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Neela Banerjee, John H. Cushman, Jr., David Hasemyer, and Lisa Song of InsideClimateNews won the 2015 Scripps Howard Environmental Award and were Pulitzer Prize finalists for their investigative journalism, finding that although Exxon scientists warned top executives as early as 1977 “that the buildup of carbon dioxide from burning fossil fuels was warming the planet,” the company worked for the next 20 years “to discredit climate science” (Miller, 2016, para. 39–40). The nine-part story was called “Exxon: The Road Not Taken” (<https://insideclimatenews.org/content/Exxon-The-Road-Not-Taken>). This reporting sparked public controversy, leading to a Department of Justice investigation and lawsuits on both sides, as well as U.S. congressional debate.

CHAPTER 5

Environmental Journalism

News about the environment, environmental disasters, and environmental issues or problems does not happen by itself, but is . . . “produced,” “manufactured,” or “constructed.”

—Dr. Anders Hansen (2010, p. 72)

“I would like to encourage our friends from the media to continue to inspire your readers and viewers to protect our environment. It is important that you continue to investigate and verify the facts, and tell compelling stories of the state of our environment. To play this role effectively, trust and credibility are essential success factors.”

—Mr. Chee Hong Tat, Singapore Minister of State,
Ministry of Communication and Information,
Asian Environmental Journalism Awards (2016)

By now, we’ve seen that our perceptions of nature and environmental issues are shaped by many sources—political debate, art, documentaries, and so forth. Among the important sources about the environment have been journalists and the news media. In this chapter, we explore the emergence and changing nature of environmental journalism, the forces that influence the production of environmental news, and some of the effects of environmental news in the public sphere. Because journalists play such an important role in shaping public opinion, they often come under scrutiny.

Chapter Preview

- The first section describes the emergence of, cycles of interest in, and recent challenges in environmental journalism and news.
- In the second section, we identify some of the journalistic constraints on the production of environmental news, such as newsworthiness, media frames, professional requirements for objectivity and balance, the political economy of the media, and gatekeeping.
- The third section introduces research on media effects. We describe four major theories: (1) agenda setting, (2) narrative framing, (3) cultivation analysis, and (4) the media engagement continuum.
- Finally, we explore some of the impacts of digital technologies on reporters and the changes in coverage of environmental stories, including the rise of citizen journalism.

It is important to distinguish between *environmental journalism* and *environmental news*. By *environmental journalism*, we mean the researching, verifying, writing, producing, and broadcasting of news about the environment to the public sphere, traditionally by trained professionals. In this chapter, we describe the significant role of environmental journalists in communicating about the environment. Then we explore the explosive growth of environmental news—information about the environment (in the colloquial sense, “that’s news to me”) that exceeds the role of environmental journalists and may include firsthand eyewitness accounts, environmental advocates, and/or anti-environmental advocates.

At the heart of environmental journalism is a dilemma. Journalism professor Sharon M. Friedman (2004) observed that environmental journalists working in traditional media still must deal with a “shrinking news hole while facing a growing need to tell longer, complicated and more in-depth stories” (p. 176). In journalistic parlance, a *news hole* is the amount of space that is available in a newspaper or TV news story relative to other demands for the same space. Friedman explains that competition for shrinking news space has increased the pressure on journalists to simplify or dramatize issues to ensure that a story gets printed or aired. As a result, in addition to pressures to use popular digital technologies (such as Twitter), many journalists also are using blogs associated with their newspapers, which often offer greater freedom and, notably, space to tell more in-depth stories with multimodal formats.

When you’ve finished this chapter, you should be aware of some of the factors influencing the production of news about the environment in the public sphere. You should also be able to raise questions about the possible influence of news media in environmental communication.

Growth and Changes in Environmental News

By the 1960s, environmental crises began to appear prominently in U.S. news media—from TV film of an oil spill off the coast of Santa Barbara to *Time* magazine’s story of Ohio’s Cuyahoga River bursting into flames from pollution in 1969. During

the next decades, environmental news would periodically expand and wane. By the 21st century’s second decade, the cumulative effect of “reporting on topics like climate change, biodiversity and toxic chemicals [has been] increasingly validated by developments in science and public policy” (Dykstra, 2016, para. 4). Nevertheless, no journalist hosting U.S. presidential debates in 2016 asked a question about climate change.

In this section, we describe the potential roles of environmental reporting. We also describe the “perfect storm” that’s led to the closing or downsizing of many newspapers and its impact on environmental journalism in recent years—and how the profession is reinventing itself.

Emergence and Cycles in Environmental News

As environmentalism became a formidable force after Rachel Carson’s *Silent Spring* (1962), “environmental journalism grew with it.” Some newspapers began an environmental “beat,” but beat or no beat, reporters found themselves covering issues like dioxin, smog, and endangered species, as well as oil spills, air pollution, and nuclear fallout (Palen, 1998, para. 1). In 1990, the field of environmental journalism was given a boost by the creation of the Society of Environmental Journalists (SEJ), whose mission “is to strengthen the quality, reach and viability of journalism across all media to advance public understanding of environmental issues” (www.sej.org). Today, more than 1,400 journalists affiliated with the SEJ in the United States, Canada, Mexico, and 27 other countries are reporting environmental stories (www.sej.org).

Even as news coverage of environmental issues has grown, the characteristics of this coverage—and the demands on journalists—are not unlike other areas of journalism. Let us consider some journalism fundamentals.

Event-Driven Coverage

Inevitably, contemporary news “is largely event focused and event driven,” and it is this norm that is important in determining “which environmental issues get news coverage and which don’t” (Hansen, 2010, p. 95). Indeed, environmental news thrives on dramatic—and often *gloomy*—events, as former CNN executive producer Peter Dykstra (2016) puts it: “extinctions! oil spills! dead tress!” and more forest fires, hurricanes, and accidents at nuclear power plants (para. 7). Yet, as veteran environmental journalist Bob Wyss (2008) points out, environmental issues rarely are as dramatic as a hurricane. “Rather than striking with a fury, some [stories] ooze, seep, or bubble silently . . . or the story might change so imperceptibly as to be nearly invisible, such as the disappearance of another animal or plant species” (p. 8).

This invisibility of many environmental phenomena presents a challenge for journalists. As media scholar Anders Hansen (2010) reminds us,

the timescale of most environmental problems is ill-suited to the 24-hour cycle of news production: Many environmental problems take a long time to develop; there



Michael Kodas

Photo 5.2

Environmental journalists travel the world to provide eyewitness evidence of ecological atrocities and solutions. Adventure journalism often combines the story of a journalist with whatever news that person is attempting to raise awareness of—or to generate high audience interest in. Often, audiences become caught up in someone's tale of kayaking a river or trekking a mountain and end up learning environmental news along the way. Pictured here is environmental journalist Michael Kodas covering forest fires.

is often uncertainty for years about the causes and wider effects of environmental problems . . . and even where a scientific and political consensus may emerge, the “visualization” for a wider public audience of what is happening requires a great deal of communicative “work.” (p. 96)

As a result, many environmental news stories—like other news stories—present a *snapshot*, a specific moment, event, or action from a larger phenomenon.

Added to this challenge is another difficulty. Many environmental reporters themselves lack training in the issues they're covering. These issues are often complex, ranging from depletion of the ozone layer around the Earth to the health effects of genetically modified organisms. The Knight Center for Environmental Journalism, for example, reported that “only 12 percent of environmental journalists had degrees in scientific or environmental fields” (Wyss, 2008, p. 18). Still, some journalists, such as *ProPublica* journalist Andrew Revkin and the *Chicago Tribune's* staff, including Michael Hawthorne, Patricia Callahan, and Sam Roe, have excelled in reporting on complex issues like climate change and flame retardants in a manner that has informed readers about the causes, long-term impacts, and even the science behind these important subjects. The key to coverage is leveraging how one's story might shape the news cycle.

