balance, that is, the common practice of

providing both sides of any dispute with roughly equal attention (Boykoff and Boykoff 2004). This is an activity that often appears to fulfill pursuits of objectivity (mainly prevalent among US media). In coverage of complex issues such as stem cell research, nuclear power, or genetic engineering, balance can provide a validity check for reporters who are on deadline and do not have time nor scientific understanding to verify the legitimacy of various truth claims about the issue (Dunwoody and Peters 1992).

Media coverage is also informed by authority-order bias, where journalists tend to rely more heavily on authoritative, legitimate, and official sources. While in some cases these authorities step in to restore order, at other times they serve to increase political concern.

Media interventions seek to enhance understanding of complex and dynamic human–environment interactions such as climate change. However, the characteristics of such interactions often run contrary to journalistic norms and values like personalization or novelty. As a result, vague and decontextualized reporting confuses rather than clarifies understanding and engagement on environmental issues. The *New York Times* journalist Andrew Revkin (2007) has referred to reporting without context as “whiplash journalism.” Context helps sort out marginalized views from counterclaims worthy of consideration on various aspects of environmental issues.

Values and ideological influences on media messages

As scientific understanding improves, it often unearths new and more questions to be answered (Sarewitz 2004). What seems like a simple process to define what constitute “environmental problems” is actually influenced by priorities,

ideologies, experiences, and perspectives. In other words, anytime the biophysical is captured and categorized, it undergoes varying degrees of interpretation, as influenced by power and scale via temporal and spatial contexts. The media play an inherent role in representing certain interpretations of the biosphere.

For example, in the case of climate change, media coverage of environmental issues is thus not a simple collection of news articles and clips produced by journalists; rather, media coverage signifies *key frames* derived through complex and nonlinear relationships between scientists, policy actors, and the public that is often mediated by journalists’ news stories (Trumbo 1996). These frames emerge in media representations regarding a certain issue to make it “more salient in a communicating text, in such a way as to promote a particular problem definition” (Entman 1993, 52). Asymmetrical influences also feed back into these social relationships and further shape emergent frames of “news,” knowledge, and discourse. For example, frames regarding climate change coverage in the media can be associated with different actors by emphasizing problems and causes (scientists) or judgments and remedies (politicians). The number of scientists in the media as news sources may decline “as the issue becomes increasingly politicized” (Trumbo 1996, 269). As another example, *positivist* approaches work to understand and interpret already existing social reality; meanwhile, *constructivist* positions emphasize interrogations regarding how power and scale construct, reflect, and reveal varied and complex phenomena such as language, knowledge, and discourse (Forsyth 2003). With these varied approaches into the complex and nonlinear interactions shaping public perceptions of environmental issues, geographical research has converged on the notion that media representations and its framings are not simply translations

