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## Framework

#### The standard is maximizing expected well-being.

#### 1] Ethical agnosticism means we should default towards preventing extinction as a meta-constraint on all ethical theories.

Nick **Bostrom 13** [Faculty of Philosophy & Oxford Martin School, Oxford], “Existential Risk Prevention as Global Priority”, Global Policy, Vol 4, Issue 1 (2013): 15-31, BE

**These reflections on moral uncertainty suggest an alternative, complementary way of looking at existential risk**; they also suggest a new way of thinking about the ideal of sustainability. Let me elaborate.¶ **Our present understanding of axiology might well be confused. We may not now know — at least not in concrete detail — what outcomes would count as a big win for humanity**; we might not even yet be able to imagine the best ends of our journey. **If we are indeed profoundly uncertain about our ultimate aims, then we should recognize that there is a great option value in preserving — and ideally improving — our ability to recognize value and to steer the future accordingly. Ensuring that there will be a future version of humanity with great powers and a propensity to use them wisely is plausibly the best way available to us to increase the probability that the future will contain a lot of value. To do this, we must prevent any existential catastrophe**.¶ We thus want to reach a state in which we have (*a*) far greater intelligence, knowledge, and sounder judgment than we currently do; (*b*) far greater ability to solve global-coordination problems; (*c*) far greater technological capabilities and physical resources; and such that (*d*) our values and preferences are not corrupted in the process of getting there (but rather, if possible, improved). Factors *b* and *c* expand the option set available to humanity. Factor *a* increases humanity's ability to predict the outcomes of the available options and understand what each outcome would entail in terms of the realization of human values. Factor *d*, finally, makes humanity more likely to want to realize human values.

#### 2] Actor Spec—Fixation on the motives of duty doesn’t make sense for collective deliberation.

Robert E. **Goodin 95** [professor of government at the University of Essex, and professor of philosophy and social and political theory at Australian National University], “Utilitarianism as a Public Philosophy”, Cambridge Studies in Philosophy and Public Policy, May 1995, BE

The great advantage of utilitarianism as a guide to public conduct is that it avoids gratuitous sacrifices, it ensures as best we are able to ensure in the uncertain world of public policy-making that policies are sensitive to people’s interests or desires or preferences. The great failing of more deontological theories, applied to those realms, is that they fixate upon duties done for the sake of duty rather than for the sake of any good that is done by doing one's duty. Perhaps it is per- missible (perhaps it is even proper) for private individuals in the course of their personal affairs to fetishize duties done for their own sake. It would be a mistake for public officials to do likewise, not least because it is impossible. The fixation on motives makes absolutely no sense in the public realm, and might make precious little sense in the private one even, as Chapter 3 shows. The reason public action is required at all arises from the inability of uncoordinated individual action to achieve certain morally desir- able ends. Individuals are rightly excused from pursuing those ends. The inability is real; the excuses, perfectly valid. But libertarians are right in their diagnosis, wrong in their prescription. That is the mes- sage of Chapter 2. The same thing that makes those excuses valid at the individual level - the same thing that relieves individuals of re- sponsibility - makes it morally incumbent upon individuals to organ- ize themselves into collective units that are capable of acting where they as isolated individuals are not. When they organize themselves into these collective units, those collective deliberations inevitably take place under very different cir- cumstances, and their conclusions inevitably take very different forms. Individuals are morally required to operate in that collective manner, in certain crucial respects. But they are practically circumscribed in how they can operate, in their collective mode. And those special constraints characterizing the public sphere of decision-making give rise to the special circumstances that make utilitarianism peculiarly apt for public policy-making, in ways set out more fully in Chapter 4. Gov- ernment house utilitarianism thus understood is, I would argue, a uniquely defensible public philosophy.”

#### 3] No moral intent/foresight distinction for states—it’s just avoiding responsibility.

David **Enoch 7** [The Faculty of Law, The Hebrew University, Mount Scopus Campus, Jerusalem], “INTENDING, FORESEEING, AND THE STATE,” Legal Theory, 13 (2007), 69–99, pg. 90-1, beckert

The general difficulty of the intending-foreseeing distinction here stemmed, you will recall, from the feeling that attempting to pick and choose among the foreseen consequences of one’s actions those one is more and those one is less responsible for looks more like the preparation of a defense than like a genuine attempt to determine what is to be done. Hiding behind the intending-foreseeing distinction seems like an attempt to evade responsibility, and so thinking about the distinction in terms of responsibility serves to reduce even further the plausibility of attributing to it intrinsic moral significance. This consideration—however weighty in general—seems to me very weighty when applied to state action and to the decisions of state officials. For perhaps it may be argued that individuals are not required to undertake a global perspective, one that equally takes into account all foreseen con- sequences of their actions. Perhaps, in other words, individuals are entitled to (roughly) settle for having a good will, and beyond that let chips fall where they may. But this is precisely what stateswomen and statesmen—and certainly states—are not entitled to settle for.44 In making policy decisions, it is precisely the global (or at least statewide, or nationwide, or something of this sort) perspective that must be undertaken. Perhaps, for instance, an individual doctor is entitled to give her patient a scarce drug without think- ing about tomorrow’s patients (I say “perhaps” because I am genuinely not sure about this), but surely when a state committee tries to formulate rules for the allocation of scarce medical drugs and treatments, it cannot hide behind the intending-foreseeing distinction, arguing that if it allows45 the doctor to give the drug to today’s patient, the death of tomorrow’s patient is merely foreseen and not intended. When making a policy-decision, this is clearly unacceptable. Or think about it this way (I follow Daryl Levinson here):46 perhaps restric- tions on the responsibility of individuals are justified because individuals are autonomous, because much of the value in their lives comes from personal pursuits and relationships that are possible only if their responsibility for what goes on in the (more impersonal) world is restricted. But none of this is true of states and governments. They have no special relationships and pursuits, no personal interests, no autonomous lives to lead in anything like the sense in which these ideas are plausible when applied to individuals persons. So there is no reason to restrict the responsibility of states in anything like the way the responsibility of individuals is arguably restricted.47 States and state officials have much more comprehensive responsibilities than individuals do. Hiding behind the intending-foreseeing distinction thus more clearly constitutes an evasion of responsibility in the case of the former. So the evading-responsibility worry has much more force against the intending-foreseeing distinction when applied to state action than elsewhere.