Cycles in Environmental News Coverage

With the rise of an ecology movement in the late 1960s, environmental news grew in coverage and reached an early peak after Earth Day during the early 1970s. Such news coverage, however, began to disappear in the United States in the 1980s, “just as environmental issues were becoming more complex involving health effects, scientific uncertainty, economic and regulatory issues” (Friedman, 2015). As often happens, a dramatic event in 1989, the *Exxon Valdez* oil spill in Alaska, spurred new interest in the environment. Film of oil-soaked birds and otters and oil-blackened coastlines of Alaska's Prince William Sound filled TV screens nightly. The Tyndall Report, which tracks network news, reported that environmental stories that year saw an unprecedented 774 minutes, combined, on the *CBS Evening News*, *NBC Nightly News*, and *ABC World News Tonight* (Hall, 2001).

The years following the *Exxon Valdez* oil spill, however, would see a marked difference. Shabecoff (2000) reports that not only did environmental stories not grow in the 1990s during President Bill Clinton's administration; the total number of news stories about the environment carried by newspapers and television networks declined substantially. The Tyndall Report tracked a low of 174 minutes in 1996 for the major TV news reports and 195 minutes in 1998 (Hall, 2001). By the end of the 1990s decade, environmental reporters were citing shrinking news holes as one of the most frequent barriers to coverage of environmental news (Sachsman, Simon, & Valenti, 2002).

By 2006, however, coverage of the environment had erupted, across all media—newspapers, TV, online news sites, film, and news magazines. *Time* magazine's cover on April 3, 2006, illustrated the heightened interest: “Be Worried. Be Very Worried” (about global warming). Newspaper coverage of global warming, particularly, spiked during this period (Brainard, 2008b, para. 10), spurred by the riveting documentary film *An Inconvenient Truth* (2006), warning of the dangers of global climate change, and the United Nation's Intergovernmental Panel on Climate Change (IPCC) report in early 2007, concluding that increases in global temperatures since the mid-20th century were “very likely” due to human-caused greenhouse gases (Sec. 2.2). Although news coverage of the environment soon declined again, as we go to press with the start of the new Trump administration in 2017, U.S. environmental news—especially climate news—has again become a steady subject of reporting. It is no surprise, then, that, as Friedman (2004) pointed out, “the environmental beat has never really been stable, riding a cycle of ups and downs like an elevator,” often crowded out when competing against other events—economic news, war and terrorist events, and so on (p. 177). Nevertheless, in their study of newspaper coverage of climate change in 27 countries between 1996 and 2010, Schmidt, Ivanova, and Schaefer (2013) reported that “while coverage of climate change goes up and down in cycles, media attention to climate change has increased very significantly in an overall upward trend across all countries” (Hansen, 2015, p. 211).

By the early 21st century, however, another force had also appeared, one that began what the Pew Research Center (2004) called “an epochal transition [in journalism],

as momentous as the invention of the telegraph or television” (p. 4). This transition would dramatically change how news and information about the environment are communicated to the public.

A Perfect Storm: Decline of Traditional News Media and Rise of Digital News

The conditions that would affect U.S.—and, to a similar extent, Canadian and some European—news organizations appeared early in the new century. “A shrinking US economy, loss of advertising revenues, and audiences migrating to the Internet on tablets and mobile devices produced ‘a perfect storm’ that forced traditional mass media outlets to downsize and change the way they dealt with news.” Environmental journalism was “hit hard by this downsizing” (Friedman, 2015). (Note: The decline in traditional news media’s business model “does not seem to be affecting large Asian countries such as China and India, where newspaper reading is expanding. And no journalism crisis [has been] felt by science journalists—who often cover environmental issues—in Latin America, Asia, North and South Africa, in contrast to science journalists’ concerns in the United States, Europe, and Canada” [Friedman, 2015]. The “decline” described in this chapter, therefore, is culturally specific.)

The drop in revenue has left newspapers, particularly, downsizing everything—daily circulation, the size of newspapers, space devoted to news, and the number of reporters. This has left many U.S. newsrooms with fewer experienced reporters covering the environmental beat. As Bud Ward at the Yale Forum on Climate Change and the Media said, “it’s hard for reporters to focus on ambitious climate reporting . . . when their ranks are being ‘carnaged’” (Ward, 2008, para. 28). Major TV network and cable news have also felt the downsizing: “Across the board in TV news, the numbers aren’t pretty” (Dykstra, 2016, para. 22). For example, the non-profit Project for Improved Environmental Coverage found that, on average, environmental stories make up less than 1% of news headlines (Dykstra, 2016).

While online versions of newspapers are now available, these still depend on staff reporters to produce content, and therein lies a potential problem. When the Seattle *Post-Intelligencer* newspaper initially moved online, for example, it slashed its news staff of 165 reporters and began operating online with only 20 staff reporters (Yardley & Pérez-Pena, 2009). As a consequence, online daily papers increasingly depend on content aggregators and freelance journalists for much of their national reporting.

As traditional new media confront these challenges, many are launching their own websites and expanding links to other news sources, including online sources and news aggregators. *The Guardian*, a prominent British newspaper, for example, has increased its coverage of environmental news “many times over via the Guardian Environmental Network, a group of more than 30 content partners from across the media spectrum” (Brainard, 2015).

FYI **Environmental Journalists Harassed or Murdered**

“It’s easy to bemoan a bleak picture of environmental journalism in the United States, but at least those of us on the domestic beat are alive,” confessed former CNN producer Peter Dykstra. “The Committee to Protect Journalists reports that since 2004, 40 journalists worldwide have been killed in the field while pursuing stories on poaching, illegal logging and other crimes . . . [including] a chilling story of Cambodian reporters murdered while documenting forest destruction” (Dykstra, 2016, para. 37).

“Tree. Rope. Journalist. SOME ASSEMBLY REQUIRED.”

—Wording on a T-shirt seen at a 2016 Trump rally

Do you feel that environmental journalists are threatened and/or perceived as threats where you live? How might that create a problem for a vibrant public sphere?

Breaking News and Environmental Journalism

Environmental news stories do not write themselves. As we learned in Chapter 3, an environmental issue becomes recognized as a *problem* as a result of the constitutive nature of communication itself. In this section, we describe the influences that shape or constrain this “making” of news, which may be imagined as limitations and possibilities.

Newsworthiness

One of the most important practices that affect environmental news reporting is the value, or newsworthiness, of a story. **Newsworthiness** is the ability of a news story to attract readers or viewers. In their popular guide to news reporting, *Reaching Audiences: A Guide to Media Writing*, Yopp, McAdams, and Thornburg (2014) identify eight criteria, found in most U.S. media guidelines, that determine the newsworthiness of a particular news story: (1) *prominence*, the public’s interest in how an event might relate to a celebrity or popular public figure; (2) *timeliness*, an event happening right now; (3) *proximity*, the local angle for a particular news audience; (4) *impact*, who or what the event will effect and how; (5) *magnitude*, on what scale the event is occurring, such as size, duration, brightness, and so forth; (6) *conflict*, a struggle between at least two forces or characters; (7) *oddity*, the novelty or rarity of the story that makes it unusual; and (8) *emotional impact*, the human interest of the story, which describes experiences and feelings in a way that ideally moves audiences to take note and to keep reading. As a result, reporters and editors feel they must strive to fit or package environmental problems according to these criteria in producing “newsworthy” stories.