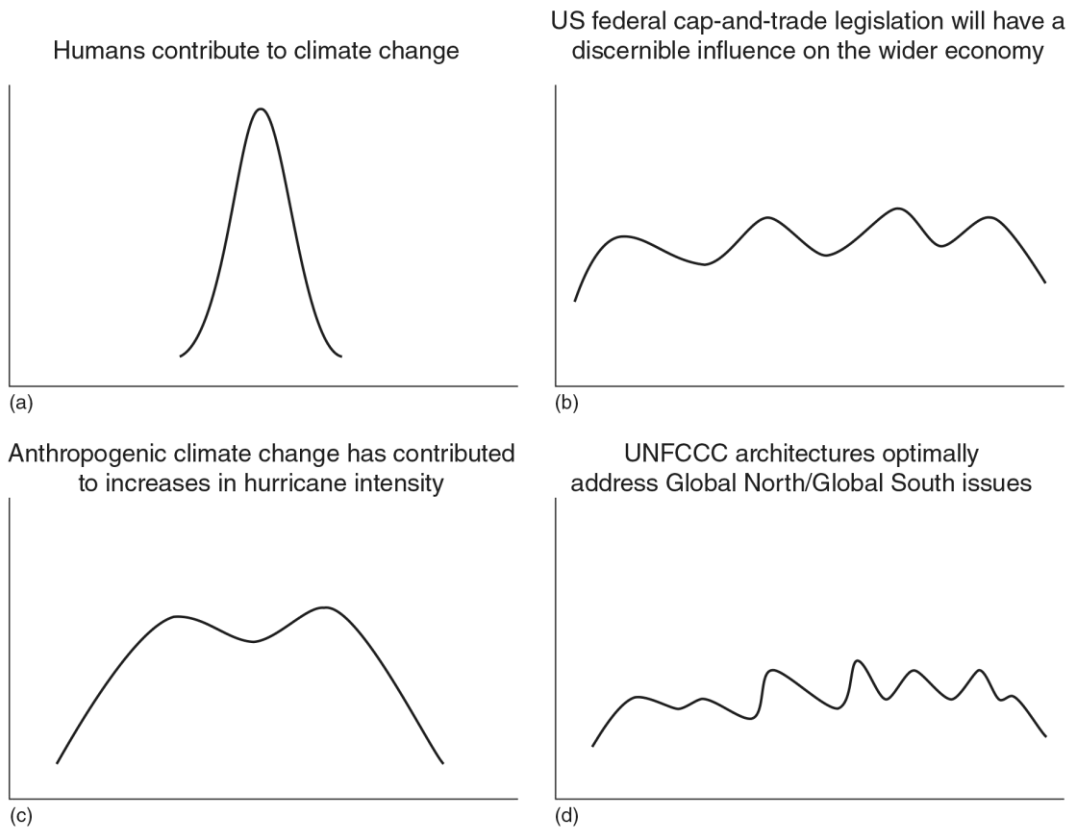


Figure 2 This schematic shows the distribution of relevant expert agreements and disagreements on climate science and governance issues (over time from left to right). The curve illustrates the relative strength/weakness of agreement or disagreement. The figure is adapted from Boykoff (2011) and comments by *New York Times* journalist Andrew Revkin at an annual Society of Environmental Journalists meeting.

of the “truth.” This becomes even more evident in the context of climate change and its polarized perception between different societal groups. Taking climate change as an example of a key environmental issue, Figure 2 shows facets of science and environment, where agreement is strong and others where there is disagreement.

Consider panel (a): “Humans contribute to climate change.” Over the past decades, reports and findings have increasingly signaled a broad scientific consensus – despite lingering

uncertainties regarding the *extent* of attribution – that human activity has significantly driven climate changes in the past two centuries, and that climate change since the Industrial Revolution has not been merely the result of natural fluctuations. In other words, detection (of climate change) and attribution (to human activities) research has improved significantly. Noting this improved understanding, the United Nations’ IPCC has articulated this evidence-based view through multiple assessments of emergent

peer-reviewed climate research and many stages of consensus-driven processes. The steady flow of IPCC reports since the 1990s has represented “critical discourse moments” (Carvalho 2005) that describe happenings within an established discourse (e.g., on climate change) that may challenge the dominant and established positions on the topic. Those critical discourse moments have solidified a narrative of consensus, supported too by similar declarations from national science academies and other scientific groups over time. Despite this convergence, when mass media report on this issue, excessive attention can be paid to the tails in this schematic: outlier viewpoints at the ends of the distribution, rather than those under the bell curve that converge on agreement, have actually been found to have received amplified attention in media representations in particular country contexts such as the United States and United Kingdom (Boykoff 2011).

Panel (b) considers relevant expert-based views on the statement that “US federal cap-and-trade legislation will have a discernible influence on the wider economy.” As shown, a more flat and wavy line most accurately depicts the relative strength of agreement from “positive effect” through “no effect” to “devastating effect” (in schematic from left to right). In other words, panel (b) shows that there are a variety of legitimately divergent views on the potential effects that the implementation of cap-and-trade legislation may have on the wider US economy. Panels (c) and (d) illustrate further climate science and governance questions that have a range of perspectives, views, and opinions. The bimodal distribution of panel (c) captures that the relevant expert community working on questions of links between hurricane intensity and anthropogenic climate change may cluster around two peaks of consensus rather than one; that is, this represents what can at times be an issue where there are two convergent and

rival explanations for an issue, within legitimate expert communities of researchers.

Overall, broad-brush treatment by mass media can then both privilege marginal views as legitimate, by giving them media coverage although they lie far from the main consensus (see panel (a), and unduly dismiss legitimate claims where consensus is less strong (exemplified by panels (b) and (d)). Numerous factors – within the issues themselves, as well as external contextual factors – contribute to the changing shape of these distributions over time.

This shows that fair, accurate, and precise media portrayals of environmental issues become even more perennial, central, and fundamental challenges. By more accurately, precisely, and fairly portraying the contours of the varied aspects of environmental change, understanding, meaning, and potential public engagement have greater opportunities to succeed.

Media and cultural politics of the environment

Media and environment interactions – from processes to effects – are usefully situated in a wider cultural politics of the environment. Cultural politics refer to processes involving how meaning is constructed and negotiated across space and place. This involves not only the representations and messages that are present in media discussions but also those that are absent. These discussions then shape how members of the public perceive possible actions and social practices at the human–environment interface. In other words, media frames influence the ways that the environment is perceived and discussed and how the public then view environmental issues, from formulations of what are “problems” to considerations of potential, feasible, or desirable ways to alleviate problems (sometimes referred to as “solutions”). These

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elements are also inextricably shaped by ongoing environmental processes themselves.

Mass media representations arise through large-scale (or *macro*) relations, such as decision-making in a capitalist or state-controlled political economy, and individual-level (or *micro*) processes such as everyday journalistic practices. Whether media are state-run or corporate-run shapes media coverage differently in countries and contexts around the world. While the main principle of democratic news production has been that media organizations then serve as a check on the state, in practice, corporate-controlled media have been argued to have acted systematically in the service of state power (Curran 2002).

