Disruptive ideas: public intellectuals and their arguments for action on climate change

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In this paper, I analyze three distinct groups of prominent public intellectuals arguing for action on climate change. I detail how public intellectuals establish their authority, spread their ideas, and shape political discourse, analyzing the contrasting stories that they tell about the causes and solutions to climate change. ‘Ecological Activists’ like U.S. writer/activist Bill McKibben or Charles Sturt University (AU) philosopher Clive Hamilton argue that climate change is a symptom of a capitalist society that has dangerously exceeded the carrying capacity of the planet. They are skeptical of technological or market-based solutions to the problem, urging the need for a global movement that dramatically re-organizes society. ‘Smart Growth Reformers’ like UK economist Nicholas Stern or former U.S. vice president Al Gore agree that climate change poses catastrophic risks but argue that those risks can be avoided if political leaders adopt the right market-based mechanisms, enabling sustainable economic growth to continue. ‘Ecomodernists’ like *The New York Times* (U.S.) writer Andrew Revkin and Oxford University (UK) anthropologist Steve Rayner argue for recognizing the biases in how we have conventionally defined climate change as a social problem. Progress will be achieved not by relying on social protest or market-based mechanisms, but by government investment in a diverse menu of policies that catalyze technological innovation, protect against climate impacts, and provide developing countries abundant, cleaner sources of energy. To conclude, I propose methods for building on my analysis and urge the need for forums that feature a diversity of voices, discourses, and ideas.

INTRODUCTION

In a July 2012 article at *Rolling Stone* magazine, Bill McKibben warned that fossil-fuel companies were committed to extracting as much of their oil, gas, and coal holdings as possible, a goal that would far exceed what scientists had determined was the world’s safe carbon budget. This ‘terrifying new math’ meant that the fossil-fuel industry was ‘Public Enemy Number One to the survival of our planetary civilization’, wrote McKibben. Drawing comparisons to the anti-apartheid movement, he called on universities and other institutions to divest their holdings from the fossil-fuel industry.1

McKibben’s article generated millions of social media recommendations and visits to *Rolling Stone*’s web site. Among the readers was billionaire activist Tom Steyer, who sought out McKibben to meet for a mountain hike. By the end of their hike, Steyer had pledged to support the fossil-fuel divestment campaign.2,3 In the years since, Steyer has divested...
his personal wealth from fossil-fuel companies, played a key role in Stanford University’s decision to divest from coal companies, bankrolled a TV campaign opposing the Keystone XL oil pipeline, spent millions in election races to defeat Republican ‘climate deniers’, and helped generate hundreds of news stories calling attention to these causes.

Despite the many studies that scholars have produced, analyzing the institutional, political, and economic factors that shape environmental debates, as historian Paul Sabin notes, we seldom have considered the influence of highly visible public intellectuals like McKibben. Through their best-selling books, articles, and commentaries, these public intellectuals influence how we think and talk about climate change, infusing the abstract with meaning, and turning the complex into a commonly shared vocabulary. Yet, they are also criticized for their characterization of uncertainty, for imposing their point of view, for lacking specialized credentials, for reducing explanations to a single idea, theory, or field, and for blurring the lines between objective analysis and ideological argument.

In this paper, I analyze three distinct groups of public intellectuals arguing for action on climate change. Although all three groups accept the undeniable, human causes of climate change, each group emphasizes a contrasting discourse, problem framing, and set of solutions.

The first group, Ecological Activists, argue that climate change is a symptom of a capitalist society that in prioritizing economic growth and consumerism has dangerously exceeded the carrying capacity of the planet. Skeptical of technological and market-based solutions, they argue the need for a new consciousness spread through grassroots organizing and social protest that would dramatically transform society. Examples of public intellectuals writing in this tradition include U.S. writer and activist Bill McKibben, Charles Sturt University (AU) philosopher Clive Hamilton, The Guardian (UK) columnist George Monbiot, Canadian author and broadcaster David Suzuki, UK writer and activist Paul Kingsnorth, and Canadian writer and activist Naomi Klein.

The second group, Smart Growth Reformers, agree that limits to growth should be respected, but assume that environmental limits can be stretched if the right market-based mechanisms are implemented, enabling ‘sustainable’ economic growth to continue indefinitely. In this case, not only would action on climate change generate profits and create new industries, but international cooperation would also open the door to combating poverty and other global problems. Examples of public intellectuals writing in this tradition include former U.S. Vice President Al Gore, The New York Times’ (U.S.) columnist Tom Friedman, the London School of Economics (UK) economist Nicholas Stern, Columbia University (U.S.) economist Jeffrey Sachs, and U.S. energy analyst Amory Lovins.

The third group, Ecomodernists, argue for embracing the power of human ingenuity and creativity to manage the risks of climate change, and for recognizing the biases in how we have conventionally approached the problem. Social change will be catalyzed not by protests or market mechanisms, but by government investment in a diverse menu of policies and technologies that lower the cost of action and that protect against climate impacts. Examples of contemporary public intellectuals writing in this tradition include U.S. entrepreneur and author Stewart Brand, Kings College London (UK) scientist Mike Hulme, University of Colorado-Boulder (U.S.) political scientist Roger Pielke Jr, Oxford University (UK) anthropologist Steve Rayner, Breakthrough Institute (U.S.) cofounders Ted Nordhaus and Michael Shellenberger, and The New York Times’ (U.S.) environmental writer Andrew Revkin.