News headlines of the melting of the Antarctica ice sheets, for example, often emphasize the potential impact and timeliness of the inevitable sea level rise from climate change, as in these articles: “Scientists Warn of Rising Oceans from Polar Melt” (Gillis & Chang, 2014) and “Ice Melt in Part of Antarctica ‘Appears Unstoppable,’ NASA Says” (Hanna, 2014). The lead paragraph in the Gillis and Chang (2014) piece elaborated on these themes:

A large section of the mighty West Antarctica ice sheet has begun falling apart and its continued melting now appears to be unstoppable, two groups of scientists reported on Monday. If the findings hold up, they suggest that the melting could destabilize neighboring parts of the ice sheet and a rise in sea level of 10 feet or more may be unavoidable in coming centuries. (para. 1)

While the fate of the Antarctica ice sheets has captured news headlines, coverage of climate change, as we learned above, cycles up and down in U.S. media.

In addition to climate change, it is worth considering an example of an event that was an accident and how that became newsworthy. Following the meltdown of several nuclear power reactors in Japan in March 2011, for example, this front-page headline appeared: “Japan Faces Potential Nuclear Disaster as Radiation Levels Rise.” The news headline stressed the *impact* and *magnitude* of the crisis at the Fukushima Daiichi nuclear plant, which burned after an earthquake and tsunami had struck Japan four days earlier. These criteria were reinforced immediately in the opening paragraph:

Japan’s nuclear crisis verged toward catastrophe on Tuesday after an explosion damaged the vessel containing the nuclear core at one reactor and a fire at another spewed large amounts of radioactive material into the air, according to the statements of Japanese government and industry officials. (Tabuchi, Sanger, & Bradsher, 2011, p. A1)

Later in the Fukushima nuclear plant story, an emphasis on *proximity*, or nearness to readers, emerged to guide the story’s narrative: “After an emergency cabinet meeting, the Japanese government told people living within 30 kilometers, about 18 miles, of the Daiichi plant to stay indoors, keep their windows closed and stop using air conditioning” (p. A1).

Another criterion—*conflict*—is an especially influential factor in news stories about the environment: environmentalists versus loggers, climate scientists versus global warming deniers, angry residents versus chemical companies, and so forth. And such stories of environmental conflict often are accompanied by visual elements—photos, film, and so on. Indeed, some environmental groups like Greenpeace are known for their ability to generate newsworthy stories by their dramatic image events, which take advantage of news media’s desire for pictures, particularly images of conflict. (See “FYI: Image Events and the Environment.”)

One limitation we’ve seen in these two examples of climate and a nuclear accident is that highlighting conflict and human impact (through threats to public

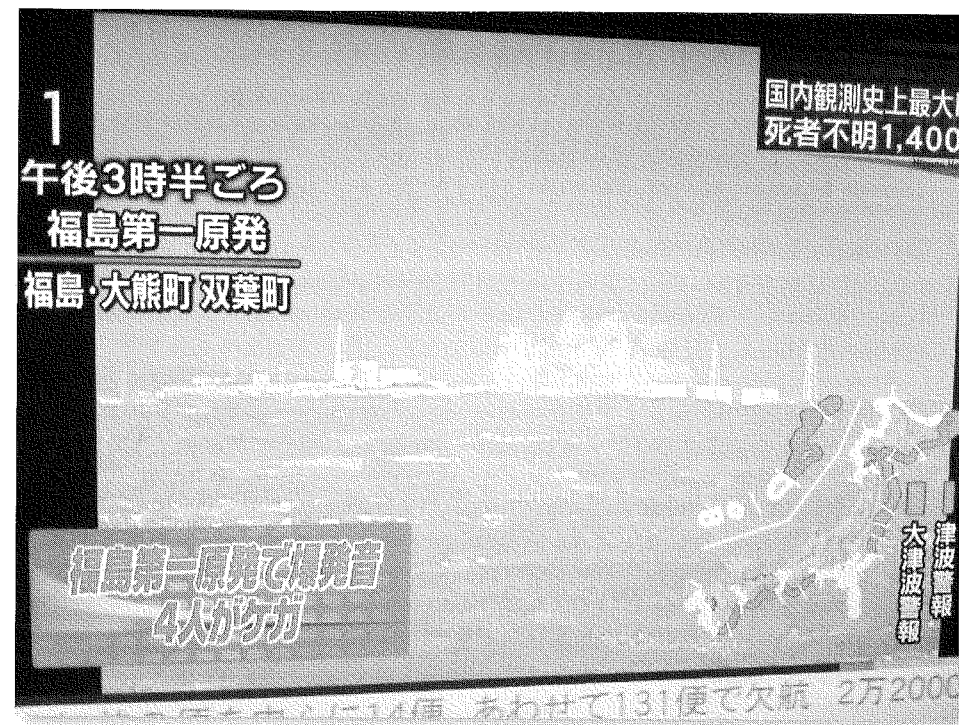


Photo 5.3

Japanese NTV newscast during the crisis at the Fukushima Daiichi nuclear power station after the 2011 earthquake and tsunami.

health or cost) may make environmental news lend itself to a negative frame. Is something bad happening? Are people fighting over something? In contrast, trying to break through the content flood of environmental information with a positive headline about the growing numbers of monarch butterflies, renewable energy profits, or how many people love to vacation in beautiful places outdoors can have a harder time breaking into a news cycle.

Media Frames

In his classic study, *Public Opinion*, Walter Lippmann (1922) was perhaps the first to grasp a basic dilemma of news reporting when he wrote,

The real environment is altogether too big, too complex, and too fleeting for direct acquaintance. We are not equipped to deal with so much subtlety, so much variety, so many permutations and combinations. And although we have to act in that environment, we have to reconstruct it on a simpler model before we can manage it. To traverse the world men [sic] must have maps of the world. (p. 16)

FYI Image Events and the Environment

By offering dramatic visual events as part of a story, environmental advocates have been able to fulfill the newsworthiness criterion and have excelled in gaining photojournalism coverage for their campaigns. Greenpeace pioneered this environmental advocacy tactic in the 1970s in the Pacific Ocean with its dramatic staging of activists in small boats protesting the killing of whales next to massive ships with harpoons posed to kill them; given the enormous size of whales and their stature in our collective imagination, the comparatively small boat of resistance embodied vulnerability in the public sphere in a way that previously had not been done.

Environmental communication scholar Kevin DeLuca (2005) has called these **image events**, or staged, visual events that take advantage of television's hunger for pictures, particularly images of conflict. Recognizing what these shorthand images can provide, environmental advocates can organize photo opportunities accordingly. These have included film footage of large banners, for example, draped from a corporate headquarters proclaiming **END CLEAR-CUTTING OF RAINFORESTS!** DeLuca quotes a veteran Greenpeace campaigner who explained that such image events succeed by creating "mind bombs" and "reducing a complex set of issues to symbols that break people's comfortable equilibrium, [and] get them asking whether there are better ways to do things" (p. 3).

As a result, journalists have sought ways to simplify, frame, or make "maps of the world" to communicate their stories.

The term **frame** was first popularized by Erving Goffman (1974) as the cognitive map or pattern of interpretation that people use to organize their understandings of reality. With this in mind, Entman (1993) defined the *act of framing* as the selection of "some aspects of a perceived reality and [making] them more salient in a communicating text" (p. 56). It is this idea that journalists rely on as they attempt to write or "frame" a news story in a particular way.

In journalism, a **media frame** is the central organizing theme that connects the different elements of a news story (headlines, quotes, etc.) into a coherent whole. By providing this coherence, media frames help readers make sense of new experiences, relating them to familiar assumptions about the way the world works.

Consider the media frame that is the central organizing theme in a news story in the *Alaska Dispatch*, which bills itself as "news and voices from the last frontier." The story's headline, "Aerial Wolf Hunting on Kenai Peninsula Put on Hold," announced a temporary halt to the practice of shooting wolves from small planes "to help boost moose populations" ("Aerial Wolf Hunting," 2012, para. 1). A photo of a snarling wolf's face, with its fangs bared, accompanied the story. The photo, headline, quotes, and narrative structure all revealed the theme of "predator control," that is, shooting wolves, which local hunters believed would help "improve the moose population on the Kenai" (para. 2, 3). All the elements of the news story contributed to an "anti-wolf" frame.

