The Ecomodernists: Journalists Reimagining a Sustainable Future

Declan Fahy and Matthew C. Nisbet

Full reference: Fahy, Declan and Matthew C. Nisbet. 2017. The ecomodernists: Journalists reimagining a sustainable future. In Peter Berglez, Ulrika Olausson, and Mats Ots, eds., *What is sustainable journalism? Integrating the environmental, social, and economic challenges of journalism,* 39-57. London: Peter Lang.

Abstract:

Journalism informed by ecomodernist ideas fulfils a vital need in public and political debates over sustainable development. Ecomodernist journalism offers a particular vision of what sustainable development looks like and how it can be achieved. Ecomodernist journalism also critiques what its advocates view as faulty assumptions that underpin competing policy proposals for a sustainable future. In this chapter, we analyze the work of high-profile journalists writing on the environment and climate change who draw on and apply principles of ecomodernism to offer a distinct framing of sustainable development. We demonstrate how the philosophy informs the work of these writers and thinkers, and the particular approaches they take in assessing expert knowledge, evaluating policy proposals and technological options, and in brokering cross-cutting dialogue. Our analysis of these prominent writers and thinkers demonstrates that ecomodernist journalism has successfully gained global audiences, been assimilated into mainstream reporting, and has the potential to be the animating worldview that distinguishes the coverage of individual journalists and news organizations as they report on sustainability.

Introduction

In *The Planet Remade* (2015), journalist Oliver Morton imagined a future scenario where the Earth's climate has been changed by geoengineering. A collective of countries with little power in world affairs secretly agrees to a low-cost plan to cool the planet. With funding from a billionaire, the collective flies several planes a day to spray tonnes of aerosol into the stratosphere, creating a veil that reduces the amount of sunlight that reaches the Earth, thereby dramatically slowing global warming. After eighteen months, the collective of countries discloses its activities – to massive uproar – at a United Nations (U.N.) climate summit, framing the veilmaking as an act of international civil disobedience. A U.N. resolution calls for a Convention on Climate Engineering and Protection. "Down on the ground," wrote Morton (2015: 352), "people scrutinize sunsets with a new attention, comparing them in their imaginations with those they remember from their youth, or from just a few years ago."

Morton, a veteran journalist who is currently editor of *The Economist*'s Briefings articles, said he wanted to craft a utopian vision of a climate future. It has been easier and more common, he wrote, to imagine catastrophic visions. His scenario allowed him to explore what he called "useful truths" about geoengineering, especially the belief that the application of a new technology should develop hand-in-hand with the governance of that technology (2015: 359). Morton discussed the potential negative consequences of the veilmaking scenario he outlined, such as the potential decision by some countries to see this climate cooling as a license to burn more fossil fuels. But, Morton concludes, there is a radical end to the scenario: "It works" (2015: 369).

The Planet Remade reflects a new direction in environmental journalism. This way of reporting on the environment is underpinned by the philosophy of ecomodernism, which argues that government-driven technological innovation, entrepreneurship, and ingenuity are the principle means by which societies can hope to achieve sustainable development. The distinguished environmental journalist Fred Pearce identified several of the ecomodernists' core beliefs. "The modernists," he wrote (2013), "wear their environmentalism with pride, but are pro-nuclear, pro-genetically modified crops, pro-megadams, pro-urbanization and pro-geoengineering of the planet to stave off climate change."

The application of these ideas, ecomodernists argue, would set societies on the path of sustainable development. Ecomodernism, in a vital first step, offers a foundational set of ideas and practices that define the broad concept of sustainable development itself. As *Nature* (2015: 407) has editorialized,

sustainable development is a "catchphrase that neatly defines what the world must ultimately achieve, but nobody knows precisely what it looks like at full scale." Such ambiguity presents a major barrier to collective action in support of specific policy actions or goals, since under such conditions, decision-makers and the public lack clear organizing principles or a paradigm by which to define and coordinate actions or solutions. Ecomodernism, more broadly, aims to reshape how citizens think about the relationship between society and the environment. As environmental journalist Keith Kloor (2012) wrote in *Discover*, the philosophy aims to "remake environmentalism: Strip it of outdated mythologies and dogmas, make it less apocalyptic and more optimistic, broaden its constituency."

Journalism informed by ecomodernist ideas, we argue in this chapter, fulfills a vital need in public and political debates over sustainable development. Ecomodernist journalism offers a particular vision of what sustainable development looks like and how it can be achieved. Ecomodernist journalism also critiques what its advocates view as faulty assumptions that underpin competing policy proposals for a sustainable future. And ecomodernist journalism brokers dialogue among different parts of society about realistic paths forward. In this chapter, we analyze the work of Oliver Morton and several other high-profile journalists writing on the environment and climate change who draw on and apply principles of ecomodernism to offer a distinct framing of sustainable development. We demonstrate how the philosophy informs the work of these writers and thinkers, and the particular approaches they take in assessing expert knowledge, evaluating policy proposals and technological options, and in brokering cross-cutting dialogue. Our analysis of these prominent writers and thinkers demonstrates that ecomodernist journalism has successfully gained global audiences, been assimilated into mainstream reporting, and has the potential to be the animating worldview that distinguishes the coverage of individual journalists and news organizations as they report on sustainability.

