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**Nature's Prophet:
Bill McKibben as Journalist, Public
Intellectual and Activist**

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INTRODUCTION

Over the past two decades, a unique class of journalist and public intellectual has gained prominence. Rather than straight reporting, these “knowledge journalists” specialize in the translation of complex subjects, often championing specific policy positions or causes. As public intellectuals, they tend to view the world deductively, immersing themselves in the synthesis of complex areas of research, offering analysis across cases and events. Through their best-selling books and commentary, they influence how we think and talk, infusing the abstract with meaning, and turning the complex into a common 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 often, for blurring the lines between journalism and activism.

Knowledge journalists in popular discussion remain loosely identified as celebrity authors who trade in big ideas, coin trends, drive book sales, and inspire movements. Leading contemporary examples include *The New York Times*’ columnist David Brooks (author of *The Social Animal*),¹ CNN/*Time* magazine’s Fareed Zakaria (*The Post American World*),² *The Nation*’s Naomi Klein (*The Shock Doctrine*),³ and University of California journalism professor Michael Pollan (*The Omnivore’s Dilemma*).⁴ Yet despite their prominence, little to no scholarship has been done on the nature of their work or their influence.

Scholars and critics understandably spend considerable time documenting perceived media biases and distortions, finding fault where the news media fail to accurately convey the complexity of a problem like climate change. But in generating a litany of concerns, we seldom consider the super-achievers and outliers among journalists. As public intellectuals, these writers in the tradition of Walter Lippmann “provide not only the facts but also the formats, norms, and rhetorics that citizens employ to develop their opinions and enter wider discussion,” argue sociologists Ronald Jacobs and Eleanor Townsley. “Studying who these communicators are and what cultural practices they use in their debates is just as important as identifying the range of relevant facts that news media do or do not provide.”⁵

In an effort to better understand the nature and impact of knowledge journalists, in this paper I focus on writer-turned-activist Bill McKibben and his influence over the past twenty-five years on

the debate over climate change. In doing so, I draw comparisons to other prominent journalists and public intellectuals writing on the subject, including *The New York Times'* columnist Tom Friedman (author of *Hot, Flat, and Crowded*)⁶ and *New York Times'* environmental writer Andrew Revkin (the *Dot Earth* blog).⁷

In 1989, at the age of twenty-nine, McKibben published *The End of Nature*,⁸ recognized as the first popular book about climate change. He warned that humans had become the “most powerful source for change on the planet,” a potentially catastrophic achievement that marked an end to our traditional understanding of nature. Climate change, unlike other environmental problems, was not conventionally solvable; our best hope was to avert the most devastating impacts. Yet McKibben was deeply skeptical of technological approaches to the problem. The only possible path towards survival, he argued, was through a fundamental reconsideration of our worldviews, aspirations, and life goals, a new consciousness that would dramatically re-organize society, ending our addiction to economic growth and consumerism.

In the more than two decades since publishing *The End of Nature*, across more than ten books and scores of articles, McKibben has elaborated on these original arguments, drawing on studies, research, and his personal experience to explain what it would take to survive on a tough, new planet. Yet despite his success as a top-selling author, McKibben grew increasingly frustrated with the unwillingness of political leaders to act on climate change. In 2008, he co-founded 350.org, an activist group specializing in grassroots campaigns targeting the fossil fuel industry and elected officials. In the years since, McKibben has become the most visible environmental activist in the United States, pioneering new methods of social protest, and redefining the way environmental groups practice politics.

Yet McKibben's line-in-the-sand opposition to the Keystone XL oil pipeline, his skepticism of technology, and his romantic vision of a future consisting of small-scale, agrarian communities reflects his own values and priorities, rather than a pragmatic set of choices designed to effectively and realistically address the problem of climate change. As a consequence, there is a strong need for other writers and forums that serve as bridges among discourses and perspectives, redefining the policy options and technological approaches to climate change in ways that make partisans on different sides of the issue uncomfortable. An example is the networked approach to blog writing

employed by Andrew Revkin at Dot Earth, an innovative method that contrasts with the traditional models of book author, essayist, columnist, and/or advocate employed by most contemporary knowledge journalists.

STORIES ABOUT WICKED PROBLEMS

Instead of a conventional environmental threat like smog or acid rain, climate change is more accurately defined as a “wicked problem.” Such problems are the product of multiple social, ecological, and technological systems, are difficult to define, have no clear solution, and are seemingly intractable, often plagued by chronic policy failures and intense disagreement. As a result, wicked problems like climate change require almost constant risk reduction, conflict management, and political negotiation that seldom bring an “end” or resolution. Like poverty or ethnic and religious conflict, climate change is not something likely to be solved, eliminated or ended, but rather a condition that society will struggle to do better or worse at in managing.⁹

As a consequence of its unique nature, climate change today “has more potency ... as a mobilizing idea than it does as a physical phenomena,” argues scientist Mike Hulme in *Why We Disagree About Climate Change*.¹⁰ “Ideas can be used, but they can’t be solved. We won’t understand climate change through science and economics alone,” he urges. “We need to understand the ways in which we talk about climate change, the variety of myths we construct...and through which we reveal to ourselves what climate change means to us.”¹¹

The recently published *Oxford Handbook on Climate Change and Society* reflects the difficulties experts face in reaching consensus on the nature of climate change as a social problem and the actions needed. Across 47 chapters and 600 pages, the editors invited top international scholars to help them “lay out the various ways that climate change affects society, and what society might do in response.” Easy answers, however, were not forthcoming. The scholars contributing to the volume represented “substantial differences when it comes to identifying what matters, what is wrong, what is right, how it got to be that way, who is responsible, and not least, what should be done,” note the editors. “Commissioning, reading, and editing these contributions has left us acutely aware of the limitations of human knowledge – and the major constraints on intelligent human action—when it comes to complex socio-ecological systems.”¹²

Apart from the difficulties experts face, for society to meaningfully deal with climate change, even to accept the issue as a major threat, generates great resistance, since doing so requires us to fundamentally question basic principles of societal organization, cultural meaning and identity. As sociologist Kari Marie Norgaard writes in a chapter contributed to *The Oxford Handbook*, people tend to avoid acknowledging disturbing information about climate change in order to "avoid emotions of fear, guilt, and helplessness, follow cultural norms, and maintain positive conceptions of individual and national identity."¹³ As researchers Susanne Moser and Lisa Dilling conclude in a separate chapter, despite significant resources devoted to communicating about climate change, these efforts have been limited by the continued tendency among many advocates to believe that more knowledge and information is needed to move people to action; that fear and visions of catastrophe will motivate audiences; and that a scientific framing of the issue remains central to mobilization.¹⁴

Engaging the public and decision makers on climate change is made all the more difficult by the advertising, public relations, and lobbying strategies of powerful fossil-fuel companies that benefit from maintaining the status quo, and by aligned conservative political leaders and groups. Over the past two decades, this network has manufactured doubt in the news media about the reality of man-made climate change, exaggerated the economic costs of action, ridiculed environmentalists, intimidated scientists, and manipulated the use of scientific expertise in policy-making.¹⁵ Relative to the media, through the early 2000s, mainstream newspaper reporters in the U.S. tended to falsely balance—i.e. portray as equivalent— the evidence for and against man-made climate change.¹⁶ Today, conservative talk radio hosts, cable news commentators, syndicated columnists, and bloggers continue to frequently dismiss the reality of man-made climate change and/or its risks.¹⁷ In particular, studies show that News Corporation-owned newspapers and TV outlets led by the *Wall Street Journal* editorial page and *Fox News* emphasize in their commentary the uncertainty of climate change, framing climate science as colored by political correctness and a matter of orthodoxy.¹⁸

JOURNALISTS AS PUBLIC INTELLECTUALS

For knowledge journalists like McKibben, Friedman, and Revkin, several qualities enable their work to stand out among the many competing voices, narratives, and stories that are told about a wicked problem. In particular, relative to climate change, the prominence of these three writers has been especially remarkable, given the extremely crowded publishing space within which they have worked. Consider that nearly 14,000 peer-reviewed studies on climate change have been published over the past two decades,¹⁹ and since 2000, more than 25,000 stories about climate change have run at the five major U.S. newspapers.²⁰

In successfully navigating this crowded marketplace, knowledge journalists employ a unique orientation in their writing towards an “expert logic” that analyzes problems deductively and a “political logic” that criticizes the status quo and often seeks support for policy solutions. Moreover, they often distance themselves from the “media logic” of their peers, criticizing the tendency of journalists to define problems in terms of conflict, drama, and personalities, to falsely balance claims, or to present policy options in terms of just a few choices. Yet to varying degrees, these same media logics can also sometimes be found in the work of knowledge journalists with important implications for understanding both their popularity and impact.²¹

Via these qualities and others, knowledge journalists function as important public intellectuals in society. An intellectual specializes in deductive reasoning, applying “general ideas to matters of public concern, working from the top down, theorizing about the abuses, corruptions, or injustices that he has discovered,” writes Richard Posner.²² To make the leap from private intellectual to *public* intellectual they also write “for the general public, or at least for a broader than merely academic or specialist audience, on ‘public affairs’ — on political matters in the broadest sense of the word....”²³ In addition, as Posner describes, the “public intellectual is a social critic rather than merely a social observer....they are at once engaged and detached.”²⁴

Lippmann as Teacher and Advisor

Walter Lippmann is a useful historical prototype by which to understand knowledge journalists today, particularly best-selling columnists like Tom Friedman or David Brooks. In Lippmann’s more than 50-year career, he won 3 Pulitzer Prizes, published 20 books, and was the founding editor of *The New Republic* magazine. In all of his work, Lippmann was motivated to

“capture uncertainty and complexity in the world, as well as the ‘indispensability of the long view,’” write sociologists Jacobs and Townsley.²⁵

Lippmann used his books as opportunities to define his philosophy, and his columns as a means to more widely convey, apply, and diffuse his views. In his best-known books, *Public Opinion* (1922)²⁶ and *The Phantom Public* (1925)²⁷, Lippmann argued that most individuals lacked the capacity, time, and motivation to follow and analyze news of the many complex policy questions that troubled society. Nor did they often directly experience most social problems, or have direct access to expert insights. These limitations were made worse by a news media that tended to over-simplify issues and to reinforce stereotypes, partisan viewpoints, and prejudices. As a consequence, note Jacobs and Townsley, Lippmann believed that the public needed journalists like himself who could serve as expert analysts, guiding “citizens to a deeper understanding of what was really important.” These experts could also “speak as proxies for the masses in a way that gave the public a voice in the political conversation.”²⁸

Lippmann viewed his role to be both a policy advisor and a teacher. As an advisor, he wrote not just for the interested public, but also for elected officials and business leaders who regularly read his columns and books. Apart from his writing, he also provided private advice to political leaders. As a teacher, Lippmann recognized during the Great Depression that “academic theory frequently needed to be reinterpreted and readjusted to fit practical political realities,” write Jacobs and Townsley.²⁹ Therefore, by offering lessons and explanations of history, sociology, and economics, he hoped to instill in readers “how difficult it was for political actors to solve the problems created by global economic crisis.”³⁰ In his role as synthesizer and explainer, he also urged the expert community “to make sure that their work was engaged enough with the world to allow this sort of translation.”³¹ In all, columnists like Friedman writing in the Lippmann tradition provide “the reading public with an interpretative framework for understanding the events of the day; writing on behalf of the public interest, while advocating specific policy positions in the space of opinion; and moving back and forth between the world of politics and journalism,” conclude Jacobs and Townsley.

Veteran Science Journalists as Informed Critics

Norms and routines borrowed from science journalism also characterize the work of many knowledge journalists today. Veteran science reporters like the *New York Times*' Revkin or *Scientific American*'s John Horgan (author of the *The End of Science*³² and other books) tend to open up the process of expert knowledge production for their readers, examining how and why research was done, sometimes positing alternative interpretations, or drawing connections to ongoing debates about a field.³³ This type of "upstream science journalism," as communication scholar Alice Bell describes, focuses on the politics, personalities, and social factors that drive decisions in fields such as climate science.³⁴

The emphasis is on taking the public "back stage," behind the curtains and the theater that frame press releases and news stories about science. In this sense, writes American University scholar Declan Fahy, veteran journalists can function as "informed critics" of science, similar to "art critics as they evaluate — rather than just describe — scientific findings."³⁵ Horgan, for example, began his career as a staff writer at *Scientific American* in the 1990s, and today along with authoring books, writes the Cross-Check blog at the magazine's web site and is Director of the Center for Science Writings at Stevens Institute of Technology.³⁶ In reflecting on his shift from reporting to book writing and blogging, Horgan said: "I convinced myself that that was actually a good thing to do because science had become such an authority that there was a need for a scientific critic ... I just enjoy that form of journalism myself. It's a paradox: it's using subjectivity to ultimately get a more clear, objective picture of things."³⁷

In his own role as an informed critic, Revkin frequently warns of the tendency to hype scientific findings relative to climate change and to overlook the inherent uncertainty in science. In a 2012 interview with John Wihbey of the Shorenstein Center, he critiqued research institutions and journals that "pump up the volume" on a specific research finding. This hyping becomes amplified by advocates and bloggers on either side of the climate debate, and by news organizations and reporters "at the end of the chain" who have the incentive to search for "the front page thought," said Revkin.³⁸

In particular, Revkin has criticized advocates, bloggers and journalists who draw direct causal links between specific extreme weather events and climate change. He returned to the theme in fall

2012, when he warned of the “intense rush to use Hurricane Sandy as a teachable moment to focus the public (and politicians) on the risks of an unabated buildup of greenhouse gases and resulting global warming.” At Dot Earth and in talks, Revkin often refers to a figure that displays different distributions or “curves” of scientific knowledge relative to climate change: “When you get more specific, you can see that the level of confidence and range of views on each aspect of greenhouse-driven climate change, from the basic physics onward, has a different ‘shape.’” There is “clear cut” convergence among experts that more CO₂ equals a warming world, as he explains, but on specific impacts such as the pace of sea-level rise or the intensity of hurricanes, there is a much broader distribution of scientific opinion.³⁹