Using different frames invites readers to "see" or view the world differently. And in environmental controversies, the opposing parties sometimes compete to influence

the framing of a news story. Miller and Riechert (2000) explain that each side tries to gain public support for its position, often "not by offering new facts or by changing evaluations of the facts, but by altering the frames or interpretive dimensions for evaluating the facts" (p. 45, emphasis added).

Now compare, for example, the *Alaska Dispatch* anti-wolf media frame with a story from the *New York Times*, "As Wolves' Numbers Rise, So Does Friction Between Guardians and Hunters." A photo of a smiling gray-haired woman, playing with a docile wolf laying on its back, accompanied the story. The lead paragraph stated, "When people like Nancy Jo Dowler started raising wolves here decades ago, the animals were rare in Wisconsin and nearly extinct across the country" (Yaccino, 2012, para. 1). The headline, opening paragraph, and photo introduce a media frame of "conflict," with a wolf-friendly narrative that pits hunters and trappers against "local and national animal rights groups that fear the undoing of nearly four decades of work to restore a healthy number of wolves" (para. 4).

The two news stories oriented readers in very different ways. The first story organized the subject of wolf hunting around concerns for ensuring larger moose populations for hunters, depicting wolves as predators that had to be "controlled." The second story framed wolves in light of their declining numbers—some nearing extinction—and the growing opposition to shooting them—a conflict frame, with a decidedly pro-wolf stance.

The struggle over which frames should define our understanding of the environment is a central feature in the public sphere. Indeed, the history of environmentalism can be understood to be a struggle over different but powerful frames for understanding the natural world and what constitutes an environment "problem." News media, for example, now refer more often to *rainforests* instead of *jungles* and to *wetlands* instead of *swamps*.

Norms of Objectivity and Balance

The values of **objectivity** and **balance** have been bedrock norms of journalism for almost a century. In principle, these are the commitments by journalists to provide information that is accurate and without reporter bias and, where there is uncertainty or controversy, to balance news stories with statements from all sides of the issue that the public deems newsworthy. The principle is not to appear as an advocate but to gather and share information with the public in a compelling way so that the public might make more informed judgments.

Objectivity

In practice, however, the norms of objectivity and balance run into difficulty. Particularly in environmental journalism, reporters struggle to maintain genuine objectivity. While a story on the shooting of wolves, for example, may be accurate on one level, a kind of bias already has occurred in the selection of this story versus others; this occurs also in its framing and the choice of sources that are interviewed (as we just

saw earlier). In another example, environmental communication scholar Anabela Carvalho (2007) found in her study of British newspapers that the discursive constructions of climate change are “strongly entangled with ideological standpoints.” That is, the ideas and values underlying different political views or orientations work as a “powerful selection device in deciding what is scientific news, i.e., what the relevant ‘facts’ are, and who are the authorized ‘agents of definition’ of science matters” (p. 223).

As a consequence, a challenge for “objective” reporting has been the need for journalists to rely on credible sources, that is, sources whose experience or insight readers and viewers will trust as the basis for “truth.” Often, these individuals are those whom some have called the “authorized knowers” of society—scientists, experts in a field, government and industry leaders, and so on (Ericson, Baranek, & Chan, 1989, quoted in Hansen, 2010, p. 91).

Balance

Related sometimes to objectivity is the norm of balance in reporting a story. *Balance* usually means a responsibility to report all sides of story, particularly when there is a controversy. Yet this also can be problematic. As Wyss (2008) points out, “getting both sides of a story, while generally desirable in journalism, does not always work in science and environmental coverage” (p. 62). He cites the longtime science editor for the *Dallas Morning News*, who quipped that “balance in space stories would require that every story about satellites would require a comment from the Flat Earth Society” (p. 62).

Nevertheless, when environmental issues are controversial, or when reporters lack the expertise to adjudicate between conflicting claims, the tendency in journalism has been to balance stories by quoting differing viewpoints. For example, balance was a common practice in much of the early coverage of global warming. Boykoff and Boykoff (2004) cite the following example from a *Los Angeles Times* article in 1992:

The ability to study climatic patterns has been critical to the debate over the phenomenon called “global warming.” *Some scientists believe*—and some ice core studies seem to indicate—that humanity’s production of carbon dioxide is leading to a potentially dangerous overheating of the planet. *But skeptics contend* there is no evidence the warning exceeds the climate’s natural variations. (Abramson, 1992, p. A1, emphasis added)

Even as late as 2010, and with mounting evidence of human-caused climate change, a survey of news directors at radio and TV stations found that “nearly all news directors (90%) believe that, like coverage of other issues, coverage of climate change must reflect a ‘balance’ of viewpoints” (Maibach, Wilson, & Witte, 2010, p. 4).

In recent years, the norm of balance has been sharply criticized. Some media critics have challenged the assumption that there are always two sides of an issue, particularly when empirical data or scientific research strongly supports one side. For example, climatologist Stephen H. Schneider (2009) complained, “A mainstream,

well-established consensus of hundreds of experts may be ‘balanced’ against the opposing views of a few special-interest PhDs. To the uninformed, each position seems equally credible” (pp. 203–204). As a result, balance will be misleading. Boykoff and Boykoff (2004) found that “balancing” in the reporting of global warming in U.S. newspapers actually led to “biased coverage” of the science of climate change and the findings of anthropogenic (human) contributions to global warming (p. 125).

The trend of balancing scientists and skeptics in reports of global warming in recent years, however, has been changing. Brainard (2008b) reported that the news media seem to be “slowly but surely eliminating false balance when addressing human activity’s role in global warming” (para. 6). Still, many newspapers continue to use “qualifying and hedging language,” suggesting uncertainty, “despite ever-growing scientific agreement that human activities modify global climate” (Bailey, Giangola, & Boykoff, 2014, p. 197).

Political Economy of News Media

The term *media political economy* refers to the influence of the economic interests and/or political agenda of the owners of newspapers and television networks on the news content of these media sources. In her critical study of corporate influence on the media, Australian media scholar Sharon Beder (2002) noted that with increasing consolidation of media ownership, some editors or reporters may feel pressure from owners to choose (or avoid) stories and to report news in ways that ensure a favorable political climate for these business or ideological interests. In turn, they “become the proprietor’s ‘voice’ within the newsroom, ensuring that journalistic ‘independence’ conforms to the preferred editorial line” (McNair, 1994, p. 42).

Consider the example of General Electric (GE), one of the world’s largest corporations and former owner of NBC television and its business channel, CNBC. Beder (2002) found that GE was by no means a hands-off owner of its networks. Instead, she reported, GE officials regularly inserted the business’s interests into network editorial decisions. For example, when the Environmental Protection Agency (EPA) found GE responsible for discharging more than a million pounds of toxic chemicals called polychlorinated biphenyls (PCBs) into New York’s Hudson River and proposed that GE pay for a massive cleanup, “the company responded with an aggressive campaign aimed at killing the plan,” spending, by its own estimates, \$10 to \$15 million on advertising (Mann, 2001, para. 2). (Eventually, GE agreed to fund a cleanup plan for the river.)

A more recent study also found a similar tendency in the business-oriented *Wall Street Journal’s* news coverage of climate change. In a quantitative analysis comparing the coverage of climate change in the *New York Times*, the *Wall Street Journal*, the *Washington Post*, and *USA Today* between 2006 and 2011, media researchers Lauren Feldman, P. Sol Hart, and Tijana Milosevic (2015) found that the *Wall Street Journal* was least likely of these newspapers to report on the impacts of and threat posed by climate change.