Ecomodernism and Environmental Journalism

Ecomodernism shares fundamental characteristics with ecological modernization, a distinct view of sustainable development described by European sociologists in the early 1980s. This perspective argues that economic growth can proceed in tandem with environmental protection. But in order for this to happen, modern economic and political systems, including market economies, industrial production, centralized welfare states, agricultural production, and scientific and technological institutions, must be restructured to achieve ecological reforms. As environmental policy scholar John Dryzek (2013) argues, the perspective is distinct from sustainable development more generally because it has specific ideas about how the state and government should be restructured. A central part of that social vision is the ability of governments to catalyze technologies that, by reducing resource consumption, stretch environmental limits, enabling economic growth to continue indefinitely. The key agents in ecomodernism are governments, companies, scientists, and moderate environmentalists, all motivated by "the common good or the public interest, defined in broad terms to encompass economic efficiency and environmental conservation" (Dryzek 2013: 174).

Ecological modernization also puts forward specific ideas about policy and governance. Governments, from this perspective, integrate environmental considerations into all public policies, set strong industrial regulations, and provide companies with incentives to innovate. Policies are forged in a consensus-based decision-making process, with governments, businesses, scientists, and environmentalists involved in planned policy interventions. While ecological modernization does not advocate for a system-wide overhaul, it does note that investment patterns, planning decisions, research funding, and policy decision-making will change significantly because of ecological reforms (Mol and Spaargaren 2000). Ecological modernization presents a third way between command-and-control environmental regulation and free market fundamentalism, offering "realistic utopian models for the future," argues the sociologist Anthony Giddens (1990 cited in Mol and Spaargaren 2000: 38).

Following the failure of the 2010 U.N. climate change negotiations and emissions trading legislation in the U.S., there emerged a space in public life for new ways of thinking about environmental problems. A group of U.S. and U.K.-based scholars, writers, and advocates put forward ideas that broadly conformed to, but expanded on, ecological modernization. In *Whole Earth Discipline*, ecologist and futurist Stuart Brand (2009) laid out a range of innovation-driven strategies for achieving a sustainable society, his ideas captured effectively by the subtitle: *Why Dense Cities, Nuclear Power, Transgenic Crops, Restored Wildlands, And Geoengineering Are Necessary*. Other prominent ecomodernist thinkers include green campaigner Mark Lynas who in *The God Species* (2011) similarly argued in favor of nuclear power and genetically modified crops as solutions to climate change and other problems. Science writer Emma Marris in *Rambunctious Garden* (2011) advocated for embracing the human-altered landscapes of cities,

farms, and parks, challenging traditional conservation ideals of a pristine wilderness walled off from human interference. In *Why We Disagree about Climate Change* (2009), geographer Mike Hulme argued that climate change had been misdiagnosed as a conventional environmental problem. Instead it was a uniquely "super-wicked" problem, not something societies were going to end or solve, but a problem societies were going to do better or worse at managing over time.

These ideas and others have been researched, expanded on, and promoted by The Breakthrough Institute, a U.S.-based think tank founded by the environmental activists Ted Nordhaus and Michael Shellenberger. In 2015, the two brought together 16 other similarly-minded thinkers including Lynas and Brand to author *An Ecomodernist Manifesto*. Calling themselves "ecopragmatists and ecomodernists," they argue that current environmental problems are not reason to call into question the economic policies and technological advances that have enabled human society to flourish over the past century. Indeed, halting the many societal gains we have achieved through technological innovation, they argue, rules out the best tools we have for combating climate change, protecting nature, and helping people. For ecomodernists, the urgent environmental problems we face are evidence in favor of more modernization, not less (Asafu-Adjaye et al. 2015: 7; Nordhaus et al. 2011).

Hope for a better future, they contend, starts with advanced technologies that intensify rather than weaken our mastery of nature. High-tech crops, advanced nuclear power, carbon capture and storage, aquaculture, desalination, and high-efficiency solar panels all have the potential to not only reduce human demands on the environment, but also spark the economic growth needed to lift people out of extreme poverty. These advances will enable more people to live in bigger cities that are powered and fed more efficiently. People in cities also tend to have fewer children, slowing population growth. From this perspective, technological advances and urbanization will free up more space on the planet for nature, "decoupling" human development from resource consumption. For ecomodernists, progress also requires respectful engagement with a diversity of voices and ideas. "Too often discussions about the environment have been dominated by the extremes, and plagued by dogmatism, which in turn fuels intolerance," they wrote (Asafu-Adjaye et al. 2015: 31).

Not surprisingly, ecomodernist ideas are difficult for many journalists to accept or to apply to their coverage, since the philosophy is at odds with core tenets of the environmental movement, a tradition that has shaped the thinking of generations of writers, documentary filmmakers, and other media professionals. Inspired by Rachel Carson's *Silent Spring* (1962), environmental journalism developed in the U.S. in the late 1960s, coinciding with the birth of the environmental movement (Fahy 2017). Carson's seminal work created an entire genre of books, articles, news reports, and films that warned of the negative environmental and health impacts of industrialization, consumption, and technological advances, casting into doubt the claims of their promoters and defenders.

From this origin, two dominant discourses in journalistic coverage of environmental issues emerged. The first, as embodied by writers like Bill McKibben and many journalists writing for left-wing publications, framed problems like climate change as looming catastrophes, symptomatic of a capitalist society that in prioritizing economic growth and consumerism had dangerously exceeded the carrying capacity of the planet. This framing emphasizes the need for a new consciousness spread through grassroots organizing and social protest that would dramatically transform society, ending our over-consumption and material greed, replacing global capitalism with small-scale economies reliant on locally-owned farms and renewable energy sources. The second discourse, as embodied by writers like *The New York Times*' columnist Thomas Friedman and most mainstream journalists, also emphasizes that limits to growth must be respected, but assumes that environmental limits can be stretched if the right market-based mechanisms such as carbon taxes are implemented. These market mechanisms would catalyze the transition to renewable technologies, conservation policies, and energy efficiency practices, enabling global economic growth to continue indefinitely (Nisbet 2014).