For example, in the United States, Fox News (owned by Rupert Murdoch's News Corporation) was seen to have inordinate power over the Republican primary elections leading up to the 2016 presidential election to succeed Barack Obama. While over 17 candidates declared that they were running for the Republican nomination at the time of the first televised debate, Fox News declared that only 10 candidates were going to be able to participate in the first Fox-televised debate. Consequently, candidates were held hostage to Fox's power to determine the rules of selection of candidates to participate in this high-profile event. Meanwhile, billionaire brothers Charles and David Koch – who own Koch Industries, a conglomerate of oil and gas interests – budgeted to contribute nearly \$900 million to candidate coffers and effectively influence the overall 2016 election, in which this episode took place. In this context, the Koch brothers have been prominent climate contrarians, calling into question the wisdom of regulatory interventions to address twenty-first-century climate changes as well as whether humans contribute to climate change at all, and their moneyed influence has particularly tilted the US Republican Party

away from broad scientific evidence as well as public opinion on the subject of climate change. Together, Fox News' and the Koch brothers' influence has meant that candidates vying for the Republican nomination and eventually the US presidency may act in the service of corporate and corporate-controlled media power in order to meet their objectives. As such, productive public discourse on climate change – via media and elsewhere – suffers.

Over time, numerous researchers have explored how economic pressures and ownership structures have impacted news production (Carvalho 2005). Environmental journalism around the world is fraught with capacity challenges (in terms of time, personnel, and financial resources) to collectively cover complex and dynamic stories at the human–environment interface. Journalists, producers, and editors striving for fair and accurate reporting get swamped by these large-scale (*macro*) political economic pressures. Decreased mass media budgets for investigative journalism have adversely affected the communication of scientific information in that complex scientific material has often been oversimplified in media reports. Moreover, critical environmental issues have failed to garner coverage at all. In the name of efficiency, many reporters have increasingly covered a vast range of topics (called “beats”) under tighter deadlines, making it as difficult as ever to satisfactorily portray the complexities of environmental issues amid numerous demands. Moreover, content producers in publishing organizations that have withstood newsroom cuts and shortfalls have faced increased competition from other information platforms, especially from social media (video, audio, and text, along with blogs, Twitter, Facebook, Instagram, YouTube postings, etc.).

These numerous political economic challenges have damaged communication of environmental issues. For example, in many places in the Global

South, journalists often lack the capacity and training to cover the intricacies of environmental science, politics, and governance, as well as access to clear, timely, and understandable environment-related resources.

Other individual-scale (micro) factors include the mobilization and deployment of journalistic norms. The tendency to personalize stories means that coverage focuses on individual claims-makers and sensationalized stories, often subsuming deeper structural or institutional analyses. This connects to dramatization, where coverage of dramatic events tends to downplay more comprehensive analysis of the enduring problems, in favor of covering the surface-level movements. Novelty is important. Commonly, journalists mention the need for a novel “news hook” in order to translate an event into a story. These “new” things are actually novel ways of portraying or depicting already existing things, in the context of ongoing storylines and historicized or pre-existing norms and pressures. In tandem, journalistic valuations of drama, personalities, and novelty can serve to trivialize news content, as it can also lead to the blocking out of news that does not hold an immediate sense of excitement or controversy. However, pursuing these norms is not necessarily linked to reduced coverage.

An example of a dramatic, personalized, and novel event that generated tremendous news coverage is Hurricane Sandy, which struck the East Coast of the United States in late October 2012. Despite scientific uncertainty regarding links between hurricane intensity and anthropogenic climate change (see Figure 2), the event nonetheless spurred coverage focused on conflict and debate, and political actors as well as journalists pointed out that more has to be done in terms of disaster risk reduction, climate mitigation, and adaptation (Eilperin 2005).

In summary, media practices powerfully shape and negotiate meaning, influencing how citizens

make sense of and value the world. Media representations thereby bridge different ways of knowing about the environment, and often mediate public perceptions, attitudes, perspectives, and behaviors related to environmental issues. This can have far-reaching consequences in terms of ongoing environmental scientific inquiry as well as policymaker perceptions, understanding, and potential decision-making. Media representations are at the same time shaped by framings, journalistic norms, and cultural politics of media economy that are inextricably linked with each other.

Going forward, the stronger convergence of traditional and new media means that we should rethink how or if media can still be considered as the democracy watchdog in times of digital turmoil. Climate change as a media topic has so far vividly illustrated how polarizing opinions from traditional media, and increasingly from new media beyond professional journalism, influence public perception and the agenda on the issue. It will therefore become more crucial for geographical research to consider and analyze future roles that various claims-makers have in the creation, maintenance, or silencing of discussions of environmental issues.

SEE ALSO: Environmental governance; Environmental issues and public understanding; Environmental management; Environmental policy; Environmental science; Political ecology

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