Rachel Carson and the Control of Nature

Somewhat distinct from these two models for knowledge journalism, Rachel Carson is the historical prototype that is perhaps most comparable to Bill McKibben and many other environmental writers. Born in 1907, Carson earned a Master’s degree in zoology and began her career as an editor for the U.S. Fish and Wildlife Service, contributing articles to *The Atlantic* and *Reader’s Digest*. Spending her summers on the coast of Maine, she wrote three popular science books about the ocean and marine life, including 1951’s best-selling *The Sea Around Us*,⁴⁰ which won the National Book Award.⁴¹ In 1958, alarmed by reports of the risks of DDT spraying and the practices of the chemical industry, Carson began work on a book about pesticides with the working title “The Control of Nature.”⁴²

In the summer of 1962, when advance excerpts from her completed book *Silent Spring*⁴³ appeared at *The New Yorker*, her research provoked outrage directed at the pesticide industry, with comparisons made to Harriet Beecher Stowe’s *Uncle Tom’s Cabin* and Upton Sinclair’s *The Jungle*.⁴⁴ The articles motivated other journalists to investigate pesticide use, most notably a young Robert A. Caro who wrote a five-part series for *Newsday*.⁴⁵ The attention to the book prompted President John F. Kennedy to appoint a committee to review the risks of pesticides. CBS News followed with a one-hour profile of Carson.⁴⁶ In 1963, she was called to testify before a Senate subcommittee, where one Senator declared that “every once in a while in the history of mankind, a book has appeared which has substantially altered the course of history.”⁴⁷

As Eliza Griswold noted in a 2012 article at *The New York Times* magazine marking the 50th anniversary of *Silent Spring*: “Much of the data and case studies that Carson drew from weren’t new; the scientific community had known of these findings for some time, but Carson was the first to put them all together for the general public and to draw far-reaching conclusions.” At his Dot Earth blog, Revkin argued that Carson, rather than downplaying or ignoring scientific uncertainty, “progressively amplified what was unclear about the human impacts of DDT and other synthetic compounds on humans and wildlife.”⁴⁸

Revkin discussed a recent study⁴⁹ led by University of Utah doctoral student Kenny Walker who examined Carson’s five years of archived notes and drafts that preceded the publication of *Silent Spring*. “What I found was that not only did Carson underline, circle, and annotate her sources with particular attention to uncertainty, she amplified its use in later drafts,” Walker told Revkin. “Carson’s choice to deliberately increase her use of uncertainty in ‘Silent Spring’ came as a bit of surprise since in the well documented cases of tobacco, acid rain, and global warming, it was the skeptic’s strategy to amplify doubt, not the scientist’s.” As biographer William Souder added in comments to Revkin, Carson was a “relentless reviser,” and “depended in all of her books on a vast network of experts, scientists, scholars, and physicians who reviewed and commented on her work in progress. Carson listened to these reviewers.”

For Revkin, Carson’s method and style “stands in stark contrast to the ‘Be Worried’ approach that some have tried (in vain) on global warming over the years,” a communication strategy evoked by campaigners and journalists alike. As Walker explained: “One of the primary lessons 50 years after the publication of ‘Silent Spring’ is that expressing uncertainty is not just a skeptic’s position. Strategically managing uncertainty offers scientists a way to appear trustworthy, protect against bias, and assert their practical wisdom, moral virtue, and goodwill toward the audience.”

But Carson did much more than explain science; she also argued, even in the face of uncertainty, that the pesticide threat was a sign of our grave new technological prowess and hubris, employing vivid imagery to engage her audiences. Most powerfully, Carson opens her book by describing an idyllic town “in the heart of America where all of life seemed to live in harmony with its surroundings,” but that is destroyed by a “strange blight” and “evil spell.” As Souder notes, “what reader in 1962 could fail to see in this description all the bleak possibilities of

the modern age? Carson's subject was pesticides, but she began [her book] in a way that just as surely evoked the images of nuclear devastation....right down to the residue of poison from the sky."⁵⁰

Similarly, as fellow biographer Linda Lear told the *Times* of Carson's main message: "She wanted us to understand that we were just a blip. The control of nature was an arrogant idea, and Carson was against human ignorance."⁵¹ *Silent Spring's* account of the threat posed by industrialization resonates strongly with McKibben's own narrative about climate change. Carson "was the first person to take the shine off the idea of progress, and to make us reconsider whether all was quite as it seemed," McKibben said in a 2008 interview.⁵²

Apart from her influence on writers like McKibben, *Silent Spring* was important in other ways too. The enduring division between those warning of industrialization and those defending its promise has made it difficult for McKibben and others writing about climate change to equal Carson's achievements. "The politicized and partisan reaction created by *Silent Spring* has hardened over the past 50 years," notes Souder.⁵³ Like the pesticide controversy of the 1960s, as the University of Michigan's Andrew Hoffman explains in a recent article titled "Climate Science As a Culture War," the issue at its core is a "debate over culture, worldviews, and ideology."⁵⁴ Similarly, according to Yale University's Dan Kahan and colleagues, the reason that political groups disagree so strongly on the issue, is that "positions on climate change convey values—communal concern versus individual self-reliance...humility versus ingenuity; harmony with nature versus mastery over it—that divide them along cultural lines."⁵⁵

Becoming Outliers and Super-Achievers

As the case of Rachel Carson makes clear, when addressing controversial topics like climate change, a writer's experience, reputation, and perceived authority matters significantly to their success and influence. In this case, McKibben, Friedman, and Revkin have benefited from their affiliations and visibility at *The New Yorker*, *The New York Times*, and other prestigious outlets. Their reputations are also boosted by prestigious fellowships and awards, and invitations to speak, teach, and affiliate at universities and other intellectual venues. Yet, these news organizations and intellectual institutions are not just platforms for knowledge journalists to enhance their

reputations; they are also the laboratories where they put in the hours, gain the experience, and develop the sources that transform them into outliers and super-achievers.

Tom Friedman, for example, began his career as a correspondent for UPI, before becoming Beirut bureau chief for *The New York Times* in 1982, a position that reflected his intense study since college of the Middle East. He won his first Pulitzer Prize covering Beirut before moving to head the Jerusalem bureau in 1984, where he earned his second such award. He then served as the *Times'* State Department correspondent, then chief White House correspondent, followed by international economics correspondent. In 1995, Friedman was named a regular columnist for the *Times*, the position he holds today. By 2008, the year he published his best-selling *Hot, Flat, and Crowded* (Farrar, Straus and Giroux),⁵⁶ Friedman had written more than 1200 columns for the paper, won a third Pulitzer, and authored four other influential books, including the international best-seller *The World is Flat* (Farrar, Straus and Giroux).^{57,58}

Andrew Revkin, after earning his undergraduate degree in biology, spent time in the South Pacific, studying "man's relationship to the sea," before signing up as first mate on a yacht where he traveled 15,000 miles, visiting fifteen countries in seventeen months.⁵⁹ Upon his return, he earned a graduate degree in journalism from Columbia University, beginning his career at *Science Digest* in 1983, before moving to the *Los Angeles Times*. In 1987, he joined *Discover* magazine, where the next year he penned one of the first national cover stories on global warming.⁶⁰ In 1990, Revkin authored *The Burning Season* (Island Press),⁶¹ a book about Amazon rain forest activist Chico Mendes that served as the basis for an HBO movie directed by John Frankenheimer and starring Raul Julia.⁶² Two years later, now working as a freelancer, he authored *Global Warming: Understanding the Forecast* (Abeville Press),⁶³ the companion book to an exhibit sponsored by the American Museum of Natural History.⁶⁴

In 1995, Revkin joined *The New York Times*, reporting for the Metro section for nearly five years. There, as he recalls, he "wrote dozens of stories about efforts to preserve the quality of New York City's water supply – 19 reservoirs surrounded by 2,000 square miles of rapidly developing exurbs," producing a special report for the paper on the "looming pollution problems that were slowly threatening the water." In 2000, Revkin moved to the Science desk as national environmental correspondent, a position he would fill for the next decade. All together, in fifteen

years as a reporter for the *Times*, he filed more than 1200 stories, with approximately 300 focusing primarily on the science and politics of climate change.⁶⁵

Among major projects, in 2003, he wrote a multi-part series on the Arctic and climate change, which served as the basis for a *Times*' television documentary and for Revkin's 2006 children's book *The North Pole Was Here* (Kingfisher).⁶⁶ The next year, he launched the *Dot Earth* blog at the *Times*' web site. In 2010, he accepted a buyout from the paper, staying on as a contractor to write *Dot Earth*, where he has filed more than 800 posts to date on climate change. Revkin, who is currently a Senior Fellow for Environmental Understanding at Pace University, has won multiple awards for his science reporting from the National Academies and the American Association for the Advancement of Science, a career achievement award from Columbia's School of Journalism, and is a past recipient of a Guggenheim fellowship.⁶⁷

Bill McKibben, in authoring *The End of Nature*, drew on his five years of experience at *The New Yorker*, writing "Talk of the Town" pieces under the tutelage of editor William Shawn. "One of the wonderful things about writing for the *New Yorker* was that I was writing anonymously," McKibben told *Booklist* in 2008. "I'd send a piece to Mr. Shawn and get back a galley with a very good set of questions. It was amazing to discover in a 700-word piece how many places you'd been unclear, imprecise, open to interpretation, and on and on." ⁶⁸

McKibben also contributed short political essays for the "Notes and Comment" section of the magazine, modeling his work after fellow staff writer Jonathon Schell. In his 1982 book *The Fate of the Earth* and other works, Schell warned of the risk of a nuclear holocaust, serving as an inspiration to the nuclear disarmament movement.⁶⁹ "It was from him that I learned how great reporting could produce critical thinking," recalls McKibben. "It was a liberating reprieve from the twin straightjackets of 'objective reporting' and 'punditry'."⁷⁰ In the years since *The End of Nature*, as a freelancer and author, McKibben won a Guggenheim fellowship⁷¹, was elected a member of the American Academy of Arts and Sciences,⁷² served as a visiting fellow at Harvard University's Divinity School, and is currently the Schumann Distinguished Scholar at Middlebury College.⁷³

Developing an Independent Voice

Yet apart from experience, awards, and affiliations, for any public intellectual, perceived independence is an essential quality. As Boston University's Alan Wolfe writes: "It is not whether intellectuals work inside or outside the academy that is important, but whether – in either sphere – they have the courage to find their own voice."⁷⁴ In comparison to their journalist counterparts, university-based intellectuals often believe it is easier for them to maintain an independent voice and to challenge prevailing assumptions since they are protected by tenure.⁷⁵

Yet, journalists as public intellectuals have their own paths to independence. By focusing on synthesis, analysis, and informed criticism, rather than straight day-to-day reporting, knowledge journalists are less restrained by the need to maintain access to sources, and thereby may have more freedom to challenge prevailing assumptions and conventions. Moreover, their popularity and ability to produce work across multiple platforms can give them greater freedom to choose their subjects and to frame issues as they see fit.⁷⁶

Most knowledge journalists also depend on maintaining a reputation for being an honest broker, even if they are writing from a particular point of view. According to Alex Jones, director of the Shorenstein Center at Harvard University, genuine objectivity "begins with the assumption that journalists have bias and that their bias has to be tested and challenged by gathering facts and information that will either support or knock it down."⁷⁷ To the extent that knowledge journalists demonstrate a commitment to this method in their work, then publics are much more likely to perceive them as honest brokers, even if they are writing from a clear point-of-view.⁷⁸ Staking out the role of honest broker also involves "doing stories that will make your friends mad when appropriate and not doing stories that are actually hit jobs," notes Jones.⁷⁹

Personalities and Celebrities

Authority also relates to the tendency for most knowledge journalists to shift between detached analysis and personalization, merging their public and private selves by relating complex ideas or problems to personal anecdotes, "journeys," "realizations," confessionals or internal conflicts. Even their appearance, headshot, image, and dress are likely to be consistent with the subject matter they write about.⁸⁰ These attributes establish authenticity and/or a sense of

commitment to a topic, demonstrating that a knowledge journalist “walks the walk,” “practices what they preach” or has acquired unique knowledge through exceptional experiences.⁸¹

For example, reviewers of Rachel Carson’s best-selling books about the ocean, writes biographer Souder, “believed her to be a heroic correspondent regularly at sea on research vessels hurtling through storms, or swimming among the fish teeming on the coral reefs of the tropics – a false impression that she never bothered to correct.” Later, with her publication of *Silent Spring*, Carson was affectionately known among admirers as “Nature’s nun.”⁸² In today’s media culture, the persona and distinctive personality of knowledge journalists are not only conveyed in their own writing, and by way of profiles and interviews, but also through Twitter, Facebook, and other social media. McKibben and Revkin, for example, are ever-present personalities on Twitter, with more than 60,000 and 40,000 followers respectively.⁸³ Revkin is equally active on Facebook, and has more than 100,000 subscribers to his page.⁸⁴

Most knowledge journalists are also commodities, in that their books, writing, and speeches are bound up with a dense web of promotion, selling, marketing, and millions of dollars in transactions.⁸⁵ Tom Friedman, for example, has developed a global image that drives sales of his books. “Tom would be a genius advertising guy...he’s tremendous at what advertising people call positioning, or branding. He’s created a brand for himself,” a friend and advertising executive told *The New Yorker* in 2008.⁸⁶

McKibben and Michael Pollan have served as enthusiastic endorsers of other books about the environment, agriculture, and food. Their efforts include “blurbs” and social media endorsements, and the authoring of prefaces or reviews. “McKibben is ubiquitous on the sustainability scene—the go-to environmentalist for keynote speeches, forwards, blurbs and anthologies...,” noted a 2008 profile at *The Nation*.⁸⁷ Linkages between McKibben, Pollan, and other writers are also routinely made by publishers, critics, interviewers, and by way of recommended choices at Amazon and other online booksellers.