These two discourses are strongly reflected in U.S. and U.K. news coverage of the 2015 Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). There is near universal agreement among scientists that human-driven climate change is happening and that it is an urgent problem, but there are considerable uncertainties about the severity, timing, and location of climate change impacts (Painter 2013). Yet journalists around the world usually present future climate scenarios in the darkest of terms, warning of devastating disasters and catastrophes (Weingart et al. 2000; Painter 2013). Indeed, in coverage of the 2015 IPCC report, the dominant framing was that climate impacts would be disastrous, with journalists neglecting alternative possible climate futures. In comparison to the risks posed by climate change, the section of the report that dealt with actions to reduce emissions generated far less

news coverage, even though it concerned apparently newsworthy topics such as the future of energy or whether energy should be produced or consumed in a more equitable and just way (O'Neill et al. 2015).

When journalists have covered potential solutions to climate change, they have tended to favor solutions consistent with the two dominant discourses. For example, when sixty-four journalists from Germany, India, Switzerland, U.S., and the U.K. were asked to rate various solutions to climate change, the reporters ranked highest energy policies that stressed renewable energy sources. They ranked lowest policies that advocated the expansion of nuclear power and carbon capture and storage technologies (Engesser and Brüggemann 2015). These findings suggest that many journalists embrace the idea that addressing climate change requires rapid technological innovations, as ecomodernists argue. But at the same time, they have a bias in favor of so-called "soft path energy" technologies, such as solar, wind, and geothermal energy, and a bias against "hard path technologies" like nuclear power or geoengineering, which are considered controversial, even though the IPCC report and many experts conclude that such hard path technologies are needed to meet global emission reduction goals.

Yet there are several journalists whose reporting is driven by ecomodernist principles. They are exemplars of ecomodernist journalism, showing what this type of reporting looks like in practice. Their journalism is distinguished not only by its perspective on sustainable development, but also by the particular roles that these journalists undertake in their work. Elsewhere we argued that these roles are useful ones for journalists to adopt in science policy debates more generally (Nisbet and Fahy 2015). As our analysis will show, with reference to the prominent work of several reporters, these roles can be applied to the reporting of sustainable development, an issue that draws on knowledge from various scholarly disciplines and which merges perspectives from politics, economics, sociology, and science.

Ecomodernists as Knowledge Brokers

In the first role, journalists reporting on sustainable development often serve as "knowledge brokers," critically assessing the process of expert knowledge production, evaluating how and why scientific, economic, and policy analysis of environmental problems was undertaken, and how the findings were interpreted (Nisbet and Fahy 2015).

Andrew Revkin, who joined in 2016 the non-profit media organization ProPublica after more than two decades as a reporter and opinion writer at *The New York Times*, is a leading example of an ecomodernist journalist serving in the role of knowledge broker. He earned an undergraduate degree in biology and a postgraduate degree in journalism, before becoming a science writer with *Science Digest* in 1983, followed by stints at *Los Angeles Times* and *Discover,* where in 1988 he wrote one of the first national magazine cover stories on global warming. After joining *The New York Times* in 1995, he worked for almost five years on the Metro section before becoming national environment correspondent in 2000, reporting in the role for a decade before accepting a buyout from the paper, but staying on to write the Times' "Dot Earth" blog (Nisbet 2013). With world population expected to reach nine billion people by 2050, Revkin's focused on how to "balance human affairs with the planet's limits." Combined with elements of ecomodernist philosophy, Revkin's experience enables him to critically evaluate the multiple perspectives and frameworks that are brought to bear on debates over sustainable development and climate change.

At "Dot Earth," Revkin frequently warned about the tendency to hype scientific findings about environmental problems and to overlook the inherent uncertainty in research. He has been openly critical of the process by which institutions and journals "pump up the volume" on a specific research finding. This hyping, explains Revkin, becomes amplified by advocates, journalists, and bloggers on either side of an environmental debate and by news organizations and reporters "at the end of the chain" who have the incentive to search for "the front page thought" – the particular interpretation that will give their story the most prominence and attention. Revkin is also able to distinguish the various forms of knowledge that contribute to our understanding of climate change. In his writing and talks, he often refers to a figure that displays different distributions or "curves" of scientific knowledge about climate change. He explains that there is a "clear cut" convergence among experts that more carbon dioxide equals a warming world, but on specific impacts, such as increasing the intensity of hurricanes or the efficacy of alternative energy strategies, there is a much broader distribution of scientific opinion. That range of opinion, he argues, should be reflected in news reporting" (Wihbey 2011).

In 2012, Revkin served in a knowledge broker role during his extensive journalism about Hurricane Sandy, which flooded parts of the New York City/New Jersey region, causing dozens of deaths and

billions in damages to property and coastal infrastructure. As the hurricane neared landfall on the U.S. East Coast, Revkin examined the connections between climate change and extreme weather. He acknowledged that #Frankenstorm was the Twitter handle for the hurricane. "While the echo of Frankenstein in that Twitter moniker can imply this is a human-created meteorological monster," he wrote, "it's just not that simple." A huge number of factors shape how tropical cyclones form and grow. "There remains far too much natural variability in the frequency and potency of rare and powerful storms – on time scales from decades to centuries – to go beyond pointing to this event being consistent with what's projected on a human-heated planet" (Revkin, Oct 28, 2012).