Finally, the sheer size of some media corporations enables their viewpoints to reach large numbers of readers or viewers. Sinclair Broadcast Group owns numerous

TV stations in the United States, for example, and “has a history of using its television stations to support its political views” (Heffter, 2013, para. 1, 2). For several years, newscasts on select Sinclair TV stations ended the news program with a commentator who spoke of “manmade global warming hysteria that swept the nation,” and who claimed, “most people realize manmade global warming is a hoax” (Hyman, 2011, para. 1–2; see also Heffter, 2013).

Gatekeeping and Newsroom Routines

The decisions of editors and media managers to cover or not cover certain environmental stories illustrates what has been called the **gatekeeping** role of news production. Simply put, the metaphor of gatekeeping is used to suggest that certain individuals in newsrooms decide what gets through the “gate” and what stays out. White’s (1950) classic study “The ‘Gatekeeper’: A Case Study in the Selection of News” launched the tradition in media research of tracking the routines, habits, and informal relationships among editors and reporters and among reporters’ backgrounds, training, and sources.

Many editors find it particularly difficult to deal with the environmental beat for two reasons. First, the unobtrusive or “invisible” nature of many environmental problems makes it hard for reporters to fit these stories into conventional news formats.

Act Locally!

Newsroom Routine Exercise: Personality Profile

One common type of news story features people, including but not limited to interviews, biographies, obituaries, feature stories about trends, tributes, and more. Look at any newspaper today and you will see many of these personality profiles. Have you ever written one yourself? Give it a try:

1. Identify a worthwhile environmental personality and determine why that person is newsworthy. Consider what the person is best known for: an environmental invention? Environmental adventure? Environmental legislation? Environmental writing? Or something else?
2. Gather information on that personality.
3. Decide which personality profile genre you are going to write.
4. Begin writing: Hook your reader with an interesting opening, share compelling details or an interesting anecdote, use direct quotes, mention flaws as well as strengths, and close with a compelling conclusion.

For more examples of personality profiles and the value of such an assignment, see the following source: Hambouz, A., & Ojalvo, H. E. (2011, January 27). Putting personality on paper: Writing about people using Times models. *New York Times, The Learning Network Blog* (online). Retrieved August 16, 2016, from <http://learning.blogs.nytimes.com/2011/01/27/putting-personality-on-paper-writing-about-people-using-times-models>.

Second, environmental issues can be difficult to report because few reporters have training in science or knowledge of complex environmental problems such as groundwater pollution, animal waste, genetically modified crops, or cancer and disease clusters. As a result, “on any given day, an environmental story may be assigned to a science specialist, a health reporter, a general assignment reporter, or even a business reporter” (Corbett, 2006, p. 217).

As a result of these constraints, reporters and editors have been turning to online news services such as ClimateWire (eenews.net/cw) or Environmental Health News (environmentalhealthnews.org). They also draw on **media subsidies**, information provided to the news media by others (e.g., public relations firms, environmental nongovernmental organizations (NGOs), government officials, “think tanks,” and others). Although the press releases, videos, and conferences given by these sources provide content, this information has not always been verified or investigated, due to limitations of time or expertise.

The influences on the production of news—newsworthiness, media frames, and so on—enable but also limit the ability of traditional news media to report on the environment. In the next section, we go beyond this “making” of news to look at the *effects* and *impacts* of environmental journalism.

Media Effects and Influences

Now, we turn to a different question: Just exactly how do media shape our views of nature or our environmental behaviors? Answering this question brings us to two different approaches: (1) media effects and (2) media influences.

Media effects is the term some social scientists use to measure the influence of mass media content, frequency, and forms of communication on audiences’ attitudes, perceptions, and behaviors; these criteria usually are quantifiable, studying the direct and/or cumulative impact of mass media on people.

Media influence, on the other hand, is a multimethod approach to theorizing how publics engage with media, which may include a range of approaches, for example, ethnographies of children talking about how the environment makes them feel. Media influence imagines media as one significant part of culture but does not necessarily assume influence begins with media (over, for example, parents and peers) and does not assume all media/human interaction is best measured with numbers.

In this section, we review four major theories of the relationship between news coverage and audiences’ attitudes and behavior: (1) agenda setting, (2) narrative framing, (3) cultivation theory, and (4) the media engagement continuum. While these theories and approaches vary, they do suggest that the media’s impact is *cumulative and a part of a wider context of social influences* that help construct our interest in, and our understanding of, the environment in the public sphere.

Agenda Setting

Perhaps the most influential theory of media effects relevant to environmental news is *agenda setting*, or the ability to affect the public's perception of the relevance and/or importance of an issue.

Although Walter Lippmann (1922) first suggested the idea of mass media influences on the public, Bernard C. Cohen (1963) coined the term "agenda setting" to distinguish between individual opinion (what people believe) and the public's perception of the salience or importance of an issue. News reporting, he said, "may not be successful much of the time in telling people *what to think*, but it is stunningly successful in telling its readers *what to think about*" (p. 13, emphasis added; see also McCombs & Shaw, 1972). In their study of television, Iyengar and Kinder (1987) likewise defined *agenda setting* this way: "Those problems that receive prominent attention on the national news become the problems the viewing public regards as the nation's most important" (p. 16).

The agenda-setting hypothesis has been influential in some environmental communication research. These studies "have confirmed that the media can play a potentially powerful role in setting the agenda for public concern about and awareness of environmental issues" (Hansen, 2011, p. 18; Soroka, 2002). Eyal, Winter, and DeGeorge (1981); Ader (1995); and Soroka (2002) discovered that the agenda-setting effect is especially strong for *unobtrusive* issues, or those to which readers or viewers have little personal access, and that this effect is most apparent in the public's perceptions of risk or danger from environmental sources.

While the agenda-setting theory may explain the salience or importance of an issue to the public, it doesn't claim to account for what people *think in response to* an issue. Therefore, it is important for us to look at other theories that focus on the role of the media in constructing *meaning*, or ways of understanding environmental concerns.

Narrative Framing

To be clear, researchers generally do not argue that media reports by themselves *cause* public opinion; rather, they claim that "media discourse is part of the process by which individuals construct meaning" (Gamson & Modigliani, 1989, p. 2). In this section, we describe the specific role of media framing in providing *narratives*, or a storyline about an event.

A narrative approach takes seriously the role of media frames that provide organizing themes that connect different elements of a news story into a coherent whole. *Narrative framing*, then, refers to the ways in which media organize the bits and facts of phenomena through stories to aid audiences' understanding and the potential for this organization to affect our relationships to the phenomena being articulated. In other words, media frames can organize the facts in ways that provide a narrative structure—what the problem is, who is responsible, what the solution is, and so on. For example, James Shanahan and Katherine McComas (1999) observed that environmental media coverage is "hardly ever the simple communication of a

'fact'; instead, "journalists use narrative structures to build interesting environmental coverage. . . . Because journalists and media programmers must interest audiences, they must present their information in narrative packages" (pp. 34–35).

A case in point is Schlechtweg's (1992) early study of narrative framing in a Public Broadcasting Service (PBS) report on Earth First! protesters. In May 1990, Earth First! activists poured into California's northern redwood forests for "Redwood Summer" to "nonviolently blockade logging roads, [and] climb giant trees to prevent their being logged" (Cherney, 1990, p. 1). Although the organizers stressed that anyone who disagreed with nonviolence would be barred, tensions grew that summer among loggers, Earth First! activists, and rural communities.

On July 20, 1990, the PBS program *The MacNeil-Lehrer NewsHour* covered the Redwood Summer protests in a report titled "Focus—Logjam." In his analysis, Schlechtweg found that the *NewsHour* report established clear identities for protagonists and antagonists in a narrative frame of tense confrontation that suggested the real prospect of violence.