Yet celebrity also has its downsides. Novelty, brilliance, and abundance are the hallmarks of a celebrity public intellectual, argued sociologist Lewis Coser. This contrasts to the mastery of subject, depth, and accuracy that a specialist academic might offer. Analyzing the rise to fame of Marshall McLuhan during the 1960s, Coser observed that celebrity public intellectuals must

always try to be “with it” because his/her “status depends on [the] ability to contribute brilliantly to the set of ideas currently defined as ‘novel,’ ‘advanced,’ or ‘progressive.’”⁸⁸

On this theme, in a 2011 essay at *Atlantic* magazine, historian Marshall Poe reflected on his failed attempt to write a “big idea” book. He admitted that in his effort, he had overlooked his experience as an academic that most “phenomena have an irreducible complexity that will defeat any big-idea effort at simplification.” As he continued, “most of the easy big questions about the way the world works have been answered. The questions that remain are really hard. Big ideas, then, can only reinvent the wheel or make magical claims.”⁸⁹

KNOWLEDGE JOURNALISTS ONLINE

With a few exceptions, by choosing books and articles as the main forum for their work, and public radio or documentaries for their media appearances, knowledge journalists distinguish themselves from the highly visible pundits who dominate cable news or who have made their mark as partisan bloggers. Yet today, most knowledge journalists also file regular posts at a blog hosted by their news organization, by their publisher, or newer outlets like *The Huffington Post* or *The Daily Beast*.

The demands and nature of online media have led some knowledge journalists to evolve the pace and style of their work, alternating between the type of deep, immersive analysis that shapes a book or magazine article and rapid interpretation and commentary on events, trends, and new studies. Some like Revkin or Andrew Sullivan use their influential blogs as the main platform for their work.

In this new landscape, as Jessica Clark and Patricia Aufderheide of the Center for Social Media describe, highly motivated individuals can collectively consume, contribute, recommend, share, and comment on their preferred topics across media and platforms.⁹⁰ Not only are there more voices and perspectives to select from, but these individuals now have direct access to primary sources of information and data including studies, reports, live and archived feeds of press conferences and events, transcripts of speeches, and copies of legislation. They can additionally access the complete archive of a knowledge journalist’s past stories, blog posts, interviews, and statements along with substantial excerpts of their books via Google and Amazon. As a

consequence, knowledge journalism today has the potential to be highly participatory, social, and collaborative.⁹¹

Yet the diversity of deep content choices also makes it very easy for these highly attentive publics to only follow aligned network of sites or blogs that reflect their worldviews.⁹² This presents both challenges and opportunities for knowledge journalists. McKibben for example contributes frequently to the *Huffington Post*, TomPaine.com, Grist.org and other left-leaning web sites, with these contributions often reposted and referenced across the blogosphere. In this way, he is able to use niche media to engage readers already concerned about climate change, even as it becomes increasingly difficult to capture the wider public's attention to the problem or to shift conservative-leaning news consumers away from media sources that reinforce their doubts.

Spirals of Attention

Along with the fragmented nature of online news, the method by which news organizations call attention to the most important stories and issues has also changed. As Dietram Scheufele and I describe in a recent article, for many news organizations the primary goal online is no longer to attract diverse audiences to a hierarchically organized portfolio of coverage defined by a newspaper or magazine edition. The objective instead is to lure a combination of habitual and incidental news consumers to specific online stories by way of search engines, aggregators, and social networks.⁹³

As a result, stories by popular knowledge journalists like Friedman or McKibben are pushed to prominence as the most popular, read, or emailed articles at the sites of the *New York Times* or magazines like *Rolling Stone*, which further expands their readership and reach. These columns, articles, profiles, and interviews 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 for the articles is further boosted through meta-commentary and reactions from bloggers and journalists at other news sites. For example, as will be described later, McKibben's August 2012 article at *Rolling Stone* magazine on "Global Warming's Terrible New Math" has received 124,000 likes on Facebook, 13,000 Tweets, and more than 5,000 comments.⁹⁴ These dynamics can transform the original analysis or perspective offered by McKibben and other knowledge journalists from a piece of journalism into a noteworthy (pseudo) event. As sociologists

Jacob and Townsley note: “These acts of compiling, circulating, and metacommentary are the bread and butter of media intellectuals and central elements in the process of public opinion formation...”⁹⁵

Writing for a Global Issue Public

The highly engaged information users that fuel these spirals of online attention and commentary are what scholars such as Young Mie Kim of the University of Wisconsin call “issue publics,” individuals who consider specific problems like climate change deeply important, who follow and pass along relevant news, and who tend to be the voice heard loudest in policy debates.⁹⁶ Public opinion researcher Jon Krosnick estimates that the issue public on climate change in the U.S. today is approximately 15 percent of Americans, a segment equal to the active public on issues such as abortion, gun control, and foreign policy.⁹⁷ This proportion translates into approximately 35 million individuals—with more than 80 percent accepting the human-causes of climate change and supportive of policy action to reduce the threat. Other survey research identifies the “alarmed” public relative to climate change at approximately 15 percent of Americans. These individuals are more likely to be female than male, identify as liberal Democrats, are older and middle-aged (55-64 years old), highly educated with substantial incomes.⁹⁸

As these collective poll findings suggest, despite the fact that climate change is still a lower-tier concern for most Americans, there is a sizable, passionate, and intensely interested audience for knowledge journalists writing about the problem. Moreover, given that climate change – like other complex social problems – transcends national boundaries, the online availability, circulation, and commentary about their work has expanded the international readership and influence of knowledge journalists like McKibben and others writing about climate change.

ASSUMPTIONS AND DISCOURSES

As public intellectuals, knowledge journalists likely have their greatest impact on what political scientist Amitai Etzioni calls “communities of assumptions,” the shared worldviews and mental models that shape the judgments of experts, political insiders, and other journalists. These assumptions “serve as the frameworks that influence the ways numerous specific public and

private policies are received and evaluated,” writes Etzioni. 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.”⁹⁹

Therefore, experts, political insiders, and journalists invest considerable resources establishing communities of assumptions around problems, assumptions which may eventually be taken for granted and accepted as conventional wisdom. In addition, by elevating attention to specific disciplines, intellectual traditions, and networks of experts, public intellectuals influence the fields and people 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.¹⁰⁰

Once assumptions and legitimate authorities are established, it becomes “costly in terms of human mental labor to re-examine what has finally come to be taken for granted,” writes Etzioni.¹⁰¹ When events, studies, or arguments arise that challenge a prevailing community of assumptions, they are often ignored, downplayed, re-interpreted, or “debunked.”¹⁰² Yet, not only do journalists as public intellectuals contribute to the creation of 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.¹⁰³

In this regard, the role of the public intellectual – argued philosopher Michael 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.”¹⁰⁴ Conversely, 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,’” warns Etzioni.¹⁰⁵

In both their reinforcing and challenging capacity, knowledge journalists like all public intellectuals employ specific narratives and discourses. These communication tools offer a

common storyline about a problem, placing the problem in a temporal context, describing the problem's origins, who or what is to blame, what should be done, and what action would mean for the future. Narratives and discourses typically reference specific values, historical moments, and cultural metaphors, and emphasize specific sources of authority, whether scientific, religious, legal, economic, or moral.¹⁰⁶

The more complex and uncertain a social problem like climate change, the greater number of plausible discourses and narratives can be found, argues political scientist John Dryzek.¹⁰⁷ Moreover, discourses are "consequential because they can coordinate the actions of large numbers of individuals who never need communicate with each other directly." Some discourses have become "embodied in institutions," constituting the "informal understandings that provide the context for social interaction, on a par with formal institutional rules," writes Dryzek.¹⁰⁸ By analyzing these discourses about climate change, argues Mike Hulme, "we can at least recognize that the sources of our enduring disagreements about climate change lie within us, in our values and in our sense of identity and purpose."¹⁰⁹

American Romanticism and Deep Ecology

Across his career, McKibben's writing has drawn heavily on the discourse tradition of Thoreau, John Muir, and other great American romantics. In this tradition, writes University of Wisconsin historian William Cronon, wild regions like Mount Katahdin in Maine or Yosemite in California were "frequently likened to Eden itself," and viewed as the "one place we can turn for escape from our own too-muchness."¹¹⁰ There is also a strong religious dimension to this tradition, as these settings are where "the supernatural lay just beneath the surface," enabling people to "glimpse the face of God," offering "powerful landscapes where one could not help feeling insignificant and being reminded of one's own mortality," explains Cronon.¹¹¹

In his first book *The End of Nature* and subsequent works, McKibben updates the romantic tradition to convey the personal and cultural importance of man-made climate change. As Hulme writes of McKibben's message, "if an untouched climate, a pure and natural climate, is to be valued, then maintaining its stability becomes of prime, even sacrosanct importance." Through this lens, writes Hulme, "humans believe they are diminishing not just themselves, but also something

beyond themselves,” even God. As a consequence,“(re-) stabilizing climate following the reckless interference of humans is what must be achieved at all costs.”¹¹²

According to Stanford University historian Richard White, McKibben’s main subject in most of his work has not been nature, but rather “the exploration of the meaning of being human.”¹¹³ In this, McKibben’s “lodestone is authenticity, which he defines largely in terms of the natural.” His books focus on specific threats to authenticity including “climate change, which represents ‘the end of nature’; genetic engineering, which threatens to bring the end of the human; and the confusion of human well-being with consumption.”¹¹⁴ Like Cronon, he views McKibben as following closely in the romantic and transcendentalist tradition, but focuses instead on the similarities to Emerson. For both writers, “nature is an instrument for putting themselves—and a larger American self – in relation to the world,” writes White.¹¹⁵ Science in this regard comes second to nature. “McKibben’s deepest interests are less ecological than religious and philosophical,” wrote White. “He quotes scientists, but he is most concerned with what nature signifies, which is something science can never tell him.”¹¹⁶

Accordingly, both Emerson and McKibben frequently locate themselves in idyllic nature or a small community, using personal stories as launching pads for longer expositions about society. In this, McKibben borrows from Emerson “the old transcendental technique of correspondence,” using natural and social facts to illuminate deeper truths,” argues White. As an example, “a farmers’ market is a sign of a ‘quiet revolution’ that will change everything. The revolution concerns an idea – that economic growth and material things will not make us happy.”¹¹⁷

In his writing, McKibben also reflects strongly the tradition of Paul Ehrlich’s best-selling *The Population Bomb* (1968)¹¹⁸ and the Club of Rome’s *The Limits to Growth* (1972).¹¹⁹ These, and related works, are used by McKibben to define climate change through the metaphor of “overshoot and collapse,” in which computer models predict that human population growth, rising consumerism, and resource depletion exceed the carrying capacity of the planet, forcing dramatic changes in order to avert catastrophe.¹²⁰ As an alternative model for society, McKibben frequently cites the deep ecology philosopher Arne Naess,¹²¹ the ecological economist E.F. Schumacher,¹²² and the steady-state economics of Herman Daly. These thinkers and others urged that society needed to deprioritize economic growth, and to instead focus on quality of life. Schumacher argued in *Small*

Is Beautiful (1973) on behalf of “enoughness” and “buddhist economics.” His approach maximized well-being through minimum consumption, which included an emphasis on locally-based “appropriate technologies” such as solar power.¹²³

Yet achieving this societal transformation, argued the philosopher Naess, requires widespread activism that challenges institutions, the status quo, and conventional thinking. The deep ecology movement rejected scientism – and instead prioritized artistic and spiritual creativity – even while drawing on science to warn of catastrophe. The movement also idealized a Jeffersonian agrarian economy comprised of self-reliant communities and tended to be deeply skeptical of nuclear energy and genetic engineering.¹²⁴

Among contemporary public intellectuals, those writing in a similar discourse tradition as McKibben include James Gustave Speth, past Dean of the School of Forestry and the Environment at Yale University, author most recently of *America the Possible: A Manifesto for a New Economy*;¹²⁵ Richard Heinberg, senior fellow at the Post Carbon Institute and author of *The End of Growth*¹²⁶ and other books; Jeremy Rifkin, author of many books, most notably *The European Dream*¹²⁷ and *The Biotech Century*¹²⁸; and *The Nation* magazine’s Naomi Klein, who is currently at work on a book and documentary about capitalism and climate change.¹²⁹

The Green Growth Perspective

Distinct from the perspective of McKibben and these other authors, a second group of public intellectuals arguing for action on climate change hold a very different view of economic development, technology, and society. These authors and leaders tend to agree that limits to growth should be respected, but they also assume limits can be stretched if the right policies and reforms are adopted, enabling environmentally sustainable development to continue indefinitely.¹³⁰ Examples of public intellectuals writing in this discourse tradition include Friedman, former World Bank economist Nicholas Stern (*The Global Deal*)¹³¹, and Columbia University economist Jeffrey Sachs (*Common Wealth: Economics for a Crowded Planet*).¹³²

In *Hot, Flat, and Crowded*, Friedman described the world as a “growth machine” that “no one can turn off.” Yet, in the face of this inevitability, the U.S. can tackle climate change and still grow its economy by adopting what he calls a “Code Green” plan that would create “abundant, cheap, clean, reliable electrons.” That solution, as he told *The New Yorker* is reached “by leveraging 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 international leadership needed to persuade China, India, and other developing countries to choose a similar path, but it would help the United State’s restore its flagging morale. As he wrote in *Hot, Flat and Crowded*: “America will have its identity back, not to mention its self-confidence, because it will again be leading the world on the most important strategic mission and values issue of the day.”¹³³

Historically, the main policy mechanism endorsed among those arguing for smarter, greener economic growth is to increase the cost of carbon-based energy through “pricing mechanisms” like cap and trade legislation or a carbon tax so that solar, wind, and other renewables become more competitive and industries more energy efficient. In this, business leaders and industry are viewed as valuable partners, and action on climate change defined as potentially profitable. Among the core arguments is a focus on a “soft path” transition, the rough equivalent of Friedman’s “code green,” a concept first introduced by Amory Lovins in a 1976 essay at *Foreign Affairs*.