## Advantage

#### The press overrepresents climate denial and delay releases, which misconstrues scientific consensus and sidelines qualified experts

Winters 20 (Joseph Winters is a Newsletter Reporter at Grist, a nonprofit news org using journalism, storytelling, and network-building to show how we can solve the climate crisis. He graduated from Harvard University with a degree in Earth and Planetary Sciences/Environmental Science and Public Policy.), “The curse of ‘both-sidesism’: How climate denial skewed media coverage for 30 years”, Grist, 7-28-20, Climate+Science, <https://grist.org/climate/the-curse-of-both-sidesism-how-climate-denial-skewed-media-coverage-for-30-years/> NT

Ever wonder why Americans have been so slow to support climate action? **A new study lays some of the blame on media bias —for 30 years, three of the country’s most influential sources of news gave too much credence to arguments that the world shouldn’t take decisive action to mitigate climate change**. “Opponents of climate action have been given an outsize opportunity to sway this debate,” said Rachel Wetts, the author of the study. Her results were published Monday in the Proceedings of the National Academy of Sciences. ‘Wetts analyzed 1,768 press releases from business, government, and social advocacy organizations from 1985 to 2013, categorizing them by their stance on climate action. She then ran the press releases through plagiarism detection software to see how often they were featured in the country’s largest-circulation newspapers: The New York Times, The Wall Street Journal, and USA Today. She found that even though 10 percent of the press releases contained messaging against climate action — arguments like, “It would be too expensive to reduce greenhouse gas emissions” — 14 percent of them wound up in print. **By contrast, the more prevalent press releases arguing for personal, corporate, or political action to tackle climate change were only covered 7 percent of the time.** And the least-covered press releases came from groups with the most expertise on science and technology, such as the American Academy of Arts and Sciences and IBM. To support our nonprofit environmental journalism, please consider disabling your ad-blocker to allow ads on Grist. Here's How Edward Mailbach, director of the George Mason University Center for Climate Change Communications, called these conclusions unsettling. “Rather than marginalize self-interested voices and give prominence to expert voices, these papers did just the opposite,” he said. How to explain the results? Wetts said one reason for the imbalance might be tied to journalistic norms of objectivity, which reporters and editors **often interpret as a need to give at least two sides to every story, no matter the science**. She called this “false balance,” because it can put unsubstantiated opinions on the same footing as well-established facts. In the case of climate change, she said that the practice has lent legitimacy to those who deny climate change**, leading readers to believe that denial is “more than a fringe stance**.” Previous research has suggested that this practice — also known as “bothsidesism” — began to decline in the mid-2000s. But Wetts’ analysis found no statistically significant change in coverage over the 30-year period of the study. She also said that **the trend couldn’t be explained by excessive coverage of anti-climate press releases in the business-friendly Wall Street Journal**. Claims that steps to curb carbon emissions would be too costly or undermine U.S. energy independence, for instance, also found favor in the liberal-leaning New York Times. As climate denial falls out of fashion, what’s been called “climate delay” has taken some of its space. This is when people acknowledge the reality of climate change but seek to put off large-scale efforts to address it, sometimes redirecting responsibility for the climate crisis to consumers and emphasizing the downsides of urgent action. Wetts scanned press releases for both climate denial and delay — anything that argued against climate action — regardless of whether they accepted the science. “Maybe people are covering climate deniers somewhat less,” Wetts said, “but then they’re substituting in other conservative voices instead. They’re talking about people who are opposed to climate action for some other reason besides denying the science.” Jennifer Marlon, a senior researcher at the Yale Program on Climate Change Communication, acknowledged that the media environment has changed since the mid-2010s — The New York Times in particular has ramped up its climate coverage — but she suspects that false balance continues to influence the national conversation. For instance, **newspapers might be better at contextualizing opponents of climate action, explaining that their views are outside the mainstream.** “But those arguments are still out there and are very much in play,” Marlon said. Wetts called on researchers to investigate the effects of media skew on public policy. The **messages amplified by the media “can dampen political will to act on climate change**,” she said in a statement, “with potentially serious consequences for how we as a society address — or fail to address — this issue.”

#### **Climate change is woefully under covered, only in headlines in times of political upheaval**

Blanding 17 (Michael Blanding is a journalist with more than 25 years of experience, covering media, crime, culture, and the environment. His work has appeared in publications including The New York Times, Wired, The New Republic, Slate, The Nation, and others. His most recent book, “The Map Thief,” was named an NPR Book of the Year in 2014.), “Covering Climate Change, with Urgency and Creativity”, Nieman Reports, 8-28-17, <https://niemanreports.org/articles/covering-climate-change-with-urgency-and-creativity/> NT