Protagonists in the broadcast were portrayed through key value terms: "workers," "timber people," and "regular people" who depended on "timber harvests" and "small-town economies" for "jobs," "livelihood," and their "way of life" (p. 273). Conversely, the report identified Earth First! protesters as "apocalyptic," "radical," "wrong people," "terrorists," and "violent" people who engaged in "confrontation," "tree spiking," "sabotage," and "civil disobedience" (p. 273). Schlechtweg argued that, as a result, "Focus—Logjam" implicitly constructed *a narrative frame* that pitted "regular people" against a "violent terrorist organization, willing to use sabotage . . . and tree spiking to save redwood forests" (pp. 273–274).

When media frames and narrative framing reemerge over years and decades, they begin to *cultivate* worldviews that can exceed specific stories. Let us turn to this role.

Cultivation Analysis

Shanahan (1993) describes *cultivation analysis* as "a theory of story-telling, which assumes that repeated exposure to a set of messages is likely to produce agreement in an audience with opinions expressed in . . . those messages" (pp. 186–187). As its name implies, cultivation is not a claim about immediate or specific effects on an audience; instead, it is a process of gradual influence or cumulative effect. The model is associated with the work of media scholar George Gerbner (1990), who stated,

Cultivation is what a culture does. That is not simple causation, though culture is the basic medium in which humans live and learn. . . . Strictly speaking, cultivation means the specific independent (though not isolated) contribution that a particularly consistent and compelling symbolic stream [such as TV viewing] makes to the complex process of socialization and enculturation. (p. 249)

Gerbner's own research looked exclusively at the long-term effects of viewing violence on television—the cultivation of a worldview that he called the "mean world syndrome." This is a view of society as a dangerous place, peopled by others who want

to harm us (Gerbner, Gross, Morgan, & Signorielli, 1986). Others who use cultivation theory to study the environment are interested in the longer-term effects of media on viewers' environmental attitudes and behavior.

Because news media report a stream of environmental threats or concerns, the easy hypothesis of cultivation might be that viewers who watch a lot of television are likely to develop more concern for the environment than light viewers. And some studies have, in fact, confirmed this (see, for example, Dahlstrom & Scheufele, 2010). But this is not always the case. Other analyses have found that heavy media exposure is sometimes correlated with lower levels of environmental concern (Ostman & Parker, 1987). In a study of college students' television viewing, for example, Shanahan and McComas (1999) reported that heavy exposure to television sometimes hampers the cultivation of pro-environmental attitudes. "That television's heavy viewers tended to be less environmentally concerned suggests [that] television's messages place a kind of 'brake' on the development of environmental concern, especially for heavy viewers" (p. 125).

Interestingly, Shanahan and McComas found that a decrease in environmental concern among heavy television viewers is stronger among politically active students. This finding appears to contradict what we said earlier about the effects of agenda setting; that is, the more frequent the coverage of a subject, the more salience it gains. How is this explained?

Cultivation researchers explain this pattern as *mainstreaming*, or a narrowing of differences toward a cultural norm. From this perspective, television's consistent stream of messages may draw groups closer to the cultural mainstream, which, in many television programs, is "closer to the lower end of the environmental concern scale" (Shanahan and McComas, 1999, p. 130). A second explanation for the decrease in environmental concern among heavy viewers of television is sometimes termed "cultivation in reverse" (Besley & Shanahan, 2004; Shanahan, 1993). In other words, media may cultivate an anti-environmental attitude through a persistent *lack* of environmental images or by directing viewers' attention to other, non-environmental stories. Thus, by ignoring or passively depicting the natural environment, researchers found that television tends to marginalize the environment's importance.

When imagined as one of many productive ways to engage media studies, these media effects studies can be a compelling part of a bigger picture. Some scholars have begun to push back, however, on the idea that media effects should be the sole approach to media studies in environmental communication. (See, for example "Another Viewpoint: Children as Environmental Video Co-producers.")

Media Engagement Continuum

More and more, media and critical theorists are attempting to think about the impact of media in ways that enable a less scientific or more humanistic way of imagining the relationship between the media and the public. For example, the Florida-based Harmony Institute studies how media shape the public sphere. One of its many projects was a 2010 study of the popular documentary *Waiting for Superman*, which focused on

Another Viewpoint: Children as Environmental Video Co-producers

How much does our age shape the ways in which we accept, negotiate, or resist media? David Gauntlett is a professor of creativity and design who has worked with a range of organizations, including the BBC, Tate, and LEGO. He argues that the media-effects model too often underestimates children and focuses too much on conducting research "on" rather than research "with" children. As one example, Gauntlett (1998) designed a study in Leeds, England, to better understand 53 "children's perceptions of the environment, and how these may have been influenced by television material" by co-producing seven videos at seven different schools after a period of interactive engagement with the children. Arguing that this approach does not lend itself to short, straightforward summaries, he nevertheless offered these findings:

1. The children appeared to bring "a high level of media literacy" to the project, being familiar with elements of genre, veracity, and more.
2. The children also showed concern about environmental matters, especially pollution and the need for green, open spaces—although they also seemed aware that their everyday practices did not necessarily match these concerns.
3. Environmental news in the media, particularly television, was a strong influence on the children and made them feel overwhelmed and unable to imagine how they could make a difference.
4. The hegemonic or dominant cultural message the children perceived was domestic, even local, and individualized.

We recommend reading Gauntlett's full study, which includes insights on how economic class and ethnic diversity did and did not shape perceptions.

SOURCE: Gauntlett (1998).

public education in the United States. Philip M. Napoli (2014) created a figure from this research to illustrate the findings about the **media engagement continuum**, which imagines audiences on a spectrum from passive to active, including (in order): experience ("website views, Twitter followers, Facebook likes, screening attendance"), expressions/sharing ("comments, user reviews/ratings, petition signatures, website registrations, Facebook shares, Twitter mentions," and more), participation ("user generated content, participating in events, advance registration, inviting others," etc.), and action ("organizing events, donating, signing petitions, volunteering"; p. 17).

This continuum, Napoli argues, reflects a broader conversation about public engagement that includes providing opportunities to gain access to information, to voice one's opinions, and to take action. Although ethnographic and other approaches are valued by this approach, numerical metrics also may be used to quantify some of these practices, including content downloads, widget or application installations, video views, volume of online discussion, tracking a mention or sentiment online, recommendations, reviews, comments, and other indicators of network influence (e.g., followers, pass-alongs, etc.).

Some remain cautious of quantifying media engagement solely with numerical data. The president and founding general manager of the news site *ProPublica*, Richard J. Tofel (2013), has argued, “We should want to take great care that we not create pressure to undertake only that work the outcomes from which are likely to be quantifiable” (p. 20); “there is no one reliable measure of journalism’s impact, no single algorithm that can be devised, no magic formula to load into a spreadsheet or deploy in an app” (p. 21). Although debate continues about various approaches to studying and assessing news media in the public sphere, a broader appreciation of the wide range of practices in which media organizations are engaged and the implications of various ways of evaluating engagement promises to expand our understanding of the impact of media on the public in relation to environmental news and vice versa.

Digital Technologies and the Transformation of Environmental News

Although traditional news media continue to play an important role in the news coverage of the environment, “a tsunami-like impact” from social media and other digital technologies has emerged in the wake of the decline of traditional media (Friedman, 2015). Online services and social media have impacted not only reporters in their day-to-day work but also news sources themselves—from online environmental news services to citizens’ use of social media to report eyewitness accounts of environmental events.

Digitizing Environmental Journalism

Changing Reporters’ Routines

As newspapers, radio, and TV stations launched website versions of their news, the work of environmental reporters and the content of news itself changed dramatically. With their websites showcasing more (and longer) news stories, more (and crisper) photographs and video, and 24/7 coverage, environmental journalists are facing new demands for freshening content (and doing so via multiple feeds). The *Times Picayune* newspaper of New Orleans provides a vivid example of these changes.