Lovins argued that renewable energy sources led by solar and wind along with energy efficiency can eventually meet world energy demands, displacing society’s “hard path” reliance on fossil fuels and nuclear energy.¹³⁴ Among Lovins’ more than 20 books, the most influential is arguably *Natural Capitalism: Creating the Next Industrial Revolution*, published in 1999 with co-authors Hunter Lovins and Paul Hawken. The book is now in its 10th edition and according to Google Scholar, has been cited more than 2,200 times.¹³⁵ Their aim in the book was to change the dominant “mental model that informs present-day economic thinking,” which starts with dispelling “the long-held belief that core business values and environmental responsibility are incompatible or at odds.”¹³⁶

Instead, they argued “we should vigorously employ markets for their proper purpose as a tool for solving the problems we face, while better understanding markets’ boundaries and limits.”¹³⁷ On climate change, the authors explained how the soft path approach combined with tradable emissions markets for greenhouse gases could protect the Earth’s climate “not at a cost but at a profit.” Overall, they argued that the “menu of climate-protecting opportunities” was “so large that over time, they can overtake and even surpass the pace of economic growth.”¹³⁸

As energy analyst and Pulitzer Prize winning author Daniel Yergin details in his 2011 book *The Quest: Energy, Security, and the Remaking of the World* (Penguin),¹³⁹ the promotion of a soft path through pricing and market-based mechanisms had its origins in the early 1980s, as market-based tradable pollution permits were applied to the problem of lead in gasoline. Later in 1988, C. Boyden Gray, as White House counsel to George H.W. Bush, invited Harvard University economist Robert Stavins and Fred Krupp, head of the Environmental Defense Fund, to design legislation that would apply an emissions trading approach to the problem of acid rain, targeting sulfur dioxide emissions from coal-burning power plants. In this approach, a cap on total emissions would be reduced over time, decreasing the number of allowable permits available each year, thereby making them scarcer and more expensive. This pricing mechanism was intended to spur industry innovation in the direction of reduced emissions, “without ordaining specific technologies and processes.”¹⁴⁰

As Yergin relates, most other major environmental groups were opposed to applying a market-based approach to limiting emissions, preferring instead 1970s command-and-control style regulation. “They thought that emissions trading—a ‘license to pollute’—was perverse, heretical, immoral, and totally unacceptable. The environment should not be ‘for sale,’” writes Yergin. Yet in 1990, the Clean Air Amendments were signed into law by President Bush and by 2008, sulfur emissions had fallen by 60 percent from 1980 levels. “The evidence on acid rain was so powerful that it was invoked again and again in the struggles over climate change policy,” notes Yergin.

To be sure, McKibben and those in the green growth tradition share many of the same goals, endorsing at times similar policies. McKibben, for example, has joined growth advocates in urging passage of strong national climate change legislation that would set a clear price on carbon, a step that he argues is necessary to influence the choices of China, India, and other developing countries. (Yet in this case, he has advocated that any revenues from a national pricing mechanism be returned directly to the public, rather than to companies or the government.)¹⁴¹

But where McKibben differs to the greatest degree from Friedman, Lovins, and others is in their core belief and enthusiasm for economic growth, urging instead that society needs to transition to smaller, localized economies. More recently as an activist and as founder of 350.org, McKibben has argued that the traditional methods of political negotiation and compromise

pursued by organizations like the Environmental Defense Fund have failed and are no longer capable of achieving the rapid societal transformations that are urgently needed.

McKibben's efforts as an activist have been bolstered most recently by the conclusions of Harvard University political scientist Theda Skocpol. In a January 2013 analysis, she argued that "The congressional equation [on climate change] can only change if proponents of carbon limits stop trying to arrange secretive insider bargains and, instead, put forward a transparent proposal such as a carbon tax with revenues returned directly to citizens in annual dividend checks." Yet in doing so, previous insider strategies employed by environmental organizations would not be enough, argued Skocpol: "Several years of popular organizing would be needed to build alliances stretching into most states and congressional districts. Leaders and citizen activists would have to get involved. And not just the usual suspects in the environmental movement. A push for carbon taxes and dividends would need support from unions, women's groups, and community associations."¹⁴²

BILL MCKIBBEN

Journalist to Activist

Born in 1960, McKibben attended high school in Lexington, Massachusetts, where he wrote for the local newspaper and was a state champion debater. McKibben's father Gordon was a respected business journalist, working for *Business Week*, before joining the *Boston Globe* in 1980 as business editor. McKibben says that he "grew up with an overdeveloped moral sense," knowing that it was important to "take sides." When in 1971, McKibben's father was arrested in a protest supporting the right of Vietnam veterans against the war to assemble on the town green, the event left an impression on his ten-year-old son. He was "furious that he wasn't allowed to be arrested with his father," McKibben's mother told the *Boston Globe* in 2012. "It really had an impact on him. It taught him that you stand up for what you believe."¹⁴³

McKibben enrolled at Harvard University in 1978. At college, his "leftism grew more righteous," he wrote in a 1996 essay, though he felt as if something was missing. "Being white, male, straight, and of impeccably middle-class background, I could not realistically claim to be a victim of anything."¹⁴⁴ He worked on many causes, but none felt truly his own. McKibben

balanced his activism with his passion for journalism, serving as editor of the *Harvard Crimson* newspaper. On election night in 1980, McKibben “got grimly drunk,” spending the next day in bed before waking to write a three thousand-word essay that “defined the ground I’d cover in the years to come.”¹⁴⁵

Ronald Reagan’s victory was “the choice for a kind of pretend America where we would agree that we didn’t have to face limits, change any habits,” recalled McKibben in 2008. “It’s in defiance of that trend that I’ve spent the succeeding years writing....” The problem was Reagan’s “sunny optimism,” despite the energy shocks of the 1970s and warnings about the limits to growth.¹⁴⁶ “He really believed it was morning again, and when the economy turned up... the ambivalence about growth vanished, and it was our last real chance to avert disaster,” McKibben wrote in 2010. “America has spent the last 25 years living in the shadow of Reagan, as political leaders from both parties laughed at the idea that there might be limits to growth.”¹⁴⁷

After graduating from Harvard in 1982, McKibben joined *The New Yorker*, spending the next five years living in New York working for the magazine. During these years, McKibben spent time reflecting on the Gospel of Matthew, realizing the “possibility of a kind of intensity of life once one was free of the insulation from the world provided by money and belongings.”¹⁴⁸ For him, it was an “early-onset midlife crisis: the strong sense that there was something *more* and that the path to it lay through less.”¹⁴⁹

He lived frugally sharing an apartment with film critic David Edelstein, putting most of his money in the bank, and limiting his personal belongings.¹⁵⁰ “He’s always been other directed,” Edelstein told *Outside* magazine in 2012. “Almost as if it would be unseemly to dwell on his own problems.” As an example, Edelstein recalled that McKibben was teargassed during a protest against a nuclear power plant. “He was attracted to non-violent resistance. He used to hand out pamphlets outside the theater where Gandhi was showing. He thought it was the best movie he’d ever seen.”¹⁵¹

For a story on the homeless, his editor urged him to live on the street, where he met his wife Sue Halpern, a former Rhodes scholar and writer who was working as a homeless advocate.¹⁵² (In 1998, Halpern won a Guggenheim award for non-fiction.)¹⁵³ McKibben quit *The New Yorker* in 1987 and moved with Halpern to the Adirondack Mountains in upstate New York. Working as a

freelancer, he spent considerable time hiking, skiing, and watching wildlife. At the suggestion of his wife, McKibben studied the book of Job from the Hebrew Bible, an experience that reinvigorated his faith in scripture: "I sensed once more that the Bible had a great deal to say on subjects close to my heart, that it went beyond mere radicalism to roots."¹⁵⁴

The story of Job, writes McKibben, delivers the moral lesson that "man is not at the center of all things." Job resonated with his experience "living on the edge of the wilderness," and with the philosophical writings of the deep ecologists that he admired.¹⁵⁵ From this he concluded that "we may not judge everything from our point of view – that all nature is not ours to subdue."¹⁵⁶ McKibben "had finally found a cause in which to immerse myself," falling "in love with the natural world, a world more real and engaging than any I had known before."¹⁵⁷

The End of Nature

Yet nature, McKibben discovered, was changing. "I'd begun reading the occasional reference to something called the 'greenhouse effect,'" he recalled in 2008. "The more I studied what little science was available, the harder I was hit by the realization that the world I had suddenly woken up to was just as suddenly in mortal danger."¹⁵⁸ For decades, scientists had been studying climate change, more commonly called then global warming or the greenhouse effect. But scholars point to 1988 as the year that climate change as a social problem became a part of national discussion. Record early summer heat generated stories about the greenhouse effect as a cause. These claims gained greater legitimacy on June 23 when NASA scientist James Hansen testified to the Senate "we can ascribe with a high degree of confidence a cause-and-effect relationship between the greenhouse effect and observed warming."¹⁵⁹

For the rest of the summer, extreme heat, drought, wildfires, crop damage, and an energy grid strained by air conditioning, all combined to keep discussion of climate change in the news, with prominent coverage appearing at *The New York Times*, *Time*, *Newsweek*, and *Sports Illustrated*, among outlets. "Even though most climatologists think Hansen's claims are premature, they agree that warming is on the way," wrote Andrew Revkin in a cover story for *Discover* magazine titled "Endless Summer: Living with the Greenhouse Effect."¹⁶⁰ On the presidential campaign trail, George H.W. Bush said he would be an "environmental president," and added: "Those who think

we are powerless to do anything about the 'greenhouse effect' are forgetting about the 'White House Effect.'" ¹⁶¹

In December 1988, McKibben published at *The New York Review of Books* an essay detailing the handful of reports and studies on climate change. ¹⁶² A few months later, *The End of Nature* (Random House) ¹⁶³ was published, which like Rachel Carson's *Silent Spring*, was excerpted at *The New Yorker*. ¹⁶⁴ In his reporting, McKibben turned for expert insight to the handful of scientists and groups then working on the issue. He relied on reports by the National Academies and the Environmental Protection Agency, and interviews with scientists such as Hansen and Stephen Schneider. He also consulted with the World Resources Institute, the Natural Resources Defense Council, the Environmental Defense Fund, and other organizations. "Those of us who were convinced that the climate was warming fast were out on a limb," wrote McKibben in 2006. "All the studies and reports that catalogued the greenhouse effect fit neatly on my desk... the science was still, in many ways, rudimentary." ¹⁶⁵

McKibben devotes nearly 80 pages – or 40 percent -- of *The End of Nature* to describing this emerging science, careful in most cases, to underscore uncertainties where they existed, and drawing parallels to acid rain and ozone depletion. "The science, however, was only one part of the book," wrote McKibben in 2006, "and not the most important." Instead, the science was a warning that humans – through their pollution – had for the first time become "the most powerful force for change on the planet." Crossing this new threshold "made this historical moment entirely different from any other, filled with the implications for our philosophy, our theology, our sense of self." It meant, "the end of Nature," defined as "a certain set of human ideas about the world and our place in it." ¹⁶⁶

Different from other man-made interventions, humans' role in climate change was all pervasive and stretched to every part of the planet. "We have changed the atmosphere, and thus we are changing the weather," he wrote in *The End of Nature*. "By changing the weather, we make every spot on earth man made and artificial. We have deprived nature of its independence and that is fatal to its meaning." ¹⁶⁷ At risk of disappearing, was a "certain way of thinking about God – a certain language by which to describe the indescribable," warned McKibben. ¹⁶⁸ "We can no

longer imagine that we are part of something larger than ourselves – that is what this all boils down to.”¹⁶⁹

Though he did not use the specific term, McKibben also focused readers on the “wickedness” of climate change, explaining that unlike DDT, acid rain, or ozone depletion, “a ‘solution’ may be difficult, verging on impossible.”¹⁷⁰ Climate change is a fundamentally different problem, since “carbon dioxide and other greenhouse gases come from everywhere, so they can be fixed only by fixing everything,” he wrote. “If all the liberals and all the conservatives in all the countries of the world had gotten together a decade ago and done all the most dramatic things they could think of, it wouldn’t have been enough to prevent terrible, terrible changes,” he continued. As a consequence, the problem is “psychologically all encompassing,” since “a human life has become a machine for burning petroleum.”¹⁷¹

Society’s best hope, explained McKibben, was widespread collective action that would force world leaders to “stabilize” emissions and climate impacts “at some sort of only fairly horrific level,” keeping the “temperature increases at 3 or 4 degrees, not 15 or 30.”¹⁷² But to do so, McKibben cast doubt on technological fixes. He argued against the views of the economist Julian Simon who predicted that human imagination and knowledge could be relied upon to find solutions to problems like climate change. For McKibben, these views were unrealistically utopian and premised on faith: “Believing in something ‘fantastic, impossible, and unbelievable’ is an act of hope as much as of reason.”¹⁷³ Even if technological achievements could allow humans to survive without changing “our way of life, our economic growth, in the teeth of the greenhouse effect,”¹⁷⁴ this path would result in an “artificial world, a space station.”¹⁷⁵

McKibben singled out as particularly troubling genetic engineering: “Just as the old methods of dominating the world have become unworkable, a new set of tools is emerging that may allow us to continue that domination by different, expanded, and even more destructive means...”¹⁷⁶ Conventional science had always run up against limits, explained McKibben. “Our understanding of what those limits were helped define nature in our minds,” but with genetic engineering, those “notions quickly become quaint.”¹⁷⁷

The only moral path to survival, concluded McKibben, was to break out of our “rut, a system of beliefs in which we are trapped,” a direction “opposite of the defiant, consumptive course we’ve

traditionally followed.”¹⁷⁸ Nature needed to be a place not for backpacking or retreat from the city, but a place that mattered “for its own sake.”¹⁷⁹ From this starting point, McKibben argued that if “industrial civilization is ending nature, it is not utter silliness to talk about ending – or, at least, transforming – industrial civilization.”¹⁸⁰