I begin the paper by evaluating how public intellectuals in the climate change debate establish and maintain their authority, how their ideas and arguments spread and diffuse, and how they shape debates and decision-making. Then, based on their main works, I analyze the different stories that each group of public intellectuals tell about the causes, risks, and solutions to climate change, the intellectual traditions they reflect, and their outlook on society, nature, technology, policy, and social change. In this regard, my analysis is informed by my collaborations and interactions with groups and individuals representing each of the three discourse traditions, though my own outlook is closest to that of the Ecomodernists. In the conclusion, I propose several methods for building on my framework and analysis. I also argue the need for investment in media and public forums that challenge how each of us think and talk about climate change, constructively engaging with the ideas and arguments of others. On this goal, ‘the idea here is not just to highlight points of communality and sites for compromise’, note political scientists Hayley Stevenson and John Dryzek, ‘but also to provide possibilities for contestation and the reflection it can induce.’

ESTABLISHING AUTHORITY AND GAINING INFLUENCE

Relative to climate change, the prominence of the public intellectuals reviewed in this paper is especially remarkable, given the extremely crowded media and...
publishing space within which they work. Consider that over the past two decades, an estimated 14,000 peer-reviewed studies (see analysis by James Lawrence Powell)\(^9\) and 30,000 English-language books on climate change have been published\(^6\) with more than 25,000 stories about the issue running at the five major U.S. newspapers alone (correspondence with Max Boykoff based on his monthly tracking of trends in news attention to climate change).\(^{10}\) Yet, as I show in this section, several unique characteristics and factors enable the work, ideas, and arguments of these public intellectuals to stand out in a highly competitive marketplace.

**Who Is a Public Intellectual?**

Several prominent public intellectuals in the climate debate like Pielke Jr, Sachs, Hamilton, Stern, Rayner, or Hulme are career academics, tenured professors, and research institute leaders who have sparked wider debate through their popular books, essays, and commentaries. Some like McKibben, Monbiot, and Revkin began their careers as widely read journalists, commentators, and authors, but today also hold professorships, fellowships, or lectureships at academic institutions. Others as an outgrowth of their work as public intellectuals have also founded their own advocacy organizations or think tanks. Examples include Suzuki (The David Suzuki Foundation), McKibben (350.org), Gore (The Climate Reality Project), Nordhaus and Shellenberger (The Breakthrough institute), and Kingsnorth (The Dark Mountain Project).

As these examples suggest, to function in the role of public intellectual, there is no defining credential such as an advanced degree or career threshold such as academic tenure to achieve. Instead, regardless of professional background or institutional affiliation, as past scholarship has described, public intellectuals via their writing and related activities tend to exhibit three defining traits. First, they gain their influence by writing for a broader public on matters of popular concern, rather than narrowly targeting an expert audience and emphasizing the more technocratic details of a debate. Second, instead of straight reporting of events or translation of expert knowledge, they specialize in the synthesis of complex, interdisciplinary areas of research, engaging in deductive analysis across cases and events, ‘working from the top down’, drawing connections, making inferences, and offering judgments. Third, in combination with their synthesis and analysis they argue on behalf of causes and policies, serving in the role of social critic, advocate, or activist.\(^{11}\)

Through this style of work, public intellectuals can at times transform expert knowledge by offering new interpretations, observations, and conclusions that are then subsequently cited and further developed by academic specialists.\(^7\) By elevating attention to specific disciplines and networks of experts, public intellectuals can also influence the fields and experts who are considered authorities and quotable sources. This boundary work signals what views might be mainstream and legitimate versus what might be contrarian or out of bounds.\(^{12,11}\) Others like Revkin, Hulme, or Pielke Jr specialize in examining how and why scientific research was done, sometimes positing alternative interpretations, or drawing connections to ongoing debates about climate change. The emphasis is on taking the public ‘back stage’ to examine the institutions, assumptions, ideologies, political factors, and personalities that influence the production of expert knowledge.\(^7,14\)

By focusing on synthesis, analysis, and criticism and by writing for popular outlets rather than academic forums, public intellectuals are generally less constrained by the need to maintain access to those in power, or by conventional thought within academe. This trait provides more freedom to challenge prevailing assumptions and conventions, developing in the process a distinctive voice. Moreover, their popularity and ability to produce work across multiple platforms can give them greater flexibility to choose their subjects and to frame issues as they see fit. Public intellectuals also depend on maintaining a reputation for gathering evidence, citing authoritative sources, and appearing flexible enough to change their opinions in the face of contradictory evidence.\(^6,7,12,15\)

**Personality, Celebrity, and Branding**

To engage audiences, public intellectuals often shift between detached analysis and personalization, merging their public and private selves by relating complex ideas or problems to personal anecdotes, ‘journeys’, ‘realizations’, confessional, or internal conflicts.\(^7,16,17\) Gore’s documentary *An Inconvenient Truth* is a leading example of this merging of public advocacy with personal disclosure, but so too are the books, columns, and essays by McKibben, Friedman, or Suzuki. These writers take readers on a journey with them as they visit with various ‘characters’ who represent or capture their point of view, whether CEOs, farmers, entrepreneurs, activists, or scientists.