Despite the urgency of climate change as an issue, in-depth stories like the one produced by ICN are a rarity. A veteran of The New York Times and the Los Angeles Times, Banerjee joined ICN out of frustration at not being able to pursue in-depth investigations on the topic. “Top management in the newsroom don’t give a hoot about climate change: ‘It’s depressing. It’s boring. It’s not sexy,’” she says. “They’ll tell you it’s the most important beat on the planet, but **unless it’s wrapped up in politics** and who’s up who’s down, **they don’t care**.” Coverage of climate change is still just a small fraction of the overall news budget Statistics bear her out, in part. Aside from PBS, network broadcast news has virtually stopped covering the topic. A study published by Media Matters for America in March found evening newscasts and Sunday shows on ABC, CBS, NBC, and Fox devoted only 50 minutes combined on climate change last year—despite such important climate-related stories as the signing of the Paris climate agreement, several extreme weather events, and the presidential campaign—during which there were no debate questions about climate change. “Coverage is nowhere near where it should be for something that is so central to understanding how we can live, work, play, relax in a 21st-century society,” says Maxwell Boykoff, author of the 2011 book “Who Speaks for the Climate?” and a University of Colorado professor who has been tracking news coverage of climate change for 15 years. “Television has very much shirked its responsibility, and that is very worrisome.” Major newspapers, while better, have been uneven over the past decade. According to research by Boykoff and others, coverage in the five largest U.S. newspapers decreased from an average of nearly 400 stories a month by 2007 to less than half that five years later. While coverage has rebounded to about 300 a month over the past two years, coverage of climate change is still just a small fraction of the overall news budget, says Boykoff, mostly spiking around political events such as President Trump’s recent decision to pull out of the Paris accord, rather than in-depth coverage of how countries around the world are adapting to changes in climate, or how it is affecting the world’s poorest citizens. “The coverage since Trump has taken office is as high as it’s been, but it’s stunning how much of it is pegged to his activities, worries, and threats,” says Boykoff. “**It hasn’t enhanced productive discussion on these issues. Instead, it’s been filled with fear and woe and worry**.” Case in point: a 7,000-word cover story in New York magazine in July called “The Uninhabitable Earth,” which envisioned an apocalyptic worst-case scenario of what climate change could wreak in the next century, complete with mass extinctions, famine, disease, and war. The story was criticized as too alarmist even by climate scientists and those who work in climate politics, including one who fretfully called it “climate disaster porn.” It’s no wonder then that Americans are woefully undereducated on the topic. A 2016 study by the Yale Project on Climate Communication and George Mason University Center for Climate Change Communication, found only two-thirds of Americans even believe climate change is happening. **Just over half believe it is caused by humans. And only 15 percent are aware that more than 9 out of 10 scientists agree on both points.** The dearth of coverage can be explained, at least in part, by the difficulty in covering an issue that defies most journalistic conventions, says Bud Ward, who has reported on the issue for more than 20 years and is editor of Yale Climate Connections, published by the Yale Project. Climate change is often perceived as an abstract concept, he says, lacking a timely news hook: “It affects only polar bears I’ll never see, or it will only take place in 2150 or beyond.” Just as crucially, since nearly all scientists are in agreement on the problem, the issue often lacks clearly defined sides. “The villain is us, or villains are everywhere.”

#### Major news coverage of climate change still lacks urgency

Hertsgaard and Pope 21 (Mark Hertsgaard is the environment correspondent at The Nation, the executive director of Covering Climate Now, and the author of several books on climate change. Kyle Pope is an American journalist who is the editor and publisher of the Columbia Journalism Review.), “The media is still mostly failing to convey the urgency of the climate crisis”, The Guardian, 6-3-21, <https://www.theguardian.com/commentisfree/2021/jun/03/media-climate-change-crisis-emergency> NT

Today, all of humanity is under attack, this time from an overheated planet – and too many newsrooms still are more inclined to cover today’s equivalent of dance competitions. The record heatwaves and storms of 2020 confirmed what scientists have long predicted: climate change is under way and threatens unparalleled catastrophe. And because carbon dioxide traps heat in the atmosphere for centuries, temperature rise and its effects are only getting started. As one scientist said as wildfires turned San Francisco’s skies orange last September, “We’re going to look back in 10 years, certainly 20 … and say, ‘Wow, 2020 was a crazy year, but I miss it.’” **A handful of major newspapers are paying attention. But most news coverage, especially on television, continues to underplay the climate story, regarding it as too complicated, disheartening or controversial**. Last month, we asked the world’s press to commit to treating climate change as the emergency that scientists say it is; their response was dispiriting. We created Covering Climate Now in April 2019 to help break the media’s climate silence; Bill Moyers talked about Murrow at our inaugural conference. Since then, Covering Climate Now has grown into a consortium of hundreds of news outlets reaching a combined audience of roughly 2 billion people, and the climate coverage of the media as a whole has noticeably improved. But that coverage is still not going nearly far enough. To convey to audiences that civilization is literally under attack, news outlets should play the climate story much bigger, running more stories – especially about how climate change is increasingly affecting weather, economics, politics and other spheres of life – and running those stories at the top, not the bottom, of a homepage or broadcast. News reports should also speak much more plainly, presenting climate change as an imminent, deadly threat. This message is muted at best today, and the result is predictable. In the United States, only 26% of the public is “alarmed” about climate change, according to polls analyzed by the Yale Project on Climate Change Communications (a member of the CCNow consortium). One reason? **Less than a quarter of the public hear about climate change in the media at least once a month.** Good journalism leads the conversation, and there is certainly plenty of climate news worth covering these days. In a pair of stunning developments last week, a court in the Netherlands ordered the Royal Dutch Shell oil company to reduce its own and its customers’ greenhouse gas emissions by 45% by 2030 in accordance with the Paris agreement, even as shareholders of ExxonMobil and Chevron rebelled against management’s refusal to take strong climate action. A week earlier, the International Energy Agency declared that all new fossil fuel development must stop to prevent irreversible climate destruction. The climate emergency is upending politics, economics and virtually every other subject journalists cover, and newsrooms need to catch up. They can start with the Climate Emergency Statement that CCNow issued in April as part of our Earth Day coverage. Co-signed by eight of our partners – Columbia Journalism Review, the Nation, the Guardian, Scientific American, Noticias Telemundo, La Repubblica, the Asahi Shimbun, and Al Jazeera English – the statement’s first sentence said: “it is time for journalism to recognize that the climate emergency is here.” Emphasizing that this was “a statement of science, not politics”, the statement linked to articles in peer-reviewed journals where thousands of scientists affirmed that fact. The statement noted that the Covid-19 pandemic illustrated how well news outlets can cover emergencies when they commit to it, and it invited journalists everywhere to apply that same urgency to the climate story. More than 30 newsrooms have now signed the statement, but some major outlets told us privately they won’t sign. The phrase “climate emergency” sounded like activism, they said; endorsing it might make them look biased. Instead, they added, they would let their climate coverage speak for itself. But that’s the problem: **their coverage does speak for itself, and it is simply not reflecting the facts of the story.** It is a fact that thousands of the world’s scientists, including many of the most eminent climate experts, say humanity faces a climate emergency. **Most major news outlets still present climate change as no more important than a dozen other public issues**, when the fact is that if the world doesn’t get it under control, fast, climate change will overwhelm every other issue. Another fact: the climate emergency comes with a time limit – wait too long to halt temperature rise and it becomes too late; CO2’s long atmospheric life makes further temperature rise inevitable, perhaps irreversible. We’re not obsessed with whether a news outlet does or doesn’t use the term “climate emergency”; what matters is whether the outlet’s overall coverage treats climate change like an emergency. For example, does the outlet give the climate story the same 24/7 coverage it has devoted to the Covid-19 pandemic or, before that, the 9/11 terrorist attacks, or other landmark events? Has it reoriented its newsroom and reassigned reporters to cover the climate story? **Do its journalists present the story with a sense of urgency**? At a summit in Glasgow this November, world leaders are supposed to adopt much stronger measures against the climate emergency. Between now and then, journalists have a responsibility to make sure the public understands what’s at stake and, crucially, that humanity already has the technologies and solutions to decarbonize our economies; what’s needed is the political will to implement them. Journalists also have a responsibility to hold powerful interests accountable for doing what’s needed to preserve a livable planet. **That starts with telling the truth: about the climate emergency, its solutions, and how little time remains before it’s too late.**