To define this alternative path, McKibben drew on the arguments of the deep ecology movement. For energy, people would start to turn to “appropriate technology,” the same technologies like bicycle pumps that were being promoted in the developing world. Westerners would also link their work more directly to their food, returning to farming and agriculture as a livelihood. Developed countries would have to transfer wealth to the developing world, and global population would have to grow gradually smaller, to anywhere from a 100 million to 1-2 billion.¹⁸¹

Referencing his recently acquired fax machine, McKibben predicted that with advances in communication technology, people could afford to travel much less, and to live closer to where they work and to their food sources. Hope for a “living, eternal, meaningful world,” meant that we needed to decide to “at least go no farther down the path we’ve been following,” and to make “the necessary mental adjustments to ensure that we’ll never again put our good ahead of everything else’s,” wrote McKibben.¹⁸²

Divided Views on Science and the Control of Nature

Soon after the publication of *The End of Nature*, syndicated *Boston Globe* columnist Ellen Goodman wrote in detail on “Bill McKibben’s stunning book on global warming,” pointing readers to the excerpt at *The New Yorker*.¹⁸³ In a review at the *Globe*, staff writer Ray Murphy called the book a “righteous jeremiad for our beleaguered planet.”¹⁸⁴ The most controversial endorsement appeared in a review at the *Los Angeles Times* by biologist David Graber. “We have become a plague upon ourselves and upon the Earth. It is cosmically unlikely that the developed world will choose to end its orgy of fossil-energy consumption, and the Third World its suicidal consumption of landscape,” he wrote. “Until such time as Homo sapiens should decide to rejoin nature, some of us can only hope for the right virus to come along.”¹⁸⁵

At the *New York Review of Books*, historian Daniel Kevles wrote that McKibben’s book was “part popular science and part poetry, a sensitive and provocative essay of alarm, a kind of song for the

wild, a lament for its loss, and a plea for its restoration.” But Kevles also found fault with the core argument that ecosystems should take priority over human suffering: “McKibben’s eagerness to preserve the inhuman in nature leads him to a position that—perhaps without his realizing it—is inhumane.” He argued that the “moral and public policy questions concerning the preservation of nature...” are “unnecessarily burdened by injecting into them claims that nature possesses intrinsic rights.” Kevles also cast doubt on McKibben’s “wild predictions concerning genetic engineering.”¹⁸⁶

On his warnings about climate change, *New York Times* science journalist Nicholas Wade wrote that “McKibben is too glib in assuming this to be an already certain outcome,” given the reticence of climatologists to make such a claim.¹⁸⁷ In a separate review at the *Times*, Herbert Mitang wrote that where *The End of Nature* “wanders off track is when the author gets sentimental instead of delivering... hard facts and governmental solutions. He presumes to lecture the reader about his religious notions; it is a distraction that he likes to sing hymns on a Sunday morning...”¹⁸⁸

At the *Boston Globe*, physicist and science columnist Chet Raymo argued that McKibben’s image of nature as “a wild, free, divinely infused, peaceable kingdom...never existed, except in the minds of romantics.” Raymo argued instead that “nature is driven by narrow self-interest” to survive. “If humans have ravaged the wilderness at the expense of other species...we have merely acted out of the mandate of evolution.” This means that “greenhouse warming and ozone depletion are not the end of nature, but part of nature.”¹⁸⁹

At *Newsweek*, Geoffrey Cowley wrote “most of the book is devoted to fatuous pronouncements about the nature of nature and empty prescriptions for reviving it.” He praised McKibben for his “firm grasp of modern planetary science,” but wrote that the argument that humans are separate from nature “reflects a willful ignorance of the same science.” On McKibben’s argument that we renounce economic growth and “choose to remain God’s creatures instead of making ourselves Gods,” Cowley was similarly critical. The book “isn’t about solving real-world problems,” he wrote.¹⁹⁰

Despite this early criticism, the success of McKibben’s *The End of Nature* influenced other authors as they followed with their own popular books including *Global Warming* (1989)¹⁹¹ by scientist Stephen Schneider; *Dead Heat* (1990)¹⁹² by scientist Michael Oppenheimer and journalist

Robert Boyle, *Earth in the Balance* (1992)¹⁹³ by then Senator Al Gore, *The Heat Is On* (1997)¹⁹⁴ and *Boiling Point* (2005)¹⁹⁵ by former *Boston Globe* investigative reporter Ross Gelbspan, and *The Change in the Weather* (1999)¹⁹⁶ by *New York Times* science writer William K. Stevens. According to Gelbspan, McKibben is “the godfather of all popular works of climate literature that have followed his first book,” describing *The End of Nature* as inspiring him to write his own influential works on the subject. McKibben published his book at a time when climate change “was non-existent in the public consciousness,” and before scientists had marshaled their “collective brainpower” to focus on the subject. In this sense, McKibben’s book is “a product of inestimable courage.”¹⁹⁷

The End of Nature has additionally been a major reference point for scholars writing about environmental movements, climate change, and politics. In the introduction to a special issue of the journal *Organization & Environment*, editor David M. Levy described McKibben’s influence as crossing “the boundaries between popular and academic writing.” Evidence of the book’s impact is reflected in the more than 1200 citations to *The End of Nature* compiled by Google Scholar. Yet Levy also described McKibben’s view of nature as being uniquely American, “a particular rather than a universal perspective, one embedded in his religious outlook and the American frontier myth. For Europeans, there has been no frontier for many centuries and hence less romanticization.”¹⁹⁸

In the same symposia, political scientist Robyn Eckersley described *The End of Nature* “as environmental journalism at its best.” McKibben’s genius “is that it works as a form of personal confession...we are not browbeaten but rather *drawn* into his way of seeing the world.” His narrative is compelling since it builds suspense. What McKibben means by the “end of nature” is hinted at early on but not fully revealed until much later, noted Eckersley. “We need more McKibbens to translate and interpret complex scientific ideas and environmental challenges to the wider public.” But Eckersley also argued that *The End of Nature* “largely avoids tackling some of the most difficult institutional and socioeconomic questions concerning the politics of transition.” These questions turn on class, gender, race and the unequal distribution of political and economic resources. “The problem...is that once these questions are brought into the frame,” wrote Eckersley, “we must also contend with multiple ideas of nature, not just McKibben’s...”¹⁹⁹

Writing the next year at the journal *Nature and Culture*, sociologist Steven Yearley echoed the critiques of Levy and Eckersley, arguing that McKibben took for granted that people from different cultural backgrounds would share his sense of loss and his moral aversion to economic growth and technological innovation. “It is unclear whether given the choice between some desirable end (such as greater prosperity) and the preservation of the idea of nature, they would make the same choice as McKibben,” wrote Yearley.²⁰⁰

Establishing Core Themes and Audiences

The End of Nature established the core audience, themes and focus for almost of all McKibben’s subsequent books and writing. Over the past two decades, he has paired his books with 10 to 20 magazine articles and major newspaper op-eds annually – and more recently dozens of blog posts -- all aimed at engaging readers across relevant market segments. For a public affairs audience, he has served as a regular contributor to *The New York Review of Books*; to magazines like *The Nation* and *Rolling Stone*; and as an op-ed contributor *The New York Times* and *Washington Post*. Since 2005, he has taken advantage of online outlets like the *Huffington Post* and *TomDispatch.com*. In engaging readers interested in the outdoors and environmental issues, he has been a contributor to *Outside*, *National Geographic*, *Audobon*, and *Sierra* magazine. And in writing about religious themes, he has been a regular voice at magazines like *Tikkun*, *Sojourners* and *Christian Century*.²⁰¹

Not only did these years cultivating audiences across books and magazine genres increase his profile as a public intellectual, later when he would found 350.org, these same audiences would become part of McKibben’s grassroots activist base. His career as a writer and public intellectual also prepared him for the grueling demands of campaigning and the unrelenting criticism of politics. On book tour, McKibben would sometimes set off on a schedule of seventeen cities in fourteen days, conducting interviews on the radio, with local newspapers and on television. At night, he would give speeches and readings at bookstores and other venues. All the while, across cities and towns, McKibben built networks, relationships, friendships and visibility, while facing the sting of negative reviews and the risk of failure in generating sales or drawing a crowd.²⁰²

Among his more influential books, in 1992, McKibben published *The Age of Missing Information* (Random House)²⁰³ in which he reflected on his experience watching more than 1700 hours of cable television programing, comparing what he observed to what could be learned from nature. He

argued that television is a main driver of mindless consumption and the loss of community, a cultivator of the values and misperceptions that prevent us from addressing climate change. In 1995's *Hope: Human and Wild* (Little & Brown),²⁰⁴ McKibben argued on behalf of a new localized politics and economics, relating examples from New England, Brazil, and India in order to "imagine a future vastly different from the present, one where people consume much less and restrain themselves more."²⁰⁵

Three years later in *Hundred Dollar Holiday: The Case for a More Joyful Christmas* (Simon & Schuster)²⁰⁶, he explained to readers the commercialized history of Christmas and told of his experience leading a campaign among neighbors and church members to spend less, but get more out of the holiday, "more music, more companionship, more contemplation, more time outdoors, more love." In 1998, he continued to focus on the personal with *Maybe One: A Case for Smaller Families* (Plume) in which he elaborated on the problem of over-population, explaining the stereotypes that prevented American parents from choosing to have just one child, and detailing his decision to have a vasectomy after the birth of his daughter.²⁰⁷

The next year – at the age of 39 – McKibben published *Long Distance: A Year of Living Strenuously* (Simon & Schuster) in which he chronicled his experience training several hours a day to compete in cross-country skiing, only to be awakened from his pursuit of peak performance by his father's battle against terminal brain cancer.²⁰⁸ In 2003's *Enough: Staying Human in an Engineered Age* (Macmillan), McKibben warned of the moral perils of gene therapy, cloning, nanotechnology, and robotics. He argued that if left unregulated, advances in these fields would lead to a "wholesale loss of human meaning," making us more robot than human. Drawing parallels to climate change, opposing these technologies, was a decision to recognize and accept our own limits.²⁰⁹

According to the Stanford historian Richard White, McKibben's books follow a clear formula, with each chapter the equivalent to an expanded *New Yorker* article. The books introduce a problem in the first chapter, usually by way of a personal anecdote involving McKibben. The next two chapters expound on the problem. He then proposes a solution in the fourth chapter, and argues for it in a fifth chapter. Yet according to White, as engaging and successful as this formula has been for McKibben, the narrow lens on a just a few years of events and the "everything has

changed” urgency of many books, deflects attention from important lessons of the past, insights that might challenge McKibben’s preferred discourse about climate change and other problems.

A New Economy for a Different Planet

In 2007, McKibben published *Deep Economy: The Wealth of Communities and the Durable Future*²¹⁰ and followed in 2010 with *Eaarth: Making a Life on a Tough New Planet*.²¹¹ The first book featured his most extensive, optimistic and hopeful exposition on a different; more rewarding kind of life, detailing the virtues of community, local agriculture, and local economies. The second represents the most deeply pessimistic outlook of his career. According to McKibben, *The End of Nature* was mostly a philosophical argument, written at a time when it was too early to witness the major threats of climate change, but not too early to recognize the meaning of these likely effects.

But now, as he wrote in *Eaarth*, “global warming is no longer a philosophical threat, *no longer a future threat, no longer a threat at all*. It’s our reality.”²¹² As he argued, the hurricanes and Arctic melting of 2005 were evidence that the anticipated impacts of climate change were “ahead of schedule.” As a consequence, today we live on a different planet that needs a new name “Eaarth.” Just as was the case in 1988, McKibben credited James Hansen with catalyzing the shift in his thinking towards a new sense of urgency about the problem. In a 2007 presentation, Hansen explained that he now thought that the “safe” level for carbon dioxide levels was 350 ppm, a level of emissions that had already been crossed. “The day that Jim Hansen announced that number,” wrote McKibben, “was the day I knew we’d never again inhabit the planet I’d been born on, or anything close to it.”²¹³

As a result of climate change, economic growth “is bumping up against physical limits so profound ... that continuing to expand the economy may be impossible,” he wrote in *Deep Economy*.²¹⁴ Up to a certain point, “for a very poor person living in a very poor society,” economic growth and material gain matter. But for most Americans and people living in developed countries, wrote McKibben, we have long since passed that threshold. “All in all, we have more stuff and less happiness,” he wrote. What most of us truly desire, however, is something that wealth cannot buy: “We need time with family, we need silence for reflection, we need connection with nature....”²¹⁵

Recognizing that hyper-individualism is damaging our lives, the conventional liberal answer is “continued economic growth, but with the benefits distributed more fairly and more of them put back into the public realm,” explained McKibben. Though this would be an improvement, such approaches “can’t fundamentally alter the dynamic of dissatisfaction....”²¹⁶ Instead of working longer hours and hoping for more economic growth, “we need to once again depend on those around us for something real,” by reinventing our communities, argued McKibben. “If we do, then the bonds that make for human satisfaction, as opposed to endless growth, will begin to reemerge.”²¹⁷

In *Eaarth*, McKibben argued forcefully against the well-intentioned assertions by Tom Friedman, Jeffrey Sachs and others that “smart” growth and sustainable development are still possible. If major investments in clean energy and societal transformation had been launched decades ago there might be the chance of success, wrote McKibben. But today, he didn’t believe that the “growth paradigm can rise to the occasion; I think the system has met its match.”²¹⁸ As he argued in *Deep Economy*, “our systems and economies have gotten too large,” and “we need to start building them back down. What we need is a new trajectory, toward the smaller and more local.”²¹⁹ In *Eaarth*, he puts this path in more blunt terms, arguing that we “choose instead to try to manage our descent. That we might aim for a relatively graceful decline.”²²⁰

In the U.S., argued McKibben, this means focusing on local economies rather than global competition. Localism “offers a physically plausible economy for the future, and a psychologically plausible one as well: an economy that might better provide goods like time and security that we are short of,” he wrote in *Deep Economy*.²²¹ “We’ve got a lot of work to do if we’re going to survive. But most of it needs to be done close to home. Small not big; dispersed, not centralized,” he argued in *Eaarth*.²²² Localism doesn’t mean cutting ties with the national or global economy, according to McKibben, but it does mean citizens gaining as much practical control over their local economies as possible.