Even a public intellectuals’ appearance, headshot, dress, home, and mode of travel are often (or expected to be) consistent with the subject matter they write about. These attributes are especially important for intellectuals-turned-activists like McKibben, Suzuki, or Kingsnorth, establishing with audiences their authenticity and/or a sense of commitment,
provides a full archive of his writings and talks, and work of public intellectuals has the potential to ‘catch readership and influence. In this media ecosystem, the online availability, circulation, and commentary about their work has expanded their international reach. McKibben, for example, has more than 100,000 subscribers to his page. Pielke Jr has achieved influence in part through his personally branded blog, and readers can similarly follow along with the thoughts of Gore by way of his online journal. Monbiot’s internationally popular web site provides a full archive of his writings and talks, and Kingsnorth has used his site to crowd fund the publication of his most recent works.

Public intellectuals writing about climate change benefit from a media culture that emphasizes celebrity, and audiences who have come to depend on personalization to understand complex issues. Public intellectuals like Suzuki, Brand, or Kingsnorth ‘vividly represent ideas, issues and ideologies, allowing people to visualize and make sense of abstract concepts’, writes communication scholar Declan Fahy. Public intellectuals are also commodities, in that their books, writing, and speeches are bound up with a dense web of promotion, selling, marketing, and financial transactions.

Friedman, Suzuki, and Gore have developed global images with their books spending weeks on best-seller lists and their film or television productions reaching audiences across countries. McKibben, for his part, has served as the enthusiastic endorser of similarly minded authors writing about the environment, agriculture, technology, and food. His efforts include ‘blurbs’ and social media endorsements, and the authoring of prefaces or reviews. To efficiently brand a new author or public intellectual, linkages to writers like McKibben, Friedman, or Monbiot are routinely made by publishers, critics, and interviewers, and by way of recommended choices at Amazon and other online booksellers.

Despite the fact that climate change remains a lower-tier concern for most members of the public, there is a sizable, passionate, and intensely interested segment of the public who form the audience for public intellectuals. Moreover, given that climate change as a social problem transcends national boundaries, the online availability, circulation, and commentary about their work has expanded their international readership and influence. In this media ecosystem, the work of public intellectuals has the potential to ‘catch on’, ‘stick’, or ‘go viral’, spreading by way of online spirals of attention driven by social media sharing and interpersonal conversations.

Articles by public intellectuals like Friedman, Monbiot, or McKibben are often pushed to prominence as the most popular, read, or emailed articles at the sites of The New York Times and The Guardian or magazines like Rolling Stone, which further expands their readership and reach. These articles are flagged, highlighted, contextualized, and spread by way of comments, Facebook ‘like’ buttons, and indicators of how often a story has been re-tweeted. Readership is further boosted through meta-commentary by bloggers and journalists at other news sites, and by advocacy groups who flood social media feeds with links and reactions. As was the case in McKibben’s Rolling Stone article, these dynamics can transform the original analysis or perspective into a noteworthy political event.

Creating a Shared Outlook and Discourse

In this fashion, public intellectuals may have their greatest impact on what political scientist Amitai Etzioni calls ‘communities of assumptions’. These interpretative communities are comprised of the shared worldviews and mental models that shape the judgments of activists, funders, journalists, and other influentials. Shared assumptions on complex problems like climate change ‘serve as the frameworks that influence the ways numerous specific public and private policies are received and evaluated’, writes Etzioni (Ref 12, p. 6). When shared assumptions are not available, views of complex problems like climate change become ‘unsettled, cluttered with details, and lacking organizing principles and an overarching, integrating picture’ (Ref 12, p. 8). Therefore, organizations and funders invest considerable resources establishing communities of assumptions about climate change, assumptions that are intended to eventually be taken for granted and accepted as conventional wisdom. Examples include not only providing grants and financial support for aligned advocacy groups, think tanks, media organizations, blogs, and social media campaigns, but also directly supporting the work of public intellectuals through fellowships, endowed professorships, research support, conferences, the distribution of their books, or the financing of related documentary films.

Once assumptions and legitimate authorities are established, it becomes ‘costly in terms of human mental labor to reexamine what has finally come to be taken for granted’, writes Etzioni (Ref 12, p. 8). When events, studies, or arguments arise that challenge a prevailing community of assumptions, they
are often actively ignored, downplayed, dismissed, or ‘de-bunked’ by rival public intellectuals and their aligned networks. Yet, not only do public intellectuals help create and defend prevailing assumptions, they can also catalyze the shift to new worldviews and judgments. Political leaders and news organizations typically avoid challenging widely shared beliefs about a social problem. They instead rely on public intellectuals to lead the way, ‘disturbing the canonical peace’ and ‘defamiliarizing the obvious’ by identifying the flaws in conventional wisdom and by offering alternative renderings of a problem (Ref 12, p. 8).

In this paradigm challenging role, the main contribution of the public intellectual, argued Michel Foucault, is to ‘question over and over again what is postulated as self-evident, to disturb people’s mental habits, the way they do and think things, to dissipate what is familiar and accepted, to reexamine rules and institutions’ (Ref 25, p. xvii). Conversely, as Etzioni warns, in the absence of public intellectuals challenging assumptions, those working on social problems may ‘be lacking in reality testing, be slower in adapting [their] policies and viewpoints to external as well as domestic changes, and be more ‘ideological’.’ (Ref 12, p. 6).