#### False balance climate reporting enables climate denialists and leads to a misinformed public

Blanding 17 (Michael Blanding is a journalist with more than 25 years of experience, covering media, crime, culture, and the environment. His work has appeared in publications including The New York Times, Wired, The New Republic, Slate, The Nation, and others. His most recent book, “The Map Thief,” was named an NPR Book of the Year in 2014.), “Covering Climate Change, with Urgency and Creativity”, Nieman Reports, 8-28-17, <https://niemanreports.org/articles/covering-climate-change-with-urgency-and-creativity/> NT

When considering climate issues, Borenstein says, newer journalists will make the mistake of pitting scientists against political experts or think tanks. “That is like the doctor telling you you have cancer, so you go to the dentist for a second opinion,” Borenstein says. **The problem of false balance is one that has dogged climate change since global warming first started becoming an issue in the late 1980s and early 1990s**. In part due to lack of data—and in part due to intentional obfuscation by fossil-fuel companies and right-wing think tanks—reporters have struggled to give fair representation to all perspectives. Says Wihbey, “How do we cover this as a political issue that seems to have two sides, but where there seems to be overwhelming scientific data accumulating on one side?” Oftentimes, they settled for a “he said, she said” story, giving equal weight to both. That started to change in the mid-2000s, especially after an influential paper Boykoff co-authored with his brother, Jules, a political scientist, entitled “Balance as Bias,” published in the journal Global Environmental Change in 2004. The Boykoffs analyzed more than 600 stories selected at random from The New York Times, The Washington Post, Los Angeles Times, and The Wall Street Journal. Despite the International Panel on Climate Change’s release of a scientific consensus that humans contributed to global warming, **they found that more than half of the articles gave equal weight to human-caused and natural-caused explanations for the issue**. “In other words,” the Boykoffs wrote, “through adherence to the norm of balance, the U.S. press systematically proliferated an informational bias.” The dearth of coverage can be explained, at least in part, by the difficulty in covering an issue that defies most journalistic conventions When the study was repeated a few years later, the problem of false balance had largely gone away—both as the evidence supporting man-made climate change grew stronger and as journalists grew savvier in their reporting. That has made it all the more surprising that **the issue of false balance has once again reared its head in the last six months, as the presence of climate change deniers in high positions** in the current presidential administration has once again put journalists in a quandary. Recent statements by Environmental Protection Agency administrator Scott Pruitt, Energy Secretary Rick Perry, and President Trump himself questioning the science have been echoed by far-right media sites such as Breitbart, Infowars, and Daily Wire, and put new pressure on journalists to include dissenting views. That has made it more crucial than ever that journalists are able to separate fact from opinion, says Emmanuel Vincent, a project scientist at the University of California, Merced, who launched the website Climate Feedback three years ago as a forum for scientists to weigh in on the accuracy of media coverage. “Rick Perry said that climate change is due to the oceans, and a journalist may just let it go and say that’s his opinion, but it contradicts reality,” he says. “It should be the job of the journalist to say that.”

#### Big fossil fuel companies working with government institutions target minorities with climate misinformation saying green energy raising prices astronomically

Bagley 15 (Katherine Bagley is the managing editor of Yale Environment 360. She was previously a reporter for InsideClimate News covering the intersection of environmental science, politics and policy, with an emphasis on climate change.), “Minorities Targeted with Misinformation on Obama’s Clean Power Plan, Groups Say”, Inside Climate News, 8-12-15, updated 8-13-15, <https://insideclimatenews.org/news/12082015/minorities-targeted-misinformation-obama-carbon-clean-power-plan-national-black-chamber-commerce/> NT