The focus on local economies has already started, McKibben argued, by way of the rising popularity of locally sourced food and farmers markets. Food choices, he explained, are intimately tied to energy use and community relations, and the government could tip the balance in favor of local agriculture by eliminating subsidies. In *Deep Economy*, he devotes a chapter to his experience

spending a winter in Vermont eating only locally sourced food. “I’ve had to think about every meal, instead of wandering through the world on autopilot, ingesting random calories,” he described. As he visited local farms and co-ops in Vermont, the interactions resulted in “a web of connections I’ve never known about...I’ve met dozens of people I wouldn’t otherwise have known.”²²³

On energy, argued McKibben, we may need new technologies in the future, “the fight to slow carbon emissions is so desperate that it’s wrong to rule anything out...,” but the future’s “more exciting possibilities lie elsewhere, in smaller community-scale power systems.”²²⁴ We need to think at the intermediate scale, “something in between the individual cell powering the individual home, and the one great power station feeding the whole state.” He advocated starting with major improvements in energy efficiency, and then pursuing other options such as requiring every new home to have solar roof tiles and window shutters, scattering windmills across towns, and relying on local grids supplemented by small-scale power plants.²²⁵

The localism path in the United States and other developed countries, according to McKibben, would also demonstrate the moral leadership needed to influence the energy choices of the developing world. “If the rich countries of the world can’t change course, then the poor countries won’t,” he wrote in *Deep Economy*. “If we can’t move away from the ideal of the hyper individual, then much of the world will keep running in the same direction.”²²⁶ Ultimately, as McKibben wrote in *Eaarth*, the grand bargain will be that the developed countries share their wealth and technology with developing nations, and in return these countries would choose a different, cleaner energy path.²²⁷

At home, though, in choosing this path, much of our political malaise, gridlock, and incivility can be solved by reducing the scale of governance, argued McKibben. He noted in *Eaarth* that “conservatives are correct about the inherent inefficiency of big government.”²²⁸ He argued that as a decision-making forum, town meetings like those held in Vermont foster “thoughtful social innovation,” and described how similar approaches could be implemented in large cities.²²⁹ In a world where people traveled much less and focused on the local, the Internet would also play a central role, offering the hope that “local communities and economies might settle into place

without becoming completely hidebound or parochial – that good ideas ... would keep circulating even in a world where regions produced more of their own commodities.”²³⁰

Evaluating the Optimistic and the Catastrophic

Upon its release in 2007, reviewers praised the optimistic outlook and paradigm shifting aims of *Deep Economy*. “One of the book’s great strengths is that it presses beyond the statistics to imagine a different way of doing things...,” wrote *The New Yorker*’s Elizabeth Kolbert at *The Boston Globe*. “All of which means that by consuming less, we might actually find that we had gained something.... *Deep Economy* shows us not only the way we need to live, but also the way we should want to.”²³¹

At *The New York Review of Books*, scientist Timothy Flannery wrote: “In one aspect of life after another McKibben shows us how globalization has destroyed communities and detracted from the quality of life of Americans... *Deep Economy* is about far more than food. At its heart is a marvelous exposition of [the] belief that everything has an appropriate scale.”²³² In a review at the *Los Angeles Times* headlined “The Communitarian Manifesto,” Donna Seaman described McKibben as a “writer on a mission, but he is not overbearing. He does not issue doomsday pronouncements; there isn’t a hint of holier-than-thou smugness....McKibben is concerned, even alarmed, but he strives to be hopeful.”²³³ In a review at *The New York Times*, Lance Morrow warned: “It would be unwise to dismiss McKibben’s ideas as pipe dreams or Luddism. He makes his case on anecdotal, environmental, moral, and as it were, aesthetic grounds.”²³⁴

Though offering praise for the book, *The Guardian* called attention to an “American liberal smugness” about *Deep Economy*: “At the heart of the book is the silly idea that we can all ... spend six months living sustainably, off local sources of fruit, vegetables, grain and power. The aspiration isn't silly, but few live, like him, in middle-class comfort in some idyllic small town in upper Vermont....”²³⁵

Noting McKibben’s tendency to view society through the lens of New England, Stanford historian Richard White wrote that for McKibben: “Community boils down to a set of touching examples. It is groups of people acting well together, usually in ways that involve the communal production and distribution of food.” But as White argued, rather than leagues of the like minded, communities are often “factious and diverse.” Communities “should not be like neighbors and

friends, which is to say people we choose. They should be more like family: people we are stuck with," he wrote. "The retreat from the national to the local is in this sense a very dangerous move for environmentalists and progressives to make."²³⁶

Though many wrote favorably of *Deep Economy*, reviewers were more critical of *Eaarth*. "The opening three chapters of the book create an apocalyptic vision that almost begs the question why we should bother trying to reduce emissions now, and it is only in the final chapter that McKibben offers any glimpses of optimism," wrote economist Nicholas Stern at *The New York Review of Books*. Despite the important sense of urgency conveyed, Stern found McKibben to be "too pessimistic about the ability of the world to respond. Such pessimism can be self-fulfilling."²³⁷

Similarly, as *Newsweek's* Sharon Begley wrote: "McKibben apparently didn't get the memo that when people are scared, they're too paralyzed to take action ... Things may well get as bad as McKibben predicts, but since people can barely plan one month ahead, is it realistic to think we will reorganize society along the 'small is beautiful,' a 'farm on every block' model he urges?"²³⁸

At his *Scientific American* blog, John Horgan questioned McKibben's argument that climate change would lead to war and lamented his skepticism of Federal government: "I worry about the extreme proposals and warnings of McKibben and other greens." Rather than inspiring people to act, "green alarmists might end up provoking voters to stockpile guns and ammo, and support even higher defense budgets," wrote Horgan. "A lot of people look to McKibben for guidance, but his book *Eaarth* is a cry of despair, not a viable vision of the future. I hope he rediscovers his faith in humanity, because we need him."²³⁹

Stern also found fault with McKibben's views on economic growth. "For billions of people, economic development is the only way out of poverty and McKibben will alienate many with his dismissal of the concept of sustainable growth," wrote Stern. At issue is McKibben's adherence to the *Limits to Growth* thesis, which according to Stern, under-estimates the potential to find substitutes for fossil fuels. "The assumptions that allowed its authors to claim that growth can, will, and should end are precisely what we must now counter in order to create a low-carbon economy," wrote Stern. To do so, we need to base our understanding on other growth theories "that show that we can invest in discovering and deploying new technologies, that such

deployment itself will have strong effects on saving energy, and that technological output and the natural environment are closely bound together.”²⁴⁰

Building a New Climate Movement

In February 2005, as a scholar in residence at Middlebury College, McKibben began meeting informally with students to discuss strategies for mobilizing societal action on climate change. The students were enrolled in a seminar led by economics professor Jon Isham titled “Building a New Climate Movement” which also featured a conference with a national roster of prominent speakers.²⁴¹ Their original plan in 2006 was to lead a march to the Burlington, Vermont Federal building, with the goal “to get arrested, make some headlines, and we hoped, get people riled up enough to get out and do some more,” McKibben recalled. But after the police informed him they were unlikely to be arrested, they organized instead a 1,000 person, five-day hike.²⁴²

Their success prompted them in 2007 to organize national “Step It Up” days of action, which they coordinated by way of The Step It Up web site. The site was modeled after MeetUp.com, featuring materials to help individuals organize actions ranging from marches to performance art to bicycle rallies in their communities. The site compiled these events in a searchable database by city and state. In November, their coordinated efforts led to 481 community-based actions, at least one in every state, according to one study. Surveying participants at events in 5 cities, the researchers found that approximately 37 percent of participants identified the Internet as the most important way that they had heard about the event, compared to the 28 percent who named more traditional face-to-face recruitment by friends, family, co-workers, or student peers.²⁴³

To share insight about their success, McKibben and his five co-organizers published in 2007 *Fight Global Warming Now: The Handbook for Taking Action in Your Community* (Henry Holt and Company.)²⁴⁴ Changing personal behavior will not have much of an impact on climate change, argued McKibben and his co-authors: “...the change we need is so sweeping and so rapid that only by mobilizing ourselves through our government will we be able to make enough progress in the time we have left.”²⁴⁵ They recommended political activities that reflected “local affection and local history,” since “a sense of place is invaluable for effective organizing and for creating a brighter future.”²⁴⁶ They also described in detail how these activities could be coordinated at minimal expense by using the Web, email, and social media.

McKibben's early optimism about the potential of Internet-enabled activism is reflected in a 2006 review he wrote of *Crashing the Gate: Netroots, Grassroots, and the Rise of People-Powered Politics* by bloggers Jerome Armstrong and Markos Moulitsas Zúniga.²⁴⁷ "In its account of the political possibilities of the Internet, *Crashing the Gate* seems to me the most ambitious, interesting, and hopeful venture in progressive politics in decades," wrote McKibben at *The New York Review of Books*. He found particularly promising the model pioneered by the 2004 Howard Dean for president campaign which used MeetUp.com and other web tools to organize activities in communities across the country and to raise large amounts of money in small sums from many individual contributors.²⁴⁸

Of the Daily Kos and similar blog sites, McKibben marveled at its "expanding hive of communication, a collective intelligence" that had launched an emerging and increasingly sophisticated "kind of proto-journalism." The Internet, as a "limitless virtual archive," also presented the opportunity to hold the powerful accountable, enabling these proto-journalists to "track down almost anything any journalist or politician has said and done in the last decade."²⁴⁹ Yet in *Fight Global Warming Now*, McKibben and his co-organizers warned that effective action would only come through "real-life, on-the-ground affairs, with neighbors coming together in the flesh to demand change. We feel strongly that the Internet is best used to get people together face-to-face. Too many organizations have put a blind faith in the Internet, thinking that simply having a basic online presence will immediately transform their group to a cutting-edge miracle of advocacy and activism."²⁵⁰

McKibben's decision to take up political action has transformed his public profile from that of journalist and best-selling author into his new role as arguably the most prominent climate change activist in the United States. "He has gone from sitting in his room writing to standing in front of a crowd, trying to use his abilities and knowledge to bring people along with him in an almost physical way," his wife, Sue Halpern told the *Boston Globe* in 2012. "The sense of urgency he feels now about climate in particular makes him feel he needs to go out and shout from the mountaintop and street corner, and see that it has impact."²⁵¹

As McKibben told *The Guardian* in 2007: "I think my assumption when I was 27 was that explaining rationally all the trouble we're in would be sufficient, and that politicians and whoever

would act. I'm older now and I think I've come to understand a little more clearly that we're going to need to build some power if we're going to mount a serious challenge."²⁵² Similarly, as he said to *The New York Times* the same year: "I wrote the first book about this stuff almost 20 years ago, I've been at it ever since, and I've finally gotten sick of seeing nothing actually happen."²⁵³

He also faults himself and other environmentalists for believing that knowledge alone would lead to societal change. "At a certain level you can blame all the senators and representatives for it, but I think it's also fair to blame those of us who care about this issue – because we haven't built the kind of political power that we should," McKibben told *The Atlantic*. "We assumed that because scientists had said the world was coming to an end that that would be enough to motivate our political system to act. As it turns out, that's not how politics works. You need to meet power with power."²⁵⁴

350.org: Mobilizing the Choir on Climate Change

As American University doctoral student Luis Hestres details in a forthcoming study, the success of Step It Up led to the creation in 2008 by McKibben and his co-organizers of 350.org. The name of the organization was derived from James Hansen's declaration in 2007 that 350 parts per million was the "safe" level for the stabilization of atmospheric carbon dioxide levels, a goal required to avoid the worst effects of climate change.²⁵⁵ The main goal was to use Internet-enabled organizing strategies to increase the intensity of political activity among the so-called "issue public" on climate change. In targeting this segment, McKibben was appealing directly to the base of readers and fans he had built up over the past 20 years. Yet despite an avid interest in climate change and a shared worldview, activism among this segment of the public historically has been relatively low. "Only if the choir sings five times louder is there any chance we'll get" federal legislation to help stop global warming, McKibben said in 2007, describing his strategy as an activist. "It's important now to get everyone in the choir to sing at the top of their lungs."²⁵⁶

Similarly, as May Boeve, Executive Director of 350.org told Hestres in an interview: "Our most consistent audience is the community of people who care about climate change and see it as a problem and are committed to do something about it. The metaphor we like to use is, yes, there's an issue of preaching to the choir, but imagine if you could have the choir all singing from the same song sheet."²⁵⁷

In the first two years of the organization, the main focus of McKibben and his 350.org colleagues was to apply their Step It Up model to a global scale, motivating individuals across countries to organize activities in support of an international binding agreement on emissions at the December 2009 climate summit in Copenhagen, Denmark. “What we need is a rallying cry, an idea around which to coalesce. That’s why we’re running 350.org, and why we’ll do a huge global day of action on Oct. 24,” McKibben wrote in an email to supporters. “We need a measuring stick against which to critique Copenhagen, and 350 ppm CO₂ is the best one we’re going to get. It implies dramatic and urgent and apple-cart-upsetting action.... Our hope is that a huge worldwide outpouring on Oct. 24 will set a bar to make any action in Copenhagen powerful.”²⁵⁸

Despite the failure of the Copenhagen meeting to achieve a binding agreement, McKibben later judged their organizing efforts a success, taking credit for helping catalyze 5,500 actions in 181 countries, with the protests captured by online photos and videos of the activists holding 350.org signs. As he told *The Nation*: “Suddenly, ordinary people, organizers, and elected officials had a concrete goal to reach for and a point of entry into the complex science of climate change... a mere two years after Hansen first proposed the number as a measure of our global health, an astonishing adaptation to new ideas.”²⁵⁹

As of 2012, 350.org employed 26 staff in the U.S. and 11 abroad. According to IRS records, in 2011, 350.org generated \$3 million in revenue, spent \$1.8 million on program activities with \$1.2 million – or 2/3 of its program expenditures -- dedicated to grassroots field organizing. Board members include Naomi Klein, James Gustave Speth, and Van Jones. Among its chief financial sponsors has been the Rockefeller Brothers Fund, which since 2008 has given approximately \$900,000 to support the work of 350.org. The foundation has also given \$2.1 million to the advocacy group 1Sky, which 350.org merged with in April 2011.²⁶⁰

Campaign Against the Keystone XL Oil Pipeline

Following Copenhagen, McKibben’s work with 350.org has focused primarily on countering the fossil fuel industry and holding accountable elected officials. In November 2011, 350.org lead other groups in pressuring the Obama administration into delaying approval of the Keystone XL pipeline; a project intended to link the Canadian Tar Sands oil fields with Gulf of Mexico refineries and distribution centers.²⁶¹ Most experts had predicted that the Obama administration would

approve the Keystone XL pipeline. Yet, McKibben played a central role in catapulting the issue into national debate by successfully dramatizing the stakes involved.