In defining for us what climate change means, as I analyze in the next section, public intellectuals employ consistent discourses, narratives, and frames of reference. These communication tools offer a common storyline about climate change, placing the problem in an ideological or political context, describing the problem’s origins, and defining who or what is to blame, what should be done, and what action would mean for the future. Discourses and frames do so by referencing historical moments and cultural metaphors, and by emphasizing specific sources of authority, whether scientific, philosophical, legal, economic, or moral.

As they are promoted, spread, and adopted, these discourses informally guide the work of advocates, funders, journalists, and governmental officials. In this sense, public intellectuals help construct a common outlook and language among networks of like-minded influentials. Yet given the complexity of climate change as a social problem and the difficulty at falsifying predictions about the future, it is possible for equally plausible narratives and explanations about its implications and solutions to exist. So it is not surprising that among public intellectuals, as I detail in the next section, there is disagreement over what the issue means for society and what should be done, and clashes among groups and activists who adopt one discourse over another to guide their work.

These disagreements reflect differing values, social identities, intellectual traditions, and visions of the ‘good society’. They are embedded in contrasting cultural constructions of nature, risk, progress, authority, and technology. Climate change is therefore ‘a synecdoche—a figurative turn of phrase in which something stands in for something else—for something much more important than simply the way humans are changing the weather’, notes Hulme (Ref 32, p. 298).

**PUBLIC INTELLECTUALS AND THEIR ARGUMENTS**

In this section, I analyze the arguments of Ecological Activists, Smart Growth Reformers, and Ecomodernists. Many of the public intellectuals reviewed are best known for their books and related works that appeared between 2006 and 2010, but where relevant, I note where the arguments of these writers may have shifted in the years since. Drawing on their major works, I assess how they define the problem of climate change, the intellectual traditions that they draw on, their outlook on nature and technology, and their views on politics and social change (see summary Table 1).

**Ecological Activists**

In describing the threat of climate change, Ecological Activists reflect the tradition of Paul Ehrlich’s best-selling The Population Bomb, the Club of Rome’s The Limits to Growth, and similar works. Climate change is frequently dramatized through the metaphor of ‘overshoot and collapse’, in which computer modeling and other analyses predict that human population growth, rising consumerism, technological development, and resource depletion will exceed the carrying capacity of the planet.

For Ecological Activists, almost every extreme weather event or natural disaster is linked to climate change, from droughts, wildfires, and floods, to hurricanes, mudslides, and winter storms. These events are evidence that nature exists in a precarious state of balance with disturbance by humans risking the collapse of civilization. Ecological Activists like McKibben or Kingsnorth frequently cite the works of Emerson, Thoreau or Wordsworth, and/or in the case of Suzuki, fuse their appeals with teachings from indigenous peoples. In these narratives, wild and pristine regions are portrayed as Eden-like places where we can escape our too-muchness, and bring wonder back into our lives. From this perspective, note scholars, stabilizing climate emissions would not only
| Group                | Problem Framing                                                                 | Outlook on Nature                                                                 | Outlook on Technology                                                                 | Policy Proposals                                                                 | Model of Social Change                                                      |
|---------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Ecological Activists| Capitalism, consumerism has exceeded the carrying capacity of the planet, risking catastrophe, or certain collapse. | Sacred, fragile nature provides human salvation. Must be kept separate, protected against human influence. | Advocate small-scale, locally owned renewables. Warn that nuclear energy, genetic engineering too risky, promote consumption.¹ | Call for strong regulation of industry, rationing of energy use, localization of economies, food systems, governance. | New consciousness spread through grassroots organizing, social protest. Artistic attention to ‘ecocide’, myth of progress.² |
| Examples:          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| B. McKibben        |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| D. Suzuki          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| C. Hamilton        |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| G. Monbiot         |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| N. Klein           |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| P. Kingsnorth      |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| Smart Growth Reformers| Climate change is ultimate market failure, corrected by putting price on carbon. Progress blocked by ‘deniers’. | Nature has limits, but ‘dangerous interference’ can be avoided by smart policy, ‘stabilizing emissions’, enabling ‘sustainable growth’. | Market pricing will drive adoption of renewables, energy efficiency. Need government to catalyze nuclear, carbon capture.² | Call for binding international agreement, national carbon pricing, and government investment in innovation. | Market mechanisms drive change. More recent calls for grassroots pressure, third-party movements, new ‘mindfulness’. |
| Examples:          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| T. Friedman        |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| Gore               |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| N. Stern           |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| J. Sachs           |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| A. Lovins          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| Ecomodernists      | Misdiagnosed as environmental problem and market failure. Should be re-framed as energy innovation and societal resilience challenge. | Nature is more resilient than fragile. Innovative, high-energy planet can promote human progress, while conserving, managing nature. | Renewables not capable of meeting energy demand. Need government to develop natural gas, nuclear, carbon capture, other innovations. | Argue for portfolio of ‘clumsy’ policy approaches across levels of society, government investment in energy technologies and resilience strategies. | Technologies that lower cost of action, public forums that challenge assumptions create conditions for cooperation, innovation. |
| Examples:          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| S. Brand           |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| M. Hulme           |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| R. Pielke Jr       |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| S. Rayner          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| T. Nordhaus/       |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| M. Shellenberger   |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |
| A. Revkin          |                                                                                  |                                                                                  |                                                                                        |                                                                                  |                                                                                 |

¹Monbiot supports nuclear, carbon capture.
²Gore skeptical of nuclear, carbon capture, puts stronger faith in market than Sachs or Stern to drive innovation.
³Artistic expression specific focus of Kingsnorth.
restore a divine harmony and balance to the world but also enable human salvation.32