After the Environmental Protection Agency released its groundbreaking carbon regulations last week, opponents worked to fill the airways and newspaper opinion pages with the message that the Clean Power Plan would cost minority communities millions of jobs and increase their poverty levels by more than 25 percent. The claims were the resurgence of a campaign put forward two months ago by the National Black Chamber of Commerce. The Washington, D.C. group describes itself as a “nonprofit, nonpartisan, nonsectarian organization dedicated to the economic empowerment of African American communities,” but in fact has strong financial ties to the oil and gas industry. It’s campaign was so vigorous, a prominent African American congressman, Alcee Hastings (D-Fla.) made a strong statement during the group’s annual convention in Florida and urged NBCC to sever ties with the industry and **stop misleading minorities, who are disproportionately affected by pollution.** “The National Black Chamber of Commerce should take a firm stand against the misinformation being spread by these industries,” Hastings said. “I believe that we should all be on the side of families, not industry polluters. I urge the NBCC to cut ties with these groups immediately.” The NBCC has received more than $1 million from the ExxonMobil Foundation since 1998. Among the sponsors of that annual convention were Gulf Power, Florida’s division of Southern Company, Koch Industries and its subsidiary Georgia Pacific, Chevron and the American Chemistry Council, the Florida Center for Investigative Reporting wrote. “The National Black Chamber of Commerce is very well known as a front group for industry,” said Aliya Haq, special projects director of the Natural Resources Defense Council’s climate and clean air program. “It wasn’t surprising when these claims came out. **It is just their latest attempt at derailing regulation in a long history of working with fossil fuel companies**.” The NBCC’s arguments have raised questions about the Clean Power Plan among some minority communities, said Jacqui Patterson, director of the National Association for the Advancement of Colored People’s environmental and climate justice program. “Folks in communities where I work have come to me and said they’ve heard this and are asking for clarification,” she said. “Electricity bills for low-income and many minority communities are a higher proportion of people’s income. Anything that says bills might go up definitely raises alarms.” While the EPA predicts electricity prices may rise 2.4 to 2.7 percent by 2020 under the Clean Power Plan, it also argues that **improvements in energy efficiency will offset the cost for consumers**. It will also improve public health by lowering exposure to fine particulates and ozone pollution in neighborhoods near power plants, saving governments and families up to $34 billion in medical expenses by 2030, according to the EPA. “**Pollution is a problem that disproportionately affects minorities in our country**,” Hastings said in his statement. “According to the NACCP Environmental and Climate Justice Program, 68 percent of African Americans live within 30 miles of a power plant. This means that black communities across the country are more vulnerable to exposure from power plant emissions and carbon pollution.” The NBCC did not respond to request for comment. “The NBCC claims have been **fact-checked and proven inaccurate multiple times**,” said Dave Anderson, energy campaign organizer for the Union of Concerned Scientists, a scientific and environmental advocacy group. “**Most journalists see that, but the group is using newspapers’ opinion sections to get around the fact-checking of reporters**.” NBCC has been fighting environmental regulations since the late 1990s, coinciding with some of its earliest donations from ExxonMobil. In 2000, the organization published a study on the impacts of the Kyoto Protocol, the first international agreement on climate change, on African Americans and Hispanics. It argued the Protocol could “force millions of Blacks and Hispanics below the poverty line.” NBCC president Harry Alford has testified before Congress in recent months on the negative impacts of both the Clean Power Plan and EPA plans to lower acceptable ground ozone levels. The organization is not the only one with strong financial ties to the fossil fuel industry vocally opposing the carbon regulations. Charles Steele Jr., the president of the Southern Christian Leadership Conference, who has close ties with oil and gas executives, has been quoted in several articles and opinion pieces contending that the Clean Power Plan will be bad for low-income households. Similar campaigns have been launched by The Cato Institute, Beacon Hill Institute, Committee for a Constructive Tomorrow, Heartland Institute, and the U.S. Chamber of Commerce, among dozens of other groups that have received fossil fuel funding. Patterson and Haq said efforts to discredit the carbon regulations among minorities are particularly frustrating because these communities are expected to benefit the most from the Obama administration’s carbon regulations, which is being enacted under the Clean Air Act, a piece of landmark environmental legislation signed into law in 1970. “Every time we’ve cleaned up pollution in these communities, it has been good for these communities,” said Haq. “Never have the lights gone off or bills skyrocketed from a new Clean Air Act rule. It has been good for people’s health, and not bad for their budgets.”

#### Climate journalists need to forefront objective perspectives, accurately reporting on the probability and magnitude of scenarios

Fahy 17 (Declan Fahy is an Associate Professor in the School of Communications at Dublin City University who researches the public communication of science, health, environment, and technology. He is the author of The New Celebrity Scientists: Out of the Lab and Into the Limelight (2015). He previously worked as an assistant professor at American University in Washington, D.C. He is currently on the editorial advisory board of Public Understanding of Science, the editorial board of Journal of Science and Popular Culture, and the editorial board of Environmental Communication.), “Objectivity, False Balance, and Advocacy in News Coverage of Climate Change”, Oxford University Press, 3-29-17, pg. 24, <https://oxfordre.com/climatescience/view/10.1093/acrefore/9780190228620.001.0001/acrefore-9780190228620-e-345> NT

There has been a dissolution of false balance in news coverage of climate science since the 1990s. This has been largely caused by a combination of changes in journalists’ working practices, such as the application of weight-of-evidence reporting, the search for strong scientific consensus, an awareness of industry attempts to influence coverage, and the presentation and curation of multiple points of view into news reports. Even so, false balance remains an important idea, as it provides, by negative example, a pitfall that contemporary reporters can avoid when they report on social and political responses to climate change. **Journalists can avoid false balance about climate futures.** As climate models become more sophisticated, scientists will be able to quantify uncertainties and generate more precise probabilistic projections of future impacts (Painter, 2013). These estimations will feed into global, national, and regional decision making. Journalists, therefore, will need to understand how this reasoning works and be able to write about potential impacts in a way that **moves beyond either presenting catastrophic scenarios or reporting merely that future impacts are uncertain**. “So it needs to be in the DNA of journalists,” wrote Painter (2013, p. 137), “to ask scientists or forecasters questions like ‘what is the level of probability of such a weather event or impact happening, how confident are you in this prediction, and why are you confident’?” A major area of future research will examine and evaluate how well journalists convey to their audiences these future climate scenarios—and how journalists can draw on knowledge from communication studies to effectively report these scenarios in ways that resonate with citizens. (See “Journalistic Depictions of Uncertainty about Climate Change.”) **A second way to avoid false balance is for journalists to report a plurality of policy responses**. As well as fostering dialogue and debate about climate responses, journalists should—as in the reporting of climate science—cultivate sources that can outline different political responses to climate change. In particular, they can seek out sources that are what Roger Pielke (2007) called **honest brokers of policy alternatives**. These experts expand and clarify the scope of available policy options. Honest brokers allow decision makers to make policy choices based on more than just their own values or preferences. A collection of experts often come together to broker policy alternatives. It is these individuals or collectives that climate journalists must find and cultivate. The difficult process by which journalists find, evaluate, and report these policy options, globally and regionally, will be a fruitful avenue for future research and innovations in practice. Despite recent changes in the structure of the media, the important cultural role of journalism persists. The ability of news media to produce and oversee news about climate change and the environment has not entirely diminished. Their power continues to reside, in part, in how they legitimate and validate and verify forms of news and information produced by scientific organizations, political organizations, non-governmental organizations, and other news outlets. The news media continue to shape how stories are told and which stories have the most merit. The boundaries of journalism have expanded, but the rules and principles within this wider space remain rooted in the history of journalism (Powers, 2015). **In climate coverage, these principles are reconfigured, reshaped, and redefined variations of two proven concepts: objectivity and advocacy.**