To do so, once again McKibben turned to James Hansen, emphasizing a statement by the NASA scientist that approval of the pipeline meant, “Essentially, it’s game over for the planet.” McKibben with other activists also wrote an open letter to the major environmental groups encouraging them to oppose the pipeline and to join in protest efforts: “It’s time to stop letting corporate power make the most important decisions our planet faces. We don’t have the money to compete...but we do have our bodies.”²⁶²

In August 2011, 350.org and their allies mobilized nearly 900 activists to protest in front of the White House, many of whom were arrested. They followed in October by turning out an estimated 10,000 activists who encircled the White House in a last push to convince President Obama to reject the pipeline. Later in February 2012, after Obama had delayed the decision until 2013, the Senate took up legislation revisiting the pipeline. In response, McKibben and 350.org joined with other environmental groups to generate more than 80,000 messages to senators, an effort that aided the defeat of the bill.²⁶³

At his Dot Earth blog, Andrew Revkin was critical of McKibben’s effort, arguing that the relevance of the Tar Sands to climate change is “far less significant than some claims, particularly given the reality that oil consumption rates are what matters — not the amount of gigatons of carbon sitting in deposits of this sort in the ground.” He wrote that while the issue is “a potent symbol and convenient rallying point for campaigners, it’s a distraction from core issues and opportunities on energy and largely insignificant if your concern is averting a disruptive buildup of carbon dioxide in the atmosphere.” Revkin noted that he respected McKibben’s and James Hansen’s choice to protest the pipeline, but “I haven’t joined them because — while I would love to see America and the world cut oil appetites — I see more promising routes to meaningful progress on that front.” Such a plan, he wrote, would involve Obama incorporating the “need for more domestic energy exploration and development (done responsibly) with a long-term plan that also stresses conservation, efficiency and innovation.”²⁶⁴

At the time that I completed this paper, the Obama administration was again considering approval of the XL pipeline. Joining McKibben and 350.org in pressuring the White House was the

Sierra Club, which announced its first board of directors sanctioned civil disobedience campaign in 150 years, a campaign that would risk the possible arrest of staff and members, according to Sierra Club leaders.²⁶⁵ Supporting their efforts, Hansen and sixteen other scientists sent a signed letter urging the White House to reject the pipeline.²⁶⁶

On February 13, in a protest against the pipeline staged at the White House, Hansen along with Sierra Club president Michael Brune, civil rights leader Julian Bond, celebrities Daryl Hannah and Robert F. Kennedy Jr., and more than 40 others were arrested. Four days later, a rally on the National Mall in Washington, D.C. organized by 350.org and the Sierra Club bussed in activists from a reported 31 states and turned out an estimated 30,000 protestors. Speaking in advance of the rally, former Obama administration official Van Jones declared that “President Obama's entire legacy and all the good that he's done as president is now in peril. It can all be wiped out by the floods and the storms and the wildfires that are to come if he makes the wrong decision on this question. It is that serious.”²⁶⁷

Other influential voices, however, supported the approval of the pipeline by the White House. Noting that a new route for the pipeline would limit environmental health risks, the editorial board of the *Washington Post* recommended that “Mr. Obama should ignore the activists who have bizarrely chosen to make Keystone XL a line-in-the-sand issue, when there are dozens more of far greater environmental import.”²⁶⁸ Similarly, at the journal *Nature*, the editors concluded that “the administration should face down critics of the project, ensure that environmental standards are met and then approve it.” According to the editors, “the pipeline is not going to determine whether the Canadian tar sands are developed or not. Only a broader — and much more important — shift in energy policy will do that. Nor is oil produced from the Canadian tar sands as dirty from a climate perspective as many believe (some of the oil produced in California, without attention from environmentalists, is worse).”

By approving the pipeline, Obama would start to rebuild his relationship with industry and conservatives, argued the editors; thereby setting the ground for more meaningful policy actions that would reduce emissions. The start to this more comprehensive action would be the implementation of pending Environmental Protection Agency regulations for power plants, that would “send a message to the coal industry: clean up or fade away.” The second step, according

to the editors, would be to significantly boost Federal funding for “a good old-fashioned strategic research and development (R&D) programme for clean energy.”²⁶⁹

Divestment Campaign on College Campuses

Along with opposition to the XL pipeline, McKibben in 2012 also turned his focus to pressuring universities and other institutions to divest their financial holdings from fossil fuel companies, a campaign that draws direct parallels to the anti-apartheid movement. In this case again, McKibben used his influence as a prominent journalist and public intellectual to catalyze a new movement aimed directly at college students, contributing a 6,000-word article to the August 2012 issue of *Rolling Stone* magazine that warned of “Global Warming’s Terrible New Math.”²⁷⁰

McKibben opened the article by citing the extreme weather events, wildfires, and record heat of the summer, contrasting these events to the lack of political action: “Since I wrote one of the first books for a general audience about global warming way back in 1989, and since I’ve spent the intervening decades working ineffectively to slow that warming, I can say with some confidence that we’re losing the fight, badly and quickly, losing it because, most of all, we remain in denial about the peril that human civilization is in.” He condemned international leaders who said their goal was to halt warming at two degrees but who since 1995 have failed to live up to their promise of achieving a binding international agreement on emissions.

McKibben cited a 2009 study in the journal *Nature* led by German scientist Malte Meinshausen which estimated that to have an 80 percent chance of staying below the target of a 2 degree Celsius temperature rise, the world had approximately a 565-gigaton carbon budget to use over the next 40 years. Exceeding any more of this amount in new emissions by mid-century risked a temperature rise beyond 2 degrees.²⁷¹ But according to McKibben, relative to the planet’s safe carbon budget, there was even scarier new math to report. In this case, he turned to a 2011 analysis by the Carbon Tracker Initiative, which estimated that the proven oil, gas, and coal reserves of fossil-fuel companies and countries like Kuwait or Saudi Arabia was 2,795 gigatons, or “five times as much oil and coal and gas on the books as climate scientists think is safe to burn. We’d have to keep 80 percent of those reserves locked away underground to avoid that fate,” warned McKibben.

As he explained, fossil-fuel companies and countries were committed to extracting as much of their oil, gas, and coal holdings as possible. Moreover, efforts at political action in Congress – even

with President Obama elected – had for the most part failed to achieve meaningful change. Yet as McKibben wrote, “moral outrage just might – and that’s the real meaning of this new math. It could, plausibly, give rise to a real movement.” A powerful enough movement to avert disaster needed an enemy: “Given this hard math, we need to view the fossil-fuel industry in a new light,” he argued. “It has become a rogue industry, reckless like no other force on Earth. It is Public Enemy Number One to the survival of our planetary civilization.” Drawing comparisons to the anti-apartheid effort, McKibben urged a mass movement pressuring universities, colleges, churches, and local governments to divest their holdings in fossil fuel companies.

“I wouldn’t agree necessarily with every wording (the campaign uses),” Meinshausen told Katherine Bagley of InsideClimateNews.org in February 2013. “But the basic message -- that we have a finite carbon budget, that we have much more in the ground than we can afford to burn if we want to avoid dangerous climate change -- I think all this is uncontroversial.”²⁷²

To date, the article has received 124,000 likes on Facebook, 13,000 Tweets, and more than 5,000 comments, making it one of the most widely circulated online articles in *Rolling Stone’s* history. Building on this attention, in November 2012, McKibben and 350.org launched “The Do The Math” tour, visiting 21 cities to encourage attendees to call on their colleges, churches, and local governments to divest from fossil fuel companies. The group’s web site promised that the campaign would “pick up where Bill McKibben’s landmark *Rolling Stone* article left off – and everyone who comes will be asked to join a growing movement that is strong enough to stand up to the fossil fuel industry... By the time you leave, you’ll be fired up and equipped with the tools, strategies, and resources you need to take on the fossil fuel industry.”²⁷³

According to 350.org, each event, headlined by McKibben, featured “a rotating cast of committed artists, actors, and musicians,” engaging in a “full evening of music, interactive video, and thought-provoking ideas.” Appearances in person or by video included Naomi Klein, anti-apartheid leader Reverend Desmond Tutu, American Indian activist Winona LaDuke, Rev. Lennox Yearwood of the Hip Hop Caucus, and *Gasland* documentary filmmaker Josh Fox. Reported crowds included 1100 in Boulder, Colorado and 1200 in Minneapolis, Minnesota.²⁷⁴ “During the 1980s, 155 schools came out against the South African Apartheid, and so we’re modelling a lot of what we’re doing now on that,” Jamie Henn of 350.org told The Guardian in February 2013. “So, it

made perfect sense for us to start with universities, as these institutions have a special responsibility to make their investments live up to their missions. Many have publicly committed to sustainability and solving the big issues of the day, yet many are still putting tens of millions of dollars into companies that are wreaking havoc on the planet.”²⁷⁵

It is too early to assess the full impact of McKibben’s divestment campaign. As of February 2013, according to 350.org, students at more than a 200 campuses across the country had pressured their institutions to divest from fossil fuel industries, with the most intense efforts occurring at smaller Northeastern colleges. In response, Unity College in Maine announced that it would pursue divestment as did Hampshire College in Massachusetts. Administrators at McKibben’s home institution of Middlebury College pledged that they would begin evaluating divestment options.²⁷⁶ Perhaps most notably, the city of Seattle announced that it would divest its \$2 billion retirement fund and a San Francisco city supervisor introduced a similar measure.²⁷⁷

At Harvard University – a lead target of the divestment campaign given the size of its endowment – among the half of the student body who voted on the issue, 72 percent supported divestment.²⁷⁸ “My argument would be that our most effective impact on climate change is not going to come through any kind of divestment activity,” Harvard University president Drew Faust told the student newspaper in response. “It’s going to come through what we do with our teaching, our research, the people . . . we support, the students who may be the heads of the EPA or all kinds of organizations.”²⁷⁹ In December 2012, the university announced that it was setting up a “social choice fund” separate from its endowment, where donations to the fund would be invested “in one or more external mutual funds that take special account of social responsibility considerations.”²⁸⁰

“I’ve never seen anything like this happen around climate change on campus – it seems like students know a lot more about this issue and are feeling its urgency,” Alli Welton, a Harvard University student activist told *The Guardian*. “It really feels as though divestment is a very clear way that we can effect change. These local-level initiatives make climate change more accessible for people, and make it more possible for them to get involved. We can see very clearly that we’re part of something gigantic, and that definitely creates identity for a national and even international movement.”²⁸¹

Despite the visibility and early success of the Do the Math tour, Cary Krosnisky, co-founder of the Carbon Tracker Initiative cited in McKibben's *Rolling Stone* article, has raised concerns about the campaign's overall strategy. In a blog post at GreenBiz.com, he argued that there were few socially responsible mutual funds fully divested from fossil fuel companies. Similarly, at the web magazine *Ensi*, veteran business journalist Marc Gunther noted that those few "deep green" investment funds that were likely to be fossil fuel free offer lower returns on investments than traditional investment options. These deep green funds might become more competitive if governments started to take action to regulate emissions from fossil fuel sources, but until then, investors would have to accept greater risks and lower returns.²⁸²

As Krosnisky concluded in weighing investment options, at issue was a "severe systemic problem, one that requires really serious conversations, scenario analysis and consideration. Let's stop with the flag-waving and finger-pointing, roll up our sleeves and figure out what we really should be doing."²⁸³ In a follow up post, Krosnisky suggested that the focus on divestment might have little impact on the behavior of oil companies – much less oil producing countries – since most of the stock in companies were controlled by pension and hedge funds and large net worth individuals. A more significant driver of change, he argued, would be for students to advocate for a positive approach to investing that rewarded clean energy companies: "What if universities, as well as teachers and their pensions, combined to invest en masse in the cleantech technologies and infrastructure of tomorrow? This would be a worthy movement."²⁸⁴

CONCLUSION

Having spent six months studying McKibben's books, writing, and career, I hold a deep admiration for his ability to convey the urgency of climate change and to articulate a better approach to life that includes more time for family, reflection and nature. His work as an activist is equally impressive. From his start in 2006 working with a handful of college students to his leadership today of 350.org, McKibben has helped shift the U.S. environmental movement from an almost exclusive focus on insider lobbying, legal strategies, and think tank-style influence to focus greater resources on grassroots organizing and mobilization.

Yet as a public intellectual, McKibben has failed to offer pragmatic and achievable policy ideas. Instead, reflecting his intellectual roots in the deep ecology movement, McKibben's goal has been to generate a mass consciousness in support of limiting economic growth and consumption, with the hope of shifting the United States towards localized economies, food systems, and "soft" energy sources. In particular, his ability to appeal to Yankee virtues and to provoke abolitionist-style outrage over the practices of the fossil fuel industry resonates with many upper-income Baby Boomers and young people living in regions like New England or the Pacific Northwest.