Amid storm-caused blackouts near his home in the Hudson Valley area of New York, Revkin sought to shift discussion away from what he believed was the polarizing and misguided discussion about whether or not climate change caused the storm. Instead, he framed the significance of the storm in terms of urban planning and resilience-focused construction. "While scientists and campaigners debate what mix of factors shaped this epic storm," he wrote, "what's indisputable is that much of the disaster that unfolded as it came ashore was the result of human actions and decisions – ranging from where we've chosen to build or subsidize development to how seriously our governments take the need to build with the worst in mind" (Revkin, Oct 31, 2012).

Ecomodernists as Policy Brokers

In a second complementary role as "policy brokers," ecomodernist journalists distinguish themselves in their coverage by expanding the range of policy options and technologies under consideration by the public and political community (Nisbet and Fahy 2015). Because climate is so complex and the future cannot be predicted exactly, it is possible for different, but similarly plausible narratives to exist about policy options and technological fixes. In the face of such ambiguity, journalists can play a key role via their coverage by helping to construct a common outlook and language among networks of experts, advocates, and political leaders that aids in the coordination of decisions and actions. Yet if one problem definition and set of solutions, such as an emphasis on "soft path" energy technologies like renewables over "hard path" technologies like nuclear energy, are prioritized in news coverage to the exclusion of others, such influence can lock in powerful forms of groupthink that dismiss valuable alternative interpretations and courses of action, contributing to policy gridlock rather than progress (Nisbet 2014).

In working against such groupthink, the impact of ecomodernist journalists as policy brokers can be understood by way of several relevant areas of research. First, political scientist Roger Pielke Jr. (2007), drawing on a series of case studies, concludes that the broader the menu of policies and technologies available to decision-makers in science-related debates, the greater the opportunity for decision-makers to reach agreement on paths forward. Applying these principles to climate change, Pielke Jr. (a co-author of the *Ecomodernist Manifesto*) argues that once technologies are available which make meaningful action on climate change lower-cost and less threatening to the economic status quo, then much of the political argument over the scientific certainty of climate change causes and impacts will diminish. "The challenge facing climate policy is to design policies that are consonant with public opinion, and are effective, rather than to try to shape public opinion around particular policies," Pielke Jr. (2010: 43) writes in *The Climate Fix*. Carbon capture and storage by limiting emissions from coal and natural gas power plants, for example, could "transform the political debate" as it "does not demand a radical alteration of national economies, global trade, or personal lifestyles" and therefore "enfranchises the very groups that have the most to lose from conventional climate policies – from powerful corporate interests to many of the world's poorest people," wrote science policy scholar Daniel Sarewitz and Pielke Jr. in a 2013 article at *The Atlantic*.

Second, these conclusions are consistent with the social psychological research of Dan Kahan, whose experimental findings suggest that perceptions of culturally contested issues such as climate change are often policy and technology dependent and that polarization is likely to be diffused under conditions where the focus is on a diverse rather than a narrow set of options. "For instance, people with individualistic values resist scientific evidence that climate change is a serious threat because they have come to assume that industry-constraining carbon-emission limits are the main solution," argues Kahan (2010: 297). "They would probably look at the evidence more favorably, however, if made aware that the possible responses to climate change include nuclear power and geoengineering, enterprises that to them symbolize human resourcefulness."

Over the past decade, several ecomodernist journalists serving in the role of policy broker have helped to diversify the range of technological options considered to address climate change, calling greater

attention to these policy and technology options. These journalists challenged longstanding claims by many environmentalists and activists that solar, wind, and other renewables are the only energy technologies needed to combat climate change; that genetic engineering was too risky; and that geoengineering should be off the table for consideration. In doing so, they shifted policy debate away from the narrow goal of making fossil fuels more costly to a broader focus on making a diverse portfolio of low carbon technologies less expensive; and to making society more resilient to inevitable climate change shocks.

Oliver Morton, for example, has long emphasized that a range of policy and technological options are needed to address climate change. In 2009, he argued in *The Economist* that a reduction in global emissions requires that governments help catalyze a massive new infrastructure to support carbon capture and storage, and subsidize the development of advanced nuclear energy technologies. In 2010, he wrote that it was clear after the 2009 Copenhagen climate talks that "the nations of the world will not commit themselves to controls on carbon emissions anything like as strict as enthusiasts imagined." He proposed a broader approach to climate change that stressed the link between climate action and development, a focus on achievable goals like reduced deforestation, and a change in the mix of energy used in the world, a mix that should include geoengineering (2010, Nov. 22). Morton's reporting is informed by his previous journalistic experience: He was energy and environment editor at *The Economist*, chief news and features editor at the scientific journal *Nature*, and editor of *Wired UK*.

Morton's reporting of geoengineering culminated in 2015's *The Planet Remade: How Geoengineering Could Change the World*. He argued that the risks of climate change merit serious action, but bringing an industrial economy's carbon dioxide emissions to zero is incredibly difficult because the world's energy system is built on fossil fuels and maintained by a vast global infrastructure, such as mines and power stations, that will have to be replaced in order to rapidly reduce emissions and stabilize the climate. Geoengineering is therefore a useful response, he wrote, because it reduces climate risks "without impractically rapid cuts in fossil-fuel use" (2015: 4).

Morton also offered an explanation, grounded in the sociology of science, as to why politicians did not see geoengineering as a serious policy option. The political focus in the 1990s quickly narrowed to one issue: carbon dioxide. Amid the complexity of climate change, it was practical to focus on an agreed-on scientific problem that could be measured. "Carbon dioxide is a technical matter," Morton wrote (2015: 142), "the sort of thing that fits well inside the realm of science, the sort of thing that scientists have authority to talk about." Diplomats like it, too, as it made "climate change a thing-there-ought-to-be-less-of problem" with cuts that could be agreed-on, monitored, and verified (Morton 2015: 143). The focus on carbon dioxide reduction, he argued, neglected adaptation, which came to be seen not as a crucial counterpart of mitigation strategies, but as a second-choice strategy that left the world's response to climate change badly served.