Industrialization and capitalism are the forces that have corrupted nature and disrupted balance. In a world obsessed with consumerism, argue McKibben and Hamilton, we have embraced a false vision of the good life that not only promotes unhappiness and dissatisfaction41 but generates intense psychological resistance to arguments for action on climate change since such appeals force us to reconsider our core identity as consumers.42

As an alternative model for society, Ecological Activists frequently cite the arguments of philosopher Arne Naess,43 the ecological economist E.F. Schumacher,44 and the steady-state economics of Herman Daly.45 These thinkers urged that society needed to deprioritize economic growth and maximize well-being through minimum consumption that balances a ‘good life’ with the carrying capacity of the planet. To do so, traditional definitions of economic growth must cease, with progress defined instead by quality of life indicators related to health, happiness, and community well-being.46

For Ecological Activists, large-scale technological innovations are not capable of adequately managing the threat of climate change and may only prolong our growth fetish.27 They are skeptical of the ability of nuclear energy or carbon capture and storage to address climate change, arguing that they are too risky, too expensive, and/or too far-off in their development.42 They also tend to oppose ‘techno-fixes’ like geo-engineering and genetically engineered crops since not only do they introduce unknown risks but they also divert attention away from the need to fundamentally rethink our commitment to economic growth and consumerism.39,42

Ecological Activists instead tend to prioritize those things in society that they view as having been created through natural processes, that are in harmony with nature, and that are local and appropriate (e.g., smaller) in scale.27 In line with this outlook, Ecological Activists argue on behalf of a transition to smaller scale, locally owned solar, wind, and geothermal energy technologies and organic farming practices, holding up Germany as a leading example of how a renewable energy transition could take place (a notable exception is George Monbiot who advocates the need to invest in developing carbon capture and storage technologies and next generation nuclear reactors as part of a broader portfolio of strategies).48

To spark this transition, Ecological Activists support conventional policy approaches such as a carbon tax and a binding international agreement on emissions, but also believe that these policies are not enough, and risk benefiting corporations at the expense of citizens.48–50 Instead of market-based approaches, Ecological Activists prefer regulation and restrictions. Monbiot, for example, proposes a World War II-style carbon rationing system.48 Yet most notably, to catalyze the political change needed, Ecological Activists argue on behalf of a fundamental reconsideration of our worldviews, aspirations, and life goals, a new consciousness spread through grassroots organizing and social protest that would dramatically re-organize society, decentralize our politics, reverse globalization, and end our addiction to economic growth.7,49,50

For McKibben, influencing the energy choices of China, India, and other developing countries depends on spreading the climate movement to those societies, a major rationale behind his cofounding of 350.org. The grand bargain will be that as developed countries downsize their economies, devolve their political decision-making, and limit their consumption, they will share their extra wealth and renewable technologies with developing nations, and in return these countries would choose a different, less consumptive path.51

At home, though, in transforming our lives and communities, much of our political malaise, gridlock, personal dissatisfaction, and incivility will be solved. As these goals are pursued, argues Klein, climate change would become the unifying issue for a global network of left-wing activists focused on a broad portfolio of social causes and political reforms.49,50 For Hamilton, civil disobedience and law breaking are construed less as viable tools for averting catastrophe but as psychological coping strategies, helping us come to terms with the decline of our species.42 With a somewhat similar outlook, Kingsnorth cofounded the Dark Mountain Project to promote writers, poets, and artists who engage with the truth of our ‘ecocide’, challenging the ‘stories which underpin our civilisation: the myth of progress, the myth of human centrality, and the myth of our separation from “nature”’.51

Smart Growth Reformers

Smart Growth Reformers agree with Ecological Activists that limits to growth should be respected. To prevent catastrophe, they similarly emphasize the need to ‘stabilize’ atmospheric concentration levels of greenhouse gases, arguing that crossing specific thresholds poses the risk of ‘dangerous interference’ with nature.52 Yet they also assume that these environmental limits can be avoided if the right market-based policies are adopted, enabling ‘sustainable’ economic growth to continue indefinitely.27
Climate change, as Stern defines the problem, ‘is a result of the greatest market failure the world has ever seen’ (Ref 53, p. xiii), and can only be solved by policies that set a price on carbon-intensive energy sources, industries, and practices. These ‘pricing mechanisms’ like a carbon tax or cap and trade system would make solar, wind, and other clean energy technologies more competitive and industries more energy efficient. In this, Smart Growth Reformers view many business leaders and corporations as valuable partners (rather than opponents), and action on climate change defined as potentially profitable.27

Smart Growth Reformers not only distinguish themselves from Ecological Activists by their strong faith in economics and the market, but several in this tradition also elevate above other factors the role of the United States. For example, in his internationally best-selling book Hot, Flat, and Crowded, Friedman argues that climate change and the global economic recession are symptomatic of a United States that had ‘lost its groove’. Americans had ‘binged on credit and carbon and lost touch with some of the bedrock values that made our nation wealthy, powerful, respected, trusted, and inspiring to others’ (Ref 54, p. 29). At the same time, America’s problems were closely connected to global trends. In Friedman’s well-known formulation, the world was ‘getting hot (global warming), flat (the rise of high-consuming middle classes all over the world), and crowded (on track to adding roughly a billion people every thirteen years)’ (Ref 54, p. 8).