But I wonder how many of the people turning out to protest the Keystone XL pipeline, working on behalf of divestment, or following along on Twitter and Facebook are aware of McKibben's long standing vision of societal change first detailed in *The End of Nature* and most recently in *Deep Economy* and *Eaarth*. In this pastoral future free of consumerism or material ambition, Americans would rarely travel, experiencing the world instead via the Internet, grow much of their own food, power their communities through solar and wind, and divert their wealth to developing countries. Only under these transformational conditions, argues McKibben, would we be able to set a moral example for countries like China to change course, all in the hope that these countries will accept a "grand bargain" towards a cleaner energy path.

To jump-start this hoped for transformation of society, McKibben advocates on behalf of conventional policy approaches such as a cap and dividend bill, a carbon tax, and a binding international agreement on emissions, while insisting that there can be no compromise on the Keystone XL pipeline or divestment. Yet each of these legislative or international policy approaches has proved politically elusive, despite years of lobbying and advocacy. The response to legislative failure from McKibben and other environmentalists has been to double-down in their commitment to their policy paradigm, attributing failure to the political prowess of conservatives and industry, and to a corresponding lack of grassroots pressure and moral outrage.

Yet McKibben's romantic vision of a New England-style utopia and pursuit of a narrow set of policy goals have blinded him to considering alternative approaches that may not only be more effective at curbing greenhouse gas emissions and providing for the material needs of large, diverse populations but also more politically probable. Moreover, McKibben's line-in-the-sand organizing strategies may in fact be only deepening polarization and making it that much more

difficult for President Obama to broker support for policy even among members of his own political party.

“If we pursue the route of seeking ever larger and grander solutions to climate change we will continue to end up frustrated and disillusioned,” warns Mike Hulme in *Why We Disagree About Climate Change*. “Global deals will be stymied, science and economics will remain battlegrounds for rearguard actions, global emissions will continue to rise, and vulnerabilities to climate risks will remain.”²⁸⁵ As alternatives, Hulme points to the framework put forward by the London School of Economics’ Gwyn Prins, Oxford University’s Steve Rayner and others who argue that climate change requires a portfolio of “clumsy” policy solutions, implemented across levels of government and through the private and nonprofit sectors.²⁸⁶

In this approach, by breaking down the wicked nature of climate change into smaller, interconnected problems, achieving progress on these smaller challenges becomes more likely. 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. In contrast to endless international summits, these goals can be pursued through bi-lateral negotiations with specific countries like Indonesia, China, India or Russia.²⁸⁷

In the U.S., carbon dioxide emissions from power plants dropped in 2011 from the previous year’s level, a decline driven by the revolution in natural gas drilling, which has shifted energy production away from coal and towards cleaner burning natural gas.²⁸⁸ A recent analysis by the Clean Air Task Force argues that Obama can meet his Administration’s goals for reducing U.S. greenhouse gas emissions without the need for major legislation. These strategies include finalizing Environmental Protection Agency rules on emissions from new power plants, proposing limits on existing power plants, and by aggressively regulating methane leaks and environmental risks from natural gas drilling.²⁸⁹ In combination with these limits to emissions, analysts from the Brookings Institute, American Enterprise Institute, and Breakthrough Institute argue that the Obama Administration should also aggressively pursue increased research and development and procurement spending on clean energy technology, including carbon capture and storage and advanced nuclear technologies.²⁹⁰ Others have argued for greater investment in regionally tailored

adaptation initiatives that protect, prepare and defend people and communities from current and future climate change-related risks.²⁹¹

“I think we’ve gotten stuck because we expect old solutions are going to solve our new problems. We try the same things, again and again, and they just don’t seem to work. So we try them again, hoping that this time they will,” wrote Jonathon Foley recently, director of the Institute on the Environment at the University of Minnesota. “But we should all remember the old definition of insanity: doing the same thing over and over, expecting a different result.”²⁹²

To be sure, pursuit of more incremental policy approaches can benefit from the grassroots pressure generated by 350.org. Yet today, McKibben and allies like Van Jones appear to have little tolerance for political pragmatism, as they voice extreme dissatisfaction with Obama’s track record on climate policy. In this case, McKibben’s work as an advocate risks distracting from progress on the problem. The controversy over the XL pipeline is a leading example, as the editors at the journal *Nature* and others have argued.²⁹³ “I’m not a fan of the pipeline and would rather it wasn’t built, but it’s hardly the top priority for addressing climate change that many have claimed,” wrote Foley. “At best, it’s a bit of a sideshow. At worst, it’s a distraction from the bigger issues that contribute to climate change.”²⁹⁴

McKibben can also be faulted for his quasi-religious opposition to specific forms of technology. In *The End of Nature* and in later works, he warned strongly against pursuing technologies like genetic engineering that might allow us to better adapt to climate change impacts, a path that would result in an “artificial world, a space station.”²⁹⁵ In doing so, he drew an analogy to the years following the Civil War, in which slavery was no longer an acceptable method for whites to exercise control over blacks. But rather than converting to “new notions of universal fellowship and equality, white Americans invented segregation.” Using technologies like genetic engineering to cope with climate change, according to McKibben, was the moral equivalent of segregation: “Just as the old methods of dominating the world have become unworkable, a new set of tools is emerging that may allow us to continue that domination by different, expanded, and even more destructive means...”²⁹⁶ Today, as journalist Keith Kloor has detailed in a series of articles at *Slate* magazine, McKibben’s techno-skepticism is echoed by many environmentalists, local food enthusiasts, and writers like Michael Pollan, as they advocate on behalf of organic farming and

against genetically-altered crops in the United States and abroad, presenting barriers to the development of the technology as a means to cope with climate change-related impacts.²⁹⁷

McKibben is perhaps at even greater fault for downplaying the need for “hard” technological approaches like nuclear energy or carbon capture and storage, focusing instead on “soft” technologies like solar, wind, and efficiency. These technologies, however, are unlikely to alter the dynamics of fossil-fuel energy use and dependency worldwide. Consider that globally, an estimated 1,200 coal power plants are scheduled for construction, with China and India accounting for three-quarters of this number.²⁹⁸ Compounding the challenge, according to University of Manitoba energy analyst Vaclav Smil, solar and wind energy sources are unlikely to be able to overcome the problems of intermittency, storage capacity, cost, and be scalable in time to compete with coal power worldwide.²⁹⁹

In other words, innovative technologies are needed that can not only power the mega-cities of Asia, but that can also limit emissions from the thousands of coal plants already in place and scheduled to be built around the world. In advocating for nuclear energy, NASA scientist James Hansen puts it even more bluntly: “Suggesting that renewables will let us phase rapidly off fossil fuels in the United States, China, India, or the world as a whole is almost the equivalent of believing in the Easter Bunny and Tooth Fairy.”³⁰⁰ Both nuclear and carbon capture and storage have significant trade-offs – and face a great deal of uncertainty in their development and eventual deployment, but for McKibben and others to ignore the need for alternatives to solar, wind and efficiency misleads both themselves and the public. As Keith Kloor writes at *Slate*: “Bill McKibben says we need to ‘do the math,’ ...It’s a powerfully frightening equation. But we also need to do the math for the energy equation, which should be equally frightening.”³⁰¹

According to Arizona State University’s Dan Sarewitz, the techno-pessimism of environmentalists like McKibben represents a “misplaced reverence for science that increasingly, and with ever-greater precision, documents the problems associated with a technology-dependent society.” Sarewitz argues that this outlook limits the ability of environmentalists and their liberal allies to achieve their political and social goals, as they become overly preoccupied with “small risks to individuals rather than the potential for very large benefits to society” from technology.³⁰²

In this case, useful comparisons can be made between McKibben and environmentalists like Stewart Brand and Mark Lynas who have urged their peers to adopt a new outlook on technological innovation. Sharing many of the same political aims as McKibben, over the course of his career, Lynas has developed a very different perspective about technology and humans' relation to nature. In his most recent book *The God Species: How the Planet Can Survive The Age of Humans*, Lynas argued that "we cannot afford to foreclose powerful technological options like nuclear, synthetic biology and [genetic engineering] because of Luddite prejudice and ideological inertia."³⁰³ Specific to geo-engineering, Lynas warned environmentalists of repeating the mistakes of genetic engineering, "where opposing a technology a priori meant that lots of potential benefits were stopped or delayed for no good cause." Most importantly, he wrote, "environmentalists need to remind themselves that humans are not all bad...we can nurture and protect as well as dominate and conquer."³⁰⁴

What's clear from the analysis of McKibben's writing and career is that multiple discourses about climate change exist, even among the most visible voices arguing on behalf of societal action. As New York University's Jay Rosen noted in a 2011 speech to the UK Conference of Science Journalists, this is to be expected, since on wicked problems: "There is no kumbaya moment. You never get everyone on the same page," and you never reach consensus. Yet as he argues, "what's possible is a world where different stakeholders 'get' that the world looks different to people who hold different stakes."³⁰⁵ Similarly, as Andrew Revkin writes, citing the work of Hulme and others: "Confusion and division over 'global warming' often grows out of the meaninglessness of the phrase on its own. The result is that people with very different world views, in essence, create their own definitions of the term."³⁰⁶

In a recent essay titled "Wicked Polarization," Michael Schellenberger and Ted Nordhaus describe progress on climate change and similarly complex social problems as obstructed by experts and public intellectuals who have "come to frame virtually every national problem as a consequence of the irrationality, ignorance, and immorality of the political Other." Arguments for action on climate change that evoke idealized visions of small-scale, hyper-efficient agrarian communities powered by wind and solar reflect the priorities and values of environmentalists like McKibben, rather than a pragmatic set of choices designed to both effectively manage the problem

and to align a diversity of political interests in support of compromise. “The problem is not that we are in a post-truth age but rather that we have not learned to adapt to it,” write Shellenberger and Nordhaus. “Perhaps a good place to begin is by recognizing our own biases, perspectives, and agendas and attempting to hold them more lightly... bringing an end to our ideological arms race will ultimately require that we force partisans out of their comfort zone by redefining those problems in ways to which partisans do not already know the answers.”³⁰⁷

As a complement to journalists and public intellectuals like McKibben, there is therefore a strong need for writers and forums which serve as bridges between discourses and perspectives. On this function, “the idea here is not just to highlight points of communality and sites for compromise,” writes political scientist John Dryzek and co-author Hayley Stevenson, “but also to provide possibilities for contestation and the reflection it can induce.”³⁰⁸ Similarly, as the University of Michigan’s Andrew Hoffman concludes, what’s needed are initiatives that offer “broker frames,” discourses and contexts that expand, diversify, and blur perspectives on the issue, beyond the mostly left-leaning, affluent, older and white segment of Americans who are currently alarmed by climate change.³⁰⁹

As news organizations expand digital and social media initiatives, an ideally organized beat for covering a problem like climate change would depend on a socially diverse network of contributors, rather than relying on the expertise of a single journalist and a few sources. Since the people who have the most expertise on climate change are unevenly distributed across the planet, this form of networked journalism would be guided by a philosophy that “my readers know more than I do,” argues Jay Rosen.³¹⁰ In all, a networked approach to journalism that features a plurality of perspectives is a philosophical approach that challenges directly the outlook offered by Walter Lippmann, who assumed his readers lacked the capacity to contribute substantively to expert-level discussion. The networked approach also contrasts with the traditional model of book author, essayist, and columnist employed by most contemporary knowledge journalists.

Andrew Revkin’s Dot Earth blog at *The New York Times* is a leading example of a networked approach to knowledge journalism that expands and blends discourses about climate change. Drawing on his experience as a science reporter, Revkin is not only able to function as an explainer and informed critic of science, but he also serves as a convener, facilitating discussions among a

diversity of experts, advocates, and various publics, while contextualizing the uncertainty relative to specific claims, technologies, and policy approaches.

He also brings a different perspective to the wicked nature of climate change, arguing for a broader definition of the societal challenge and to a broader menu of political and technological approaches than most environmentalists might prefer. At Dot Earth, Revkin writes “if I had to choose one of two bumper stickers for our car — CLIMATE CRISIS or ENERGY QUEST — I’d choose the latter.” As he continues: “This doesn’t mean I reject the idea that we face a climate crisis. I just don’t think that phrase is a productive way to frame this challenge...”³¹¹ Revkin has described his views on climate change as a sub-set of the bigger sustainability challenge, defined as “how we manage our infinite aspirations on a finite planet.”³¹² For his students at Pace University, he explains this challenge by referencing the expected population in the year 2050: “9 Billion People + 1 Planet = ?” According to Revkin, sustainability is about managing the key questions we face “on a trajectory towards 9 billion people: how many people are too many, how much nature is not enough, how much poverty is too much?”³¹³ Similarly, in a 2012 profile of McKibben at *Outside* magazine, Revkin said he considered McKibben “an incredible organizer and motivator, particularly for young people. But we’ve drawn different conclusions about several important aspects of the science and approaches to getting traction on related energy issues. I prefer 350’s days of action to its focus on a number, which I think doesn’t have sufficient meaning unless it’s accompanied by ‘350 when’ and ‘350 how.’”

Revkin explains that his ultimate focus at Dot Earth is the “broader exploration of new ways to make information work – to give ideas the best chance of getting where they are needed to help advance our relationships to the environment and each other.” Rather than frequently advocating for a position, he prefers posing questions, describing answers from experts and others, an approach that McKibben has criticized as “relentlessly middle-seeking.”³¹⁴ But as Revkin writes, he views his role 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.”³¹⁵

As he described his goals in a 2011 interview: “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." In doing so, Revkin recognizes his departure from peers like McKibben who have combined their journalism with advocacy, or those in the tradition of Walter Lippmann like Tom Friedman who speak to their readers from the position of enlightened authority. Instead, Revkin views himself as providing a "service akin to that of a mountain guide after an avalanche. Follow me and I can guarantee an honest search for a safe path. This is a big contrast from the dominant journalism paradigm of the last century, crystallized in Walter Cronkite's 'That's the way it is' signoff."³¹⁶

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