The Planet Remade argued for a wider discussion of geoengineering as part of a broadened set of policy response to climate change. There should be new settings for debate and new evidence to discuss in these settings. Such a debate would avoid a mistake that Morton (2015: 168) argues is often made by natural and social scientists: "to talk as though what geoengineering is has already been decided, rather than treating it as something still up for grabs." He argued that the meaning of geoengineering was not fixed – it was still open to discussion and constructive debate, one that brought in issues such as the governance of new technology. A broader reflection on geoengineering, for Morton, is more than an exercise in evaluating policy and technology. It is also a way to imaginatively think about the impacts of climate change on the world and how humanity might react to those impacts, with or without geoengineering.

Another journalist who has undertaken the policy broker role is Eduardo Porter, who writes the "Economic Scene" columns at *The New York Times*. Like Morton and Revkin, he draws on highly specialized education and experience to inform his journalism, including two degrees in physics. He joined *The New York Times* in 2004 as a specialist in economics after a twenty-year career covering politics, finance, and business from Brazil, Tokyo, London, Mexico, and Los Angeles. Writing from an economics perspective, his point-of-view could be seen in his critical reporting leading up to and during the 2015 U.N. climate change summit, challenging arguments that solving climate change required a shift away from a global capitalist system towards small scale local economies powered by locally-renewable energy sources.

At the time, these decades-old arguments had gained historic prominence by way of Naomi Klein's international best-seller *This Changes Everything: Capitalism vs. The Climate* (2014). Reviewing a

number of studies, Porter wrote that strategies focused entirely on local economies and renewable energy – strategies that featured in Klein's book – were driven "more by hope than science." In this case, "the goal of bringing the world's carbon emissions under control is put at the service of other agendas, ideological or economic, limiting the world's options," he concluded. Instead, Porter (2015a) argued that dealing with climate change "requires experimenting intensely along many technological avenues, learning quickly from failures and moving on." He argued, based on research he cited from various fields, that carbon capture and storage, and an expansion of nuclear power, are needed to address climate change. These technologies would not only be needed to serve as backups to the intermittent energy produced from solar and wind power, but also to meet the rapidly growing energy needs of India, China, and African countries.

Porter also rejected the strategy promoted by Klein and others of negative economic growth as a path to reduce emissions. "Whatever the ethical merits of the case, the proposition of no growth has absolutely no chance to succeed," he wrote. He synthesized a range of expert views on this topic, interviewing historians and economists to argue that economic growth over the past century had created dramatic benefits for global societies. Economic growth, he noted, helped reduce war and conflict, enabled democracy and consensus-based politics, and empowered women. Discussing Klein, he wrote that he doubted that an end to capitalism "would bring about the workers' utopia she appears to yearn for." Zero economic growth, he warned, would instead provoke intense resource conflicts, endangering the powerless and poorest. A better way to serve the most vulnerable people in the world, argued Porter (2015b), is to shift from fossil fuels to a range of advanced low carbon energy technologies.

Ecomodernists as Dialogue Brokers

A third role that ecomodernist journalists play is that of a dialogue broker. In this approach, a journalist uses blogging, podcasts, video interviews, Twitter, Facebook, and other social media tools to convene interconnected, cross-platform discussions among a professionally and politically diverse network of contributors and readers (Nisbet and Fahy 2015). Not only does this networked journalism approach aid efforts to contextualize and critically evaluate environmental debates, but the method is also guided by a philosophy that cross-cutting dialogue can help readers to better understand, and therefore accept, why they may disagree with others (Rosen 2012; Nisbet 2014). Using blog posts and other digital tools, dialogue brokers bring together multiple, contrasting perspectives about sustainability problems, while offering context on the scientific and policy arguments made. A core tenet for dialogue brokers is the need to welcome perspectives that challenge their own and that of their readers. As media scholar Donald Matheson (2004: 458) wrote, this is "a journalism of linking rather than pinning things down, that is situated within a model of knowledge-as-process rather than knowledge-as-product."

The value of a dialogue-based form of networked journalism is supported by many of the arguments of social theorists studying the politically contested terrain of issues such as climate change. Political theorists have long argued that progress on climate change lies not in staking out a hardline position on a contested terrain and then castigating those that are in disagreement, but in recognizing and understanding multiple positions, and finding ways to negotiate constructively among them (Verweij et al. 2006). Dismissing alternative perspectives not only weakens our ability to understand the complexity of these issues, but also risks the loss of legitimacy and trust among key constituencies (Thompson and Rayner, 1998). In this scenario, what are needed then are journalists who convene discussions that force critical reflection and examination, rather than playing to an ideologically like-minded audience (Nisbet 2014).

In a leading example, at his former "Dot Earth" blog, Andrew Revkin not only functioned as a knowledge broker, but also as a dialogue broker. As a skilled convener, he used his blog and a variety of other digital tools to facilitate discussions among experts, advocates, and readers, all the while contextualising specific claims. As he told us in a previous interview (Fahy and Nisbet 2011: 783): "The blog is very different than most in that most blogs are built to provide a comfort zone for a particular ideological camp. … I'm not here to provide you with a soft couch and free drinks if you're an enviro or if you are a conservative. It's a place to challenge yourself." Revkin's past work at "Dot Earth" and current reporting for ProPublica is informed by his reading of social science research which led him to question his own journalistic assumptions about the best way to reach readers: "I had long assumed the solution to global warming was, basically, clearer communication," he wrote (Revkin 2016: 32). "If we could just explain the problem more clearly, people would see it more clearly, and then they would change."