#### Warming causes extinction and guarantees every other impact—only total economic makeover solves.

Spratt and Dunplop 19, David Spratt [Research Director for Breakthrough National Centre for Climate Restoration, Melbourne, and co-author of Climate Code Red: The case for emergency action] & Ian Dunlop [member of the Club of Rome. Formerly an international oil, gas and coal industry executive, chairman of the Australian Coal Association, chief executive of the Australian Institute of Company Directors, and chair of the Australian Greenhouse Office Experts Group on Emissions Trading 1998-2000], “Existential climate-related security risk: A scenario approach,” Breakthrough - National Centre for Climate Restoration, May 2019, pg. 8-10, beckert. Brackets in original text

- Warming magnifies every other impact – econ collapse, nuclear war, political instability, poverty – this means case turns the DA

2020–2030: Policy-makers fail to act on evidence that the current ​Paris Agreement path — in which global human-caused greenhouse emissions do not peak until 2030 — will lock in at least 3°C of warming. The case for a global, climate-emergency mobilisation of labour and resources to build a zero-emission economy and carbon drawdown in order to have a realistic chance of keeping warming well below 2°C is politely ignored. As projected by Xu and Ramanathan, by 2030 carbon dioxide levels have reached 437 parts per million — which is unprecedented in the last 20 million years — and warming reaches 1.6°C.18 2030–2050: Emissions peak in 2030, and start to fall consistent with an 80 percent reduction in fossil-fuel energy intensity by 2100 compared to 2010 energy intensity. This leads to warming of 2.4°C by 2050, consistent with the Xu and Ramanathan “baseline-fast” scenario.19 However, another 0.6°C of warming occurs — taking the total to 3°C by 2050 — due to the activation of a number of carbon-cycle feedbacks and higher levels of ice albedo and cloud feedbacks than current models assume. [It should be noted that this is far from an extreme scenario: the low-probability, high-impact warming (five percent probability) can exceed 3.5–4°C by 2050 in the Xu and Ramanathan scheme.] 2050: By 2050, there is broad scientific acceptance that system tipping-points for the West Antarctic Ice Sheet and a sea-ice-free Arctic summer were passed well before 1.5°C of warming, for the Greenland Ice Sheet well before 2°C, and for widespread permafrost loss and large-scale Amazon drought and dieback by 2.5°C. The “hothouse Earth” scenario has been realised, and Earth is headed for another degree or more of warming, especially since human greenhouse emissions are still significant.20 While sea levels have risen 0.5 metres by 2050, the increase may be 2–3 metres by 2100, and it is understood from historical analogues that seas may eventually rise by more than 25 metres. Thirty-five percent of the global land area, and 55 percent of the global population, are subject to more than 20 days a year of lethal heat conditions, beyond the threshold of human survivability. The destabilisation of the Jet Stream has very significantly affected the intensity and geographical distribution of the Asian and West African monsoons and, together with the further slowing of the Gulf Stream, is impinging on life support systems in Europe. North America suffers from devastating weather extremes including wildfires, heatwaves, drought and inundation. The summer monsoons in China have failed, and water flows into the great rivers of Asia are severely reduced by the loss of more than one-third of the Himalayan ice sheet. Glacial loss reaches 70 percent in the Andes, and rainfall in Mexico and central America falls by half. Semi-permanent El Nino conditions prevail. Aridification emerges over more than 30 percent of the world’s land surface. Desertification is severe in southern Africa, the southern Mediterranean, west Asia, the Middle East, inland Australia and across the south-western United States. Impacts: A number of ecosystems collapse, including coral reef systems, the Amazon rainforest and in the Arctic. Some poorer nations and regions, which lack capacity to provide artificially-cooled environments for their populations, become unviable. Deadly heat conditions persist for more than 100 days per year in West Africa, tropical South America, the Middle East and South-East Asia, contributing to more than a billion people being displaced from the tropical zone. Water availability decreases sharply in the most affected regions at lower latitudes (dry tropics and subtropics), affecting about two billion people worldwide. Agriculture becomes nonviable in the dry subtropics. Most regions in the world see a significant drop in food production and increasing numbers of extreme weather events, including heat waves, floods and storms. Food production is inadequate to feed the global population and food prices skyrocket, as a consequence of a one-fifth decline in crop yields, a decline in the nutrition content of food crops, a catastrophic decline in insect populations, desertification, monsoon failure and chronic water shortages, and conditions too hot for human habitation in significant food-growing regions. The lower reaches of the agriculturally-important river deltas such as the Mekong, Ganges and Nile are inundated, and significant sectors of some of the world’s most populous cities — including Chennai, Mumbai, Jakarta, Guangzhou, Tianjin, Hong Kong, Ho Chi Minh City, Shanghai, Lagos, Bangkok and Manila — are abandoned. Some small islands become uninhabitable. Ten percent of Bangladesh is inundated, displacing 15 million people. Even for 2°C of warming, more than a billion people may need to be relocated and In high-end scenarios, the scale of destruction is beyond our capacity to model, with a high likelihood of human civilisation coming to an end.21 National security consequences: For pragmatic reasons associated with providing only a sketch of this scenario, we take the conclusion of the ​Age of Consequences ‘Severe’ 3°C scenario developed by a group of senior US national-security figures in 2007 as appropriate for our scenario too: Massive nonlinear events in the global environment give rise to ​massive nonlinear societal events.​ In this scenario, nations around the world will be ​overwhelmed by the scale of change and pernicious challenges, such as pandemic disease. The internal cohesion of nations will be under great stress, including in the United States, both as a result of a dramatic rise in migration and changes in agricultural patterns and water availability. The flooding of coastal communities around the world, especially in the Netherlands, the United States, South Asia, and China, has the potential to challenge regional and even national identities.​ Armed conflict between nations over resources, such as the Nile and its tributaries, is likely and nuclear war is possible. The social consequences range from increased religious fervor to ​outright chaos.​ In this scenario, climate change provokes ​a permanent shift in the relationship of humankind to nature​’.22 (emphasis added) DISCUSSION This scenario provides a glimpse into a world of “outright chaos” on a path to the end of human civilisation and modern society as we have known it, in which the challenges to global security are simply overwhelming and political panic becomes the norm. Yet the world is currently completely unprepared to envisage, and even less deal with, the consequences of catastrophic climate change.23 What can be done to avoid such a probable but catastrophic future? It is clear from our preliminary scenario that dramatic action is required this decade if the “hothouse Earth” scenario is to be avoided. To reduce this risk and protect human civilisation, a massive global mobilisation of resources is needed in the coming decade to build a zero-emissions industrial system and set in train the restoration of a safe climate. This would be akin in scale to the World War II emergency mobilisation. There is an increasing awareness that such a response is now necessary. Prof. Kevin Anderson makes the case for a Marshall Plan-style construction of zero-carbon-dioxide energy supply and major electrification to build a zero-carbon industrial strategy by “a shift in productive capacity of society akin to that in World War II”.24 Others have warned that “only a drastic, economy-wide makeover within the next decade, consistent with limiting warming to 1.5°C”, would avoid the transition of the Earth System to the Pliocene-like conditions that prevailed 3-3.3 million years ago, when temperatures were ~3°C and sea levels 25 metres higher.25 It should be noted here that the 1.5° goal is not safe for a number of Earth System elements, including Arctic sea-ice, West Antarctica and coral reefs.