Friedman conceives of the world as a ‘growth machine’ that ‘no one can turn off’. Yet, in the face of this inevitability, the United States can tackle climate change and still grow its economy by adopting what he calls a ‘Code Green’ plan that would leverage the ‘greatest innovation engine God ever created, which is the combination of American research universities, venture capital, and the marketplace’. Not only would such a course of action demonstrate the leadership needed to persuade China, India, and other developing countries to choose a similar path, but it would help the United States restore its flagging morale.55 In Inconvenient Truth and other works, Gore emphasizes similar themes but adds a strong emphasis on the role of the U.S. fossil-fuel industry, the George W. Bush administration, the billionaire Koch brothers, and allied conservative leaders in denying the urgency of climate change and blocking political cooperation at home and abroad.56–59

Stern and Sachs adopt a broader view of U.S. actions and interests and their relevance to global trends. In this case, their arguments reflect the sustainable development and multilateralism discourse of the 1987 Brundtland report60 and the 2000 United Nations’ Millennium Development Goals.61 If a global deal on climate change can be reached, they argue, it would unleash an era of internationalism that would help slow world population growth, reduce income inequality, improve health outcomes, and alleviate extreme poverty.62–63

Reflecting in part ideas first introduced by Lovins, among the core arguments of Smart Growth Reformers, is that business leaders, engineers, entrepreneurs, and other technocrats can catalyze a ‘soft energy path’ revolution that would allow sustainable economic growth to continue and make tackling climate change financially profitable.64 Under these conditions, as Lovins and coauthors argued in their 1999 book Natural Capitalism, the ‘menu of climate-protecting opportunities’ is ‘so large that over time, they can overtake and even surpass the pace of economic growth’ (Ref 65, p. 144). For evidence in support of their arguments, Smart Growth Reformers reference the use of emissions trading approaches that reduced lead in gasoline and sulfur dioxide pollution from coal-burning power plants.66

In terms of technologies other than the soft path options of solar, wind, geothermal, and energy efficiency, Gore argues that scaling up nuclear energy in time to prevent dangerous climate change would be too costly, that such development risked nuclear arms proliferation, and that the intensive mining of uranium resources would be environmentally damaging.57 Gore is even more critical of carbon capture and storage, asserting that the technology is too far-off in the future. Yet as he adds putting a high price on carbon would be a ‘fairly simple solution to resolving all the questions and uncertainties’ about the technology since the ‘market forces will drive us quickly toward the answers we need’ (Ref 57, p. 148).

In comparison, Friedman, Sachs, and Stern each advocate the expansion of nuclear power since they believe that renewable energy technologies are not sufficiently advanced to provide for the energy needs of the world.54,62,63 For Sachs and Stern, their outlook on carbon capture and storage also differs considerably from Gore, as they argue that given the increasing reliance worldwide on coal and natural gas fired power plants, it would be impossible to switch away from such power sources without disproportionately harming poorer countries. Though prioritizing market-based pricing mechanisms, the two economists also place more prominent emphasis than Gore on the direct role of government in fostering the technological innovation that will be needed.62,63

To achieve their preferred policy ends, as these examples reflect, the model of social change advocated by Smart Growth Reformers tends to be strongly
technocratic, reflecting a strong faith in the ability of science, engineering, and economics to identify solutions and persuade others. Yet in recent years, Smart Growth Reformers have shifted closer to Ecological Activists in their outlook by emphasizing the need for grassroots public pressure.

Gore, for example, has urged grassroots mobilization on par with the U.S. civil rights movement, recommending that his readers ‘become a committed advocate for solving the crisis’ by speaking up in everyday conversations when people express doubts about the threat. He has also voiced support for the fossil-fuel divestment movement.\(^58\,59\) Sachs urges a ‘new mindfulness’ that rethinks a blind pursuit of economic growth, smaller, localized government, a stronger public voice in decisions, and a third-party movement to remove money from politics, breaking the center-right monopoly in U.S. politics.\(^67\) Friedman argues that political ‘shock therapy’ in the United States needs to come not from the left but from a ‘radical center’ that recruits centrists like billionaire Michael Bloomberg to run for president.\(^68\)

**Ecomodernists**

Ecomodernists are perhaps best known for their prominent critiques of Ecological Activists, Smart Growth Reformers, and the environmental movement generally. Based on these critiques, in recent years they have articulated their own vision of society and nature, preferred policy options, outlook on technology, and model of social change.

Climate change has been misdiagnosed as a conventional pollution problem akin to acid rain or ozone depletion, argue Ecomodernists, threats that were limited in scope and therefore more easily solvable.\(^31\,69\) In these cases, writes Pielke Jr, technological alternatives were already available and the economic benefits of action more certain, conditions that allowed policymakers to move forward even in the absence of strong scientific consensus.\(^69\) They similarly challenge the definition of policy action in terms of the ‘stabilization’ of greenhouse gas emissions, targets intended to avoid ‘dangerous interference’ with nature. Such arguments are premised on a mix of complex scientific projections and value judgments as to the nature of acceptable risks, impacts, costs, and trade-offs, making the threshold where ‘dangerous interference’ is reached a subjective judgment. The focus on stabilizing emissions through various mitigation strategies, they argue, also detracts attention away from the societal conditions such as poverty and coastal development that increase human vulnerability and therefore make climate change more ‘dangerous’, thereby limiting progress on much-needed societal resilience and adaptation efforts.\(^31\,32\,69\)