Frequently at "Dot Earth", Revkin merged the roles of dialogue broker and knowledge broker. In 2013, for example, he reported on a study in which scientists and energy analysts identified how New York

State could run entirely on clean energy by 2050. The study was published in *Energy Policy* and it laid out a plan for the state to eliminate its use of fossil fuels and nuclear power. As a vision for a sustainable future, Revkin argued that the study worked best as a "thought experiment" that raised, as one of its central questions, the dilemma of whether such a dramatic shift in the state's energy infrastructure matched the risks posed to the state by climate change. "That's a question," he wrote, "that will always – with or without industry lobbying – get varied answers depending on competing priorities and differing perceptions of risk across society" (Revkin, March 12, 2013).

Revkin created cross-cutting dialogue on this issue in several ways. When he reported the study on "Dot Earth", he posted long excerpts of his questions and answers with the study's authors, and then curated reactions to the blog post on Twitter from scientists, journalists, and energy policy scholars. Revkin also moderated a subsequent event to discuss the energy transition at Pace University in New York, where he teaches, that brought together the study's lead author and a sustainable energy expert. He encouraged his readers to come to the event, watch the live video stream, post real-time questions to his blog, or contribute using specific Twitter hashtags. "My hope for our chat," he wrote, "was that we could dig down a bit into how to move from ideas to action" (Revkin, March 11, 2015). The dialogue continued months later as other researchers argued in *Energy Policy* that the original study overlooked technical and policy factors that could hinder the plan's implementation. Revkin noted how the original authors defended their work in a response published in the journal. These contests over knowledge, and over the realisation of a sustainable future, were not confined to the pages of a specialist journal. Revkin (June 18, 2013) reported the ongoing expert debate, bringing into wider public focus these intense struggles over the production and application of knowledge.

A similar combination of dialogue brokering and knowledge brokering can be seen in the journalist Nathanael Johnson's year-long series on genetically modified food for the sustainability-focused news and commentary site Grist.org. Although not an advocate of the ecomodernist philosophy, Johnson demonstrated in the "Panic-free GMOs" series how to report a complex issue charged with ideological conflict. As the introduction to the series (Grist 2013) explained, the journalistic exploration sought to see past the polarized thinking on the topic that veered between "dubious anti-GM horror stories" and "the dismissive sighing . . . of pro-GM partisans." At first Johnson sought clear answers. But the reality he encountered was far more complex.

Johnson, who has written about the environment for several publications and is the food writer at Grist, brought several diverse perspectives on GMOs into dialogue. When he examined regulation, for example, he quickly came to an apparent contradiction. Genetic engineering's critics say the industry is not required to test the safety of its products, while the industry says it conducts voluminous tests. "Both are correct," wrote Johnson. "If you try to cross-check the claims of people on either side of the GM debate, you run into problems, because these warring clans speak different dialects. Their foundational assumptions point them in opposite directions, facing different landscapes and talking past each other" (Johnson 2013, July 10).

As he reflected on the challenge of coming to a clear consensus on GMO research, he noted that researchers from different disciplines become, as he put it, "balkanized." He wrote: "Those familiar with the science basically agree on the evidence, they are just exasperated by one another's values and customs" (Johnson 2013, Aug. 20). His in-depth reporting constrained him from broad, sweeping conclusions. Because every crop is different, he wrote, it is difficult to make major generalizations. Avoiding such mistakes can also help soften polarization. "If GMOs aren't a monolithic entity, the stakes in this fight fall even further," he wrote (2014, Jan 9). "It's harder to get worked up about an issue when it's a mixed bag of good and bad."

A second conclusion grew from the intense debate generated by his work. Readers picked apart every point. Comment threads regularly ran to more than 200 entries. "Nothing else I've written, in more than a decade of working as a journalist, has generated this mixture of fascination and hostility," Johnson concluded in his last piece for the series. After reflecting on what he called his "learn-as-I-go experiment," he observed that critics and sources who disagreed with what he wrote were usually not disputing facts. "What seemed to bother them was my failure to interpret the evidence in a way that fit into a larger narrative." These narratives were grounded in different views of nature and technology. For GMO opponents, the issue was a story about "corporate control of the food system, or unsustainable agriculture, or the basic unhealthiness of our modern diet." For GMO advocates, the issue was a story about "the victory of human ingenuity over hunger and suffering, or the triumph of market forces, or the

wonder of science" (Johnson 2014, Jan. 9). The different views were, in effect, narratives about contrasting visions of a sustainable future.

Conclusion: Ecomodernist Journalists as Levers of Change

As ecomodernist journalists, Oliver Morton, Andrew Revkin, Eduardo Porter, and others have played a vital role in forging new narratives about environmental problems and sustainable development, challenging conventional assumptions, enriching the discussion of policy options and technologies, and encouraging cross-cutting dialogue. In these roles, they express, to varying degrees, ecomodernist ideas in their work: the centrality of technological innovation, the reliance on government investment to catalyze innovation, the necessity of a diverse portfolio of policy options and technologies, and the need for public forums that encourage critical self-reflection and solutions-focused discussion. Even when a journalist does not fully share the ecomodernist philosophy, as the example of Nathanael Johnson shows, their work can demonstrate the benefits of applying ecomodernist principles to encourage critical dialogue.