#### Solving warming is not all-or-nothing – every additional fraction of a degree is irreversible and costs millions of lives—prefer IPCC assessments that are the gold standard for warming consensus

David Wallace-Wells 19 [National Fellow at New America. He is deputy editor of New York Magazine, where he also writes frequently about climate and the near future of science and technology, including his widely read and debated 2017 cover story on worst-case scenarios for global warming], *The Uninhabitable Earth: A Story of the Future* (Kindle Edition: Allen Lane, 2019), pg. 8-30, beckert

* Every degree key – each bit 🡪 hundreds of millions of lives
* IPCC🡪 best ev b/c conservative estimate + still really big impact
* Now key – not reversible, feedback loops 🡪 speeds up later

There is almost no chance we will avoid that scenario. The Kyoto Protocol achieved, practically, nothing; in the twenty years since, despite all of our climate advocacy and legislation and progress on green energy, we have produced more emissions than in the twenty years before. In 2016, the Paris accords established two degrees as a global goal, and, to read our newspapers, that level of warming remains something like the scariest scenario it is responsible to consider; just a few years later, with no single industrial nation on track to meet its Paris commitments, two degrees looks more like a best-case outcome, at present hard to credit, with an entire bell curve of more horrific possibilities extending beyond it and yet shrouded, delicately, from public view.28 For those telling stories about climate, such horrific possibilities—and the fact that we had squandered our chance of landing anywhere on the better half of that curve—had become somehow unseemly to consider. The reasons are almost too many to count, and so half-formed they might better be called impulses. We chose not to discuss a world warmed beyond two degrees out of decency, perhaps; or simple fear; or fear of fearmongering; or technocratic faith, which is really market faith; or deference to partisan debates or even partisan priorities; or skepticism about the environmental Left of the kind I’d always had; or disinterest in the fates of distant ecosystems like I’d also always had. We felt confusion about the science and its many technical terms and hard-to-parse numbers, or at least an intuition that others would be easily confused about the science and its many technical terms and hard-to-parse numbers. We suffered from slowness apprehending the speed of change, or semi-conspiratorial confidence in the responsibility of global elites and their institutions, or obeisance toward those elites and their institutions, whatever we thought of them. Perhaps we felt unable to really trust scarier projections because we’d only just heard about warming, we thought, and things couldn’t possibly have gotten that much worse just since the first Inconvenient Truth; or because we liked driving our cars and eating our beef and living as we did in every other way and didn’t want to think too hard about that; or because we felt so “postindustrial” we couldn’t believe we were still drawing material breaths from fossil fuel furnaces. Perhaps it was because we were so sociopathically good at collating bad news into a sickening evolving sense of what constituted “normal,” or because we looked outside and things seemed still okay. Because we were bored with writing, or reading, the same story again and again, because climate was so global and therefore nontribal it suggested only the corniest politics, because we didn’t yet appreciate how fully it would ravage our lives, and because, selfishly, we didn’t mind destroying the planet for others living elsewhere on it or those not yet born who would inherit it from us, outraged. Because we had too much faith in the teleological shape of history and the arrow of human progress to countenance the idea that the arc of history would bend toward anything but environmental justice, too. Because when we were being really honest with ourselves we already thought of the world as a zero-sum resource competition and believed that whatever happened we were probably going to continue to be the victors, relatively speaking anyway, advantages of class being what they are and our own luck in the natalist lottery being what it was. Perhaps we were too panicked about our own jobs and industries to fret about the future of jobs and industry; or perhaps we were also really afraid of robots or were too busy looking at our new phones; or perhaps, however easy we found the apocalypse reflex in our culture and the path of panic in our politics, we truly had a good-news bias when it came to the big picture; or, really, who knows why—there are so many aspects to the climate kaleidoscope that transforms our intuitions about environmental devastation into an uncanny complacency that it can be hard to pull the whole picture of climate distortion into focus. But we simply wouldn’t, or couldn’t, or anyway didn’t look squarely in the face ﻿of the science. This is not a book about the science of warming; it is about what warming means to the way we live on this planet. But what does that science say? It is complicated research, because it is built on two layers of uncertainty: what humans will do, mostly in terms of emitting greenhouse gases, and how the climate will respond, both through straightforward heating and a variety of more complicated, and sometimes contradictory, feedback loops. But even shaded by those uncertainty bars it is also very clear research, in fact terrifyingly clear. The United Nations’ Intergovernmental Panel on Climate Change (IPCC) offers the gold-standard assessments of the state of the planet and the likely trajectory for climate change—gold-standard, in part, because it is conservative, integrating only new research that passes the threshold of inarguability. A new report is expected in 2022, but the most recent one says that if we take action on emissions soon, instituting immediately all of the commitments made in the Paris accords but nowhere yet actually implemented, we are likely to get about 3.2 degrees of warming, or about three times as much warming as the planet has seen since the beginning of industrialization—bringing the unthinkable collapse of the planet’s ice sheets not just into the realm of the real but into the present.29, 30 That would eventually flood not just Miami and Dhaka but Shanghai and Hong Kong and a hundred other cities around the world.31 The tipping point for that collapse is said to be around two degrees; according to several recent studies, even a rapid cessation of carbon emissions could bring us that amount of warming by the end of the century.32 The assaults of climate change do not end at 2100 just because most modeling, by convention, sunsets at that point. This is why some studying global