In 2012, the *Times Picayune* cut its daily newspaper’s circulation to publish only three times per week, laying off some 200 employees. It also expanded its website. One reporter who stayed at the newspaper was the Pulitzer Prize-winning environmental journalist Mark Schleifstein. As a result of the changes at the newspaper, Schleifstein said his “workday has already expanded in order to fill the daily web feed” (Sachsman & Valenti, 2015). He explained,

When I cover a meeting, I’ll set up my laptop, using my cell phone as the hot spot, and sometimes I’ll be tweeting, basically using that as my note-taking process . . . and also taking general notes, while at the same time trying to get up and take a picture of the speaker, or I may actually do some video. (Archibald, 2014, p. 21; quoted in Friedman, 2015)

Overall, as Sachsman and Valenti report, the *Times Picayune*’s “expanded delivery via the Web now offers expanded stories, including aggregated input, some of which is . . . coming from Schleifstein’s desk/computer/Droid operation.”

In addition to criteria of newsworthiness for stories, journalists also take into account balancing written communication with strong visual elements. Digital media formats expand opportunities to include not only still photographs, but also videos, infographics, documentaries, motion graphics or animation, *interactives* (defined as a two-way flow of information, for example, allowing audiences to submit information to receive more information, like submitting personal information to find out a calculation of one’s carbon footprint), and more. Websites also enable news corporations to link short-term news cycles with longer-term reporting on a particular topic. Exemplars include “SEACHANGE: The Pacific’s Perilous Turn,” which the *Seattle Times* launched in 2013 to cover ocean acidification, and the “Powering a Nation” initiative on U.S. energy, launched in 2010 by the School of Journalism and Mass Communication at the University of North Carolina at Chapel Hill. These sites include video, photographs, maps, stories, a glossary of terms, a discussion board, or an opportunity for readers to link directly to new updates to the ongoing story.

While these sites offer exciting opportunities, they also pose “significance challenges even to the most skilled and experienced reporters” (Boykoff & Yulsman, 2013, p. 7). One source for environmental news that has proved invaluable for many reporters in this new context has been the role of online environmental news organizations.

Online News Organizations

By the first decade of the 21st century, online platforms featured a wide range of news and information, including journalists’ blogs, videos, and news services, as well as websites of scientists, environmental groups, and governmental agencies such as the EPA. Among the earliest and most influential of these platforms were *environmental news services*. These are news aggregation sites—some with original reporting—offering access to journalists, scientists, government officials, and other readers looking for more in-depth environmental news and timely information.

One of the most prominent of these services is Environment & Energy Publishing (E&E; eenews.net). E&E offers a suite of news services, including a wire service, E&E TV, and special sites providing detailed coverage of energy, public lands issues, water, climate change, and other issues. Its *Land Letter* (eenews.net/11), for example, specializes in natural resources (e.g., wilderness, oil and gas drilling on public lands, etc.). More recently, E&E launched *ClimateWire* (eenews.net/cw), a premier source for daily news on climate-related stories.

While E&E is subscription-based, other online news sites are freely available to the public as well as to reporters. “Websites like *Vox*, *Huffington Post* and *Mashable* show a more vibrant side of the [environmental] beat, with regular coverage and a strong social media reach” (Dykstra, 2016, para. 24). For example, the *Huffington Post*’s daily Green section (huffingtonpost.com/green), the leading online environmental news site among 12 national news services, also features 42 environmental blogs (Friedman, 2015).

Some of the best environmental reporting today is coming from nonprofit news sites such as *Environmental Health News*, *ProPublica*, and smaller start-up sites like *InsideClimate News* (insideclimate.org). In fact, *InsideClimate News* won a Pulitzer Prize in 2013 for national reporting for its news series “The Dilbit Disaster: Inside the Biggest Oil Spill You’ve Never Heard Of.” The series was a detailed investigation revealing the inept response to a 2010 pipeline rupture that spilled “a million gallons of bitumen, a thick, dirty oil from Canada’s tar sands” into Michigan’s Kalamazoo River (Brainard, 2015). Curtis Brainard, who covered the environment for the *Columbia Journalism Review* and is now at *Scientific American*, called *InsideClimate News*’ “Dilbit Disaster” series “not only public service journalism at its best, it was new media at its best” (n.p.).

Social Media and Citizen Environmental Journalism

While the majority of original news reporting “still comes from the newspaper industry,” social media and mobile applications not only are changing the ways in which people receive news, but are also helping produce news (Mitchell, 2014,



Christopher Polk/Getty Images Entertainment/Getty Images

Photo 5.4

Celebrity speeches and events can make an ongoing environmental issue more newsworthy. After Leonardo DiCaprio’s 2016 Oscar acceptance speech dedicated to climate action and indigenous rights, the media effects were noticeable. Eric C. Leas and colleagues found that on Twitter, the “DiCaprio effect” surpassed the daily average effect of the 2015 Conference of the Parties (COP) and the Earth Day effect by a factor of 3.2 and 5.3, respectively,” and in terms of Google searches, the “increase was 3.8 and 4.3 times larger than the increases observed during COP’s daily average or on Earth Day” (Leas et al., 2016, n.p.).

para. 5, 16). This is especially true when it comes to generating and receiving news about the environment.

Social Media and Eco-news

It is no accident that environmental reporters are tweeting and posting to blogs. As the Pew Research Center’s Journalism Project reports, “half of Facebook and Twitter users get news on those sites as do 62% of reddit users” (Matsa & Mitchell, 2014, para. 2). And not only reporters but environmental groups, government agencies, climate scientists, and a host of Twitter feeds are also providing environmental news, from the EPA’s account (@EPA) and the Outdoors Blog’s Global Warming page (twitter.com/globalwarming) to the Green News Report (twitter.com/GreenNewsReport) and the National Oceanic and Atmospheric Administration’s feed (@NOAA).

While traditional news media assumed a kind of unidirectional, “broadcast” model for disseminating news, social networking users are also generating a cornucopia of news and information about the environment. Beyond Facebook, for example, social networking sites featuring news about the environment are proliferating—from familiar sites like Treehugger (treehugger.com), MindBodyGreen (mindbodygreen.com), and Reddit: Environment (reddit.com/r/environment) to sites like Topix: Environmental Law (topix.com/forum/law/environmental), an active site for debate about environmental law and politics. (We explore the uses of social media further in Chapter 10.)

Still, some—journalism scholars especially—have posed some provocative questions about the popularity of new/social media for news and information about the environment, generally, and for handling “big” issues like climate change. (For some of these questions, see “Another Viewpoint: Some Questions About Social Media and Climate Change.”)

Finally, more and more individuals are using their smartphones and other mobile devices to contribute to environmental reporting by taking photos or videos and through other actions (Matsa & Mitchell, 2014). Let’s look a little further at this trend toward citizen journalism.

Citizen Environmental Journalism

With the widespread use of smartphones, tablets, and digital cameras, citizens are increasingly “playing important eyewitness roles around news events” (Mitchell, 2014, para. 16). Some are calling this trend **citizen environmental journalism**, when citizens in the public not trained in the field of journalism share information (usually via social media) about an environmental event or condition they have witnessed and/or wish to advocate on behalf of.

While ordinary citizens have often appeared as “sources” in traditional news stories—a mother concerned that her child’s asthma is aggravated by pollution from a nearby coal plant, for example—many are increasingly assuming the role of reporters themselves for breaking news stories. “Recent years have seen journalist-source relationships dramatically recast . . . with citizens making the most of the internet and digital technologies to engage in their own forms of reportage” (Allan & Ewart, 2015).

Another Viewpoint: Some Questions About Social Media and Climate Change

How effective are new/social media in producing and circulating news and information about climate change? Climate change communication researchers Max Boykoff, Marisa McNatt, and Michael Goodman (2015) have posed several challenging questions about the influence of digital technologies in this important arena:

1. Does increased visibility of climate change in new/social media translate to improved communication or just more noise?
2. Do these spaces provide opportunities for new forms of deliberative community... and offline organizing and social movements? ... Or has the content of this increased coverage shifted to polemics and arguments over measured analysis?
3. In this democratized space of content production, do new/social media provide more space for contrarian views to circulate?
4. And through its interactivity, does increased consumption through new/social media further fragment public discourse... through information silos where members of the public can stick to sources that help support their already held views?