The ecomodernist journalists we have analyzed have been successful because they share fundamental characteristics. They combine specialized education, often in different scientific disciplines, with years of experience reporting across different topics for various audiences and a variety of news organizations. This essential diversity of experiences, when combined in their journalism, allows them to evaluate assumptions and arguments about technology, society, politics, and the environment as they relate to the many dimensions of sustainable development. Moreover, these journalists are alert to the historical and sociological underpinnings of contemporary debates, including those influences that shape expert knowledge and conventional explanations about sustainability. The journalists analyzed here, furthermore, are based in the U.S. and U.K. If such a style of ecomodernist journalism can gain an audience in these countries with their traditions of antagonistic two-party political cultures, then it is likely that this style of reporting can gain an audience – and influence – in countries such as Germany, Sweden, or Norway with histories of consensus-based politics.

The ecomodernist journalists analyzed here, therefore, are valuable examples for other reporters to emulate, and models to follow for news organizations seeking to improve their coverage of sustainable development. They demonstrate, first, how coverage of sustainable development can be brought into mainstream news coverage and commentary. Morton and Porter do not write only in specialized science or environment sections. Their work is integrated into their publications' core coverage of business and public affairs. In other words, their work is not ghettoized, featured exclusively at the science page or in sections dedicated to the environment. There is a wider trend towards this type of integrated coverage of issues like sustainable development, as specialist reporters in the U.S. are being reassigned from the environmental beat and integrated into areas such as politics or economics – a process that has been called "mainstreaming" (Friedman 2015: 148). Such a process would allow reporters to apply their environmental expertise to mainstream news stories that address sustainable development.

Second, the popularity and longevity of Revkin's "Dot Earth" blog and the success of Johnson's series at Grist.org demonstrate that there is a global audience for networked, dialogue-based coverage of sustainable development. Third, as Morton, Porter, and Revkin demonstrate, journalists can and should offer readers a distinct perspective on sustainability. Given the scale of scientific and environmental problems societies face, notes media critic Jay Rosen (2012), coverage must have *a view from somewhere*. The ecomodernist view on sustainable development is one that can not only drive the work of individual journalists, but can be an editorial perspective adopted by news organizations, or can potentially form the perspective that distinguishes the approach of new digital ventures examining sustainability.

By applying their ecomodernist views and by serving in the roles of knowledge broker, policy broker, and dialogue broker, ecomodernist journalists help prevent other distinct perspectives from dominating coverage, challenging citizens to critically assess expert claims and deeply-held assumptions. As Revkin (2016: 35) argues, on the responsibility for responding to climate change: "We need edge pushers and group huggers, faith and science, and – more than anything – dialogue and effort to find room for agreement even when there are substantial differences." Morton in *The Planet Remade* advocates for thinking about geoengineering as more than merely a technological fix. He argues that deliberation over geoengineering can be a powerful imaginative tool for identifying the levers that will move the earth system in ways that will help humanity. Those levers he advocates could be an institution, a shared goal, an idea – or all of them and more. In fashioning a new discourse that enriches thinking and sparks new ideas, Morton's work and that of other ecomodernist journalists could prove to be one such lever.

References

Asafu-Adjaye, J., Blomqvist, L., Brand, S., Brook, B., et al. (2015) *An Ecomodernist Manifesto*. Oakland, CA: The Breakthrough Institute.

Dryzek, J.S. (2013) *The Politics of the Earth: Environmental Discourses*. Oxford: Oxford University Press.

Engesser, S., Brüggemann, M. (2015) "Mapping the Minds of the Mediators: The Cognitive Frames of Climate Journalists from Five Countries", *Public Understanding of Science*, 1–17. doi:10.1177/0963662515583621

Fahy, D., Nisbet, M.C. (2011) "The Science Journalist Online: Shifting Roles and Emerging Practices", *Journalism* 12(7): 778–793.

Fahy, D. (2017) "Defining Objectivity, False Balance, and Advocacy in News Coverage of Climate Change", *Oxford Research Encyclopedia of Climate Science*. doi: 10.1093/acrefore/9780190228620.013.345

Friedman, S.M. (2015) "The Changing Face of Environmental Journalism in the United States", in Hansen, A., Cox, R. (eds.) *The Routledge Handbook of Environment and Communication*. London: Routledge. pp. 144–157.

Grist (2013) "Panic-Free GMOs", *Grist*. Retrieved from https://grist.org/series/panic-free-gmos/

Johnson, N. (2013, July 10) "The GM Safety Dance: What's Rule and What's Real", *Grist*. Retrieved from https://grist.org/food/the-gm-safety-dance-whats-rule-and-whats-real/

Johnson, N. (2013, August 20) "Elephant in the Room: Why Getting the GMO Story Straight is So Hard", *Grist*. Retrieved from https://grist.org/food/of-kidneys-and-elephants-how-balkanized-science-makes-for-blind-spots/

Johnson, N. (2014, January 9) "What I Learned from Six Months of GMO Research: None of It Matters", *Grist*. Retrieved from http://grist.org/food/what-i-learned-from-six-months-of-gmo-research-none-of-it-matters/

Kahan, D. (2010) "Fixing the Communications Failure", *Nature* 463(7279): 296–297.

Kloor, K. (2012) "The Limits to Environmentalism", *Discover*. The Crux. April 27. Retrieved from http://blogs.discovermagazine.com/crux/2012/04/27/the-limits-to-environmentalism/#.V39qXpMrLOZ

Matheson, D. (2004) "Weblogs and the Epistemology of the News: Some Trends in Online Journalism", *New Media & Society* 6(4): 443–468.