Ecomodernists criticize those like McKibben or Gore who warn that today’s extreme weather events and natural disasters are not only directly linked to climate change but also evidence of looming catastrophe if preferred policy actions are not taken.\(^70\,71\) Hulme, for example, argues that these fear-based appeals reflect a scientism that implicitly overlooks the uncertainty and diversity of scientific opinion, and can backfire by triggering public fatalism or skepticism.\(^31\,32\)

Relative to the many dimensions of climate change, explains Revkin, there are different distributions or ‘curves’ of expert knowledge. There is ‘clear-cut’ convergence among experts that more carbon dioxide equals a warming world, but on questions such as the increasing intensity of hurricanes, the pace of sea-level rise, the efficacy of policy actions, or the viability of different technologies, there is a much broader distribution of expert opinion. In these cases, he argues, the broad middle range of expert views should be given greater weight in public debate, rather than relying on tail-end perspectives.\(^72\)

In promoting their own outlook on nature and technology, Ecomodernists follow the lead of Brand\(^73\) in embracing what Revkin has dubbed the ‘positive Anthropocene’.\(^74\) In this new ‘Age of Us’, humans have generated considerable ecological and social risks, but at the same time, in the face of this uncertainty, possess the ability to create a better future.\(^73\,74\) Nature is far more robust and resilient than is often portrayed, and is not something that stands apart from humans, but rather has always been integrated into our lives, and used in ways to promote human progress.\(^75\)

Instead of a ‘politics of limits, which seeks to constrain human ambition’, Ecomodernists argue for shifting the frame of reference, defining action on climate change in terms of developing new energy sources, technologies, and societal resilience strategies (Ref 75, p. 17) ‘The 1.5 billion people worldwide who lack access to electricity means that ‘climate change is a reason to accelerate rather than slow energy transitions’, argue Nordhaus and Shellenberger. From this perspective, increasing the availability of cheaper, cleaner, more reliable energy sources in the developing world can reduce pollution, slow rates of deforestation, and limit land use, thereby actually serving to conserve nature rather than destroy it.\(^76\)

Yet Ecomodernists warn that current soft energy path technologies such as solar and wind are unlikely to be able to overcome the problems of intermittency, storage capacity, cost, and be scalable in time to alter the dynamics of fossil-fuel energy use and dependency worldwide.\(^69\,77\) They point to the demand for growth
in Asia, Africa, and Eastern Europe and the sunk costs that these regions are putting into coal power and other fossil fuels. As a result, innovations in nuclear energy, carbon capture and storage, and other technologies are needed that not only meet the demand for growth in these regions but also limit emissions from the thousands of coal plants already in place and scheduled to be built around the world.69

To jump start this transition, wealthy nations like the United States should move as quickly as possible to cleaner energy sources starting with the transition from coal to natural gas, then from gas to renewables and nuclear, and from gasoline to electric cars, argue Nordhaus and Shellenberger.76 Increasing the price of dirty fuels is only a first step, and Ecomodernists warn that we have put too much faith in carbon pricing and other market-based mechanisms to spur technological innovation. Climate advocates need to instead focus more intensively on understanding how technological innovation happens and the role of government as catalyst.69 The development of natural gas ‘fracking’ technology is a useful case study in how government financing—even in the absence of carbon pricing—catalyzed a society altering energy transition.78

In terms of their outlook on social change, Ecomodernists believe that political progress depends on presenting decision-makers with a broad menu of policy options and technologies. Climate change is so complex in scale that a single omnibus solution such as a national carbon tax or a binding international emissions agreement is unlikely to be either politically viable or effective.31,69 Instead, as Rayner and other Ecomodernists argue, the problem requires a portfolio of incremental ‘clumsy’ solutions, implemented at the state, regional, national, and bilateral levels and through the private and nonprofit sectors.79–81

At the international level, examples include reducing especially powerful greenhouse gases like black carbon (or soot) from diesel cars and dirty stoves and methane from leaky gas pipes. A similar strategy focuses on slowing the rate of deforestation, not through global treaties, but through bilateral negotiations with Indonesia, China, India, and other countries.89 Specific to the United States, to the extent that the Obama administration can make substantive progress on climate change, it will be through a combination of smaller scale, less politically visible executive actions such as proposed power plant emission rules, technology procurement programs, and funding for climate resilience efforts.81 As these smaller successes are achieved, argues Rayner and colleagues, we not only gain more time to deal with the bigger policy challenges but also start to rebuild networks of trust and cooperation while experimenting with new solutions and technologies.80

Ultimately, for Ecomodernists, technological innovation is likely to be the most important step toward achieving political cooperation. Once the technologies are available, which make meaningful action on climate change lower-cost, then much of the argument politically over scientific uncertainty will diminish. Under these conditions, they predict, it will be easier to gain support from across the ideological spectrum and from developing countries.69 Carbon capture and storage, 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 …’, writes Pielke Jr in a coauthored article.82