SOURCE: Boykoff, McNatt, and Goodman (2015).

This reversal of journalist–citizen roles occurred, for example, during the disastrous oil spill in the Gulf of Mexico in 2010, when citizen journalists helped with the crowdsourcing of information:

As journalists scrambled to gather and interpret official assertions in the face media blackouts, ordinary citizens... stepped in to provide valuable, near instant information via websites and social media platforms, such as Twitter. News organizations were quick to draw on these accounts, especially where the eyewitness accounts of those directly affected by events were concerned (Veil, Buehner, & Palenchar, 2011, as quoted in Allan & Ewart, 2015)

Citizen eyewitness reports during the *Deepwater Horizon* disaster also involved the creative use of aerial digital cameras to map the spreading oil and its threats to marine life. One of the organizers explained,

For less than \$100 in parts, we used helium balloons and kites to send cameras to over a thousand feet, and stitched the resulting images into high-resolution maps using our free, open-source software. Over a hundred volunteers hit the beaches to take tens of thousands of photos, depicting slicks, oiled wetlands, and the birds, fishes, and plants threatened by the disaster. (Griffith, Dosmagen, & Warren, 2012, quoted in Allan & Ewart, 2015)

In commenting on the role of citizen environmental journalists during the Gulf oil crisis, researchers Stuart Allan and Jacqueline Ewart (2015) observed, “There is

little doubt that the value of citizen contributions was considerable, not least in helping to bridge the gaps between official expertise—both scientific and journalistic—and that of the lay publics committed to alternative forms of fact-finding.” Whether shared by everyday people or professionals, breaking news also can involve error. This is why we often find journalists drawing out a breaking news story to include profiles, analysis, explanatory reports, and investigative journalism, the last of which takes a longer time—sometimes years of staff labor. Of course, environmental investigative reporting is also much more expensive in a time of tightening budgets.

Nevertheless, we can’t end this section without a demurrer: As our journalist friends remind us, while digital technologies are immensely popular with many, passing images and information around the world in seconds, environmental journalists are still highly influential sources for decision makers and opinion leaders. Newspapers like the *New York Times*, the *Wall Street Journal*, and the (London) *Times*, for example, and television news such as CNN and NBC or the BBC and Sky News (in the United Kingdom) remain pivotal news sources for many politicians, government officials, industry leaders, and others. Research has found that traditional news media agenda setting has an impact on decision makers, including the effect of news photographs of environmental issues on policymakers, though less so on the general public (Hansen, 2015; Jenner, 2012). That’s one reason why we’ve spent time in this chapter on topics like *agenda setting* and *media impacts*, because the attention given to environmental issues by traditional news media continues to exert an influence on those decision makers who often hold the power to affect the outcome of these issues.

SUMMARY

Given the global reach of environmental crises and celebrations, we often rely on the reports of others, including TV reports, social media tweets, newspaper articles, and stories on the radio. Yet news media are neither innocent nor neutral in their representations of the environment.

In the first section of this chapter, we described the emergence, nature, and cycles of environmental journalism.

In the second section, we looked at some of the journalistic constraints on news production, including newsworthiness, media frames, objectivity and balance, political economy, and gatekeeping and newsroom routines.

The third section examined media effects and impacts, as well as identified four theories of assessing the role of environmental journalism in shaping communication in the public sphere: (1) agenda setting, (2) narrative framing, (3) cultivation analysis, and (4) the media engagement continuum.

Finally, we described some of the changes that digital technologies are bringing to news organizations, including the impact on environmental reporters, the growth of online news services, the role of social media, and the rise of citizen environmental journalism.

SUGGESTED RESOURCES

- The Pew Research Center's *The State of the News Media* is an annual report that examines trends in the U.S. news media—the media's growth (or decline), the role of digital technologies, revenue, and more: <http://www.journalism.org/packages/state-of-the-news-media>.
- The Society of Environmental Journalists (SEJ) honors top environmental journalists annually; go to its website to find out who won last year and what criteria are affirmed: www.sej.org.
- Michael Kodas is an environmental writer, photojournalist, and faculty member who wrote the book *High Crimes: The Fate of Everest in an Age of Greed*; he now is known internationally for covering the “beat” of forest fires, the topic of his second book. Today, when a notable forest fire occurs, he often is hired as a freelance journalist by many different news sources. Search his name and the topic online (“Michael Kodas forest fire”): How many different news outlets do you see his byline associated with? What are the advantages and disadvantages of environmental journalists working freelance?
- With the increase in media devices and channels, it is hard to sort through information to find the news that is worthwhile. Seattle-based *Grist* (www.grist.org) is an online news clearinghouse with a bonus—they attempt to foster a sense of humor as they share and create environmental news content. Check out its website, Facebook page, or Twitter account to see which stories they are sharing this week or to have a laugh!

KEY TERMS

| | |
|--------------------------------------|--------------------------------|
| Agenda setting 106 | Media effects 105 |
| Citizen environmental journalism 113 | Media engagement continuum 109 |
| Cultivation analysis 107 | Media frame 100 |
| Environmental journalism 92 | Media influence 105 |
| Environmental news 111 | Media political economy 103 |
| Frame 100 | Media subsidies 105 |
| Gatekeeping 104 | Narrative framing 106 |
| Image events 100 | News hole 92 |
| Interactives 111 | Newsworthiness 97 |
| | Objectivity and balance 101 |

DISCUSSION QUESTIONS

1. What media sources do you trust in answering the following question: Did Exxon know of worrisome climate change trends in the 1970s but worked for the next 20 years “to discredit climate science”? (Miller, 2016, para. 39–40). Identify three sources for this news story: How do these sources frame the actions of Exxon? How do you assess the objectivity and balance in the reporting? In class discussion, compare your findings with others.
2. How do you feel about the journalistic norms of objectivity and balance in reporting environmental stories? What does it mean to be “objective” in reporting on climate scientists’ forecasts? Should such reports be “balanced” with dissenting views? Or is the public sphere better off having transparency, that is, knowing the bias of a particular news source and reading it as expertise from a particular perspective? Boykoff, McNatt, and Goodman (2015) caution about “information silos,” where people visit only those news or information sources with which they agree. How often (if at all) have you checked out “opposing” news sources?
3. The online global lifestyle magazine *The Outdoor Journal* was first launched in India and now has content from the United States (<http://www.outdoorjournal.us>), Europe, and beyond. Read some of the magazine’s headlines and discuss with a peer: Do these stories create value for nature? Are they “adventure journalism” that balances environmental information with fun? How do they set an agenda for which audience about what the public sphere should reflect and might deflect when it comes to outdoor adventures?
4. Interactives are increasingly popular ways to personalize news stories and gather big data on audiences for analysis or resale. You probably have a favorite that has moved you, which you can share with others. If not, see, for example, *Losing Ground* (<http://projects.propublica.org/louisiana>), a 2014 collaborative environmental journalism interactive project that maps how most of southeastern Louisiana “is losing a football field of land every 48 minutes . . . due to climate change, drilling and dredging for oil and gas, and levees on the Mississippi River.” Another example is the 2016 Oil and Gas Threat Map, created by Earthworks, Clean Air Task Force, and FracTracker Alliance, with publicly available information, videos, and interviews, showing what they believe is the widespread public health threat caused by methane gas (<http://oilandgasthreatmap.com/threat-map>). Also noteworthy, students at UNC Chapel Hill created this website: *Coal: A Love Story* (<http://mj.unc.edu/research/student-work/coal-love-story>).