Mol, A.P.J., Spaargaren, G. (2000) "Ecological Modernisation Theory in Debate: A Review", *Environmental Politics* 9(1): 17–49.

Morton, O. (2009, November 13) "Wanted: Green Engineers", *The Economist*. Retrieved from http://www.economist.com/node/14742179

Morton, O. (2010, November 22) "Cooling the Earth", *The Economist*. Retrieved from http://www.economist.com/node/17492961

Morton, O. (2015) *The Planet Remade: How Geoengineering Could Change the World*. London: Granta.

Nature (2015) "Decoupled Ideas", *Nature* 520: 407–408.

Nisbet, M.C. (2013). "Nature's Prophet: Bill McKibben as Journalist, Public Intellectual, and Activist." Joan Shorenstein Center for Press, Politics, and Public Policy. Discussion Paper Series, D-78 March.

Cambridge, MA: Kennedy School of Government, Harvard University. Retrieved January 15, 2015 from https://shorensteincenter.org/natures-prophet-bill-mckibben-as-journalist-public-intellectual-and-activist/

Nisbet, M. C. (2014). "Disruptive Ideas: Public Intellectuals and their Arguments for Action on Climate Change", *Wiley Interdisciplinary Reviews: Climate Change* 5(6): 809–823.

Nisbet, M.C., Fahy, D. (2015) "The Need for Knowledge-Based Journalism in Politicized Science Debates", *The Annals of the American Academy of Social and Political Science* 658: 223–234.

Nordhaus, T., Shellenberger, M., Pielke, R., Green, C., Jenkins, J. Sarewitz, D., Rayner, S., Hayward, S., Atkinson, R. (2011) *Climate Pragmatism: Innovation, Resilience, and No Regrets*. Oakland, CA: The Breakthrough Institute. Retrieved August 18, 2014 from http://thebreakthrough.org/archive/climate_pragmatism_innovation

O'Neill, S., Williams, H.T., Kurz, T., Wiersma, B., Boykoff, M. (2015) "Dominant Frames in Legacy and Social Media Coverage of the IPCC Fifth Assessment Report", *Nature Climate Change* 5(4): 380–385.

Painter, J. (2013) *Climate Change in the Media: Reporting Risk and Uncertainty*. London: I.B Taurus.

Pearce, F. (2013, July 15) "New Green Vision: Technology as Our Planet's Last Best Hope" *Yale Environment 360*. Retrieved from https://goo.gl/DFlxwk

Pielke, Jr., R. (2007) *The Honest Broker: Making Sense of Science in Policy and Politics*. Cambridge: Cambridge University Press.

Pielke, Jr., R. (2010) *The Climate Fix: What Scientists and Politicians Won't Tell You About Global Warming*. New York: Basic Books.

Porter, E. (2015a, June 23) "Climate Change Calls for Science Not Hope", *New York Times*, 2015. Retrieved January 15, 2015 from http://nyti.ms/1Hd5RII.

Porter, E. (2015b, December 1) "Imagining a World Without Growth", *New York Times*. Retrieved from http://www.nytimes.com/2015/12/02/business/economy/imagining-a-world-without-growth.html

Revkin, A.C. (2012, October 28) The #Frankenstorm in climate context. *Dot Earth*. Retrieved from http://goo.gl/497OIw

Revkin, A.C. (2012, October 31) "On Sandy and Humanity's Blah, Blah, Blah, Bang' Disaster Plans", *Dot Earth*. Retrieved from http://goo.gl/SIacSA

Revkin, A.C. (2013, June 18) "A Reality Check on a Plan for a Swift Post-Fossil Path for New York", *Dot Earth*. Retrieved from http://goo.gl/kcvUs

Revkin, A.C. (2013, March 12) "Can Wind, Water and Sunlight Power New York by 2050?", *Dot Earth*. Retrieved from http://goo.gl/FFqCK

Revkin, A.C. (2015, March 11) "Charting Clean-Energy Paths in New York and Beyond", *Dot Earth*. Retrieved from http://goo.gl/xaDBaQ

Revkin, A.C. (2016) "My Climate Change", *Issues in Science and Technology*, Winter, 27–36.

Rosen, J. (2012, June 25) "Covering Wicked Problems: Keynote Address to the 2nd UK Conference of Science Journalists", *Press Think*. Retrieved April 21, 2016 from http://pressthink.org/2012/06/covering-wicked-problems/

Sarewitz, D., Pielke Jr., R. (2013, May) "Learning to Live with Fossil Fuels", *The Atlantic*. Retrieved from http://www.theatlantic.com/magazine/archive/2013/05/learning-to-live-with-fossil-fuels/309295/

Thompson, M., Rayner, S.S. (1988) "Cultural Discourses", in Rayner, S., Malone, E.L. (eds.) *Human Choice and Climate Change: An International Assessment, Vol. I: The Societal Framework*. Columbus, OH: Battelle Press.

Verweij, M., Douglas, M., Ellis, R., Engel, C., Hendriks, F., Lohman, S., Ney, S., Rayner, S., Thompson, M. (2006) “Clumsy Solutions for a Complex World: The Case of Climate Change”, *Public Administration* 84: 847–843.

Weingart, P., Engels, A., Pansegrau, P. (2000) “Risks of Communication: Discourses on Climate Change in Science, Political, and the Mass Media”, *Public Understanding of Science* 9: 261-283.

Wihbey, J. (2011, September 27) “Research Chat: Andrew Revkin on Covering and Using Scholarship”, *JournalistResource.org*.