Finally, progress on climate change will require critical analysis of our assumptions and beliefs, a goal best reached through an engagement with a diversity of voices and ideas. In this direction, Hulme argues that his most significant contribution as a public intellectual is to be an ‘educator, a facilitator, an agent provocateur’ (Ref 32, p. 297). Revkin also views his role at his New York Times’ Dot Earth blog mainly as ‘interrogatory—exploring questions, not giving you my answer … I think anyone who tells you they know the answer on some of these complex issues is not being particularly honest’.83 Nordhaus and Shellenberger echo these sentiments arguing that we must start by ‘recognizing our own biases, perspectives, and agendas and attempting to hold them more lightly’.84 Acting on these principles, the two launched the Breakthrough Journal ‘aimed at challenging conventional progressive and environmental wisdom in service of creating a relevant and powerful new politics’85 and host the annual Breakthrough Dialogue, a retreat focused on ‘new thought for a new politics for a new century’.86

**CONCLUSION**

In this paper, I have analyzed how prominent public intellectuals establish their authority, spread their ideas, and influence the way we think and talk about climate change. Scholars can add to my analysis by further evaluating the public intellectuals representing the three groups outlined, and/or by evaluating other unique discourses and the public intellectuals representing them. One methodological approach would be to conduct a deeper case study analysis and evaluation of a single public intellectual like Suzuki, whose four-decade career is closely connected to the trajectory of Canada’s environmental debates. In this regard, historian Paul Sabin’s book evaluating the
dueling careers of Paul Ehrlich and Julian Simon, and communication scholar Declan Fahy’s forthcoming book analyzing ‘celebrity scientists’ such as James Lovelock offer valuable models to build on.

In future studies, public intellectuals from countries other than the United States, Canada, the UK, and Australia should also be assessed. Examples might include French intellectuals Bruno Latour and Pascal Bruckner, Indian activist and author Vandava Shiva, and German sociologist Ulrich Beck. In several notable cases, public intellectuals are not as easily classified as representing one of the three discourse traditions reviewed in this paper, but have been no less influential. Notable examples include UK sociologist Anthony Giddens, U.S. historian Naomi Oreskes, and U.S. climate scientist James Hansen.

A second, complementary research approach to the deep profile, as Richard Posner first proposed, would quantitatively operationalize, measure, and assess the impact of a variety of public intellectuals and/or discourse traditions. This might be done, for example, by measuring in news articles, commentaries, and reviews the impact of a best-selling book or documentary on the framing of the climate change debate or through citations, content analysis, and other indicators of a public intellectuals’ impact on scholarly thought and university curriculum. On this last possibility, given their prominence, many students may be most familiar with climate change via the selective lens provided by a handful of public intellectuals. In courses, drawing on scholarship and research that critically analyzes the role of public intellectuals can enhance the ability of students as citizens, scholars, and professionals to assess and participate in the climate change debate.

Finally, what is evident from my analysis is that multiple discourses about climate change exist, even among the most visible voices arguing on behalf of societal action. In some cases, the public intellectuals assessed offer dramatically different ideas and visions. In reflecting on the Ehrlich-Simon debate, Sabin warns that as rhetorical sparring partners, public intellectuals can become overly confident in their convictions and vitriolic in their criticism of others, as enthusiastic fans and selective audiences cheer them on.

Yet these clashing perspectives not only reflect efforts by public intellectuals, their allies, and funders to defend the distinct communities of assumptions that they have invested in across their careers, but as Hulme notes, the nature of climate change as cultural magnifying glass and mirror. As a magnifying glass, climate change forces us to examine—as Ecological Activists argue—the long-term implications of our economic and political systems, the global reach of our actions, and our identities as consumers. But climate change also serves as a mirror, forcing us—as Ecomodernists argue—to reflect on how our own societal aspirations and values shape our technological choices and preferences, or impact energy impoverished publics in China, India, Africa, and elsewhere.

If climate change is to function as a mirror, we will need more media and public forums that force critical reflection and examination, rather than allowing public intellectuals to play to a like-minded audience. On the road to managing the threats posed by climate change, grassroots activism and political reforms are important, as is the quest for a more advanced arsenal of technological options, and a reconsideration of our economic goals. But so too is investment in our capacity to learn, discuss, question, and disagree in ways that embrace multiple discourses, ideas, and voices. Given the socially contested terrain of climate change, as Rayner first argued in a 1989 coauthored paper, ‘progress lies not in our choosing one position on that terrain and then rejecting those that are in contention with it, but in recognizing and understanding all these positions and then finding ways of negotiating constructively between them’ (Ref 26, p. 142). Leaving out voices or perspectives not only weakens our ability to understand the complexity of climate change but also risks the loss of legitimacy and trust among key stakeholders and constituencies. Similarly, as Sabin concluded after evaluating the clash between Ehrlich and Simon: ‘Our task is not to choose between these competing perspectives but rather to find ways to wrestle with their tensions and uncertainties, and to take what each offers that is of value’ (Ref 5, p. 227).

Some might argue that focusing on self-reflection, negotiation, and dialog at this stage in the climate crisis is too little and far too late. But most of the public intellectuals assessed in this paper would likely agree that there is no solution or end to climate change as a problem. Our interpretation of climate change will continue to evolve as does the complexity of the problem, and in coming years, a new generation of public intellectuals will tell familiar and novel stories about why it matters and what should be done.

**NOTES**

a Lexis-Nexis search of major world publications including key words ‘Steyer’ and ‘pipeline’ or ‘divest’, July 1, 2012, to August 1, 2014.

b The labels ‘Ecological Activists’, ‘Smart Growth Reformers’, and ‘Ecomodernists’ reflect labels that
each group have applied to themselves; and/or are terms or concepts frequently referenced in their writing. The labels for each group are meant to serve as heuristics for identifying a consistent outlook or set of major arguments.

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