warming call the hundred years to follow the “century of hell.”33 Climate change is fast, much faster than it seems we have the capacity to recognize and acknowledge; but it is also long, almost longer than we can truly imagine. In reading about warming, you will often come across analogies from the planetary record: the last time the planet was this much warmer, the logic runs, sea levels were here. These conditions are not coincidences. The sea level was there largely because the planet was that much warmer, and the geologic record is the best model we have for understanding the very complicated climate system and gauging just how much damage will come from turning up the temperature by two or four or six degrees. Which is why it is especially concerning that recent research into the deep history of the planet suggests that our current climate models may be underestimating the amount of warming we are due for in 2100 by as much as half.34 In other words, temperatures could rise, ultimately, by as much as double what the IPCC predicts. Hit our Paris emissions targets and we may still get four degrees of warming, meaning a green Sahara and the planet’s tropical forests transformed into fire-dominated savanna.35 The authors of one recent paper suggested the warming could be more dramatic still—slashing our emissions could still bring us to four or five degrees Celsius, a scenario they said would pose severe risks to the habitability of the entire planet. “Hothouse Earth,” they called it.36 Because these numbers are so small, we tend to trivialize the differences between them—one, two, four, five. Human experience and memory offer no good analogy for how we should think of those thresholds, but, as with world wars or recurrences of cancer, you don’t want to see even one. At two degrees, the ice sheets will begin their collapse, 400 million more people will suffer from water scarcity, major cities in the equatorial band of the planet will become unlivable, and even in the northern latitudes heat waves will kill thousands each summer.37, 38 There would be thirty-two times as many extreme heat waves in India, and each would last five times as long, exposing ninety-three times more people.39 This is our best-case scenario. At three degrees, southern Europe would be in permanent drought, and the average drought in Central America would last nineteen months longer and in the Caribbean twenty-one months longer. In northern Africa, the figure is sixty months longer—five years. The areas burned each year by wildfires would double in the Mediterranean and sextuple, or more, in the United States. At four degrees, there would be eight million more cases of dengue fever each year in Latin America alone and close to annual global food crises.41 There could be 9 percent more heat-related deaths.40 Damages from river flooding would grow thirtyfold in Bangladesh, twentyfold in India, and as much as sixtyfold in the United Kingdom. In certain places, six climate-driven natural disasters could strike simultaneously, and, globally, damages could pass $600 trillion—more than twice the wealth as exists in the world today. Conflict and warfare could double. Even if we pull the planet up short of two degrees by 2100, we will be left with an atmosphere that contains 500 parts per million of carbon—perhaps more. The last time that was the case, sixteen million years ago, the planet was not two degrees warmer; it was somewhere between five and eight, giving the planet about 130 feet of sea-level rise, enough to draw a new American coastline as far west as I-95.42 Some of these processes take thousands of years to unfold, but they are also irreversible, and therefore effectively permanent. You might hope to simply reverse climate change; you can’t. It will outrun all of us. This is part of what makes climate change what the theorist Timothy Morton calls a “hyperobject”—a conceptual fact so large and complex that, like the internet, it can never be properly comprehended.43 There are many features of climate change—its size, its scope, its brutality—that, alone, satisfy this definition; together they might elevate it into a higher and more incomprehensible conceptual ﻿category yet. But time is perhaps the most mind-bending feature, the worst outcomes arriving so long from now that we reflexively discount their reality. Yet those outcomes promise to mock us and our own sense of the real in return. The ecological dramas we have unleashed through our land use and by burning fossil fuels—slowly for about a century and very rapidly for only a few decades—will play out over many millennia, in fact over a longer span of time than humans have even been around, performed in part by creatures and in environments we do not yet even know, ushered onto the world stage by the force of warming. And so, in a convenient cognitive bargain, we have chosen to consider climate change only as it will present itself this century. By 2100, the United Nations says, we are due for about 4.5 degrees of warming, following the path we are on today.44 That is, farther from the Paris track than the Paris track is from the two-degree threshold of catastrophe, which it more than doubles. As Naomi Oreskes has noted, there are far too many uncertainties in our models to take their predictions as gospel.45 Just running those models many times, as Gernot Wagner and Martin Weitzman do in their book Climate Shock, yields an 11 percent chance we overshoot six degrees.46 Recent work by the Nobel laureate William Nordhaus suggests that better-than-anticipated economic growth means better than one-in-three odds that our emissions will exceed the U.47N.’s worst-case “business as usual” scenario. In other words, a temperature rise of five degrees or possibly more. The upper end of the probability curve put forward by the U.N. to estimate the end-of-the-century, business-as-usual scenario—the worst-case outcome of a worst-case emissions path—puts us at eight degrees. At that temperature, humans at the equator and in the tropics would not be able to move around outside without dying.48 In that world, eight degrees warmer, direct heat effects would be the least of it: the oceans would eventually swell two hundred feet higher, flooding what are now two-thirds of the world’s major cities; hardly any land on the planet would be capable of efficiently producing any of the food we now eat; forests would be roiled by rolling storms of fire, and coasts would be punished by more and more intense hurricanes; the suffocating hood of tropical disease would reach northward to enclose parts of what we now call the Arctic; probably about a third of the planet would be made unlivable by direct heat; and what are today literally unprecedented and intolerable droughts and heat waves would be the quotidian condition of whatever human life was able to endure.49, 50, 51, 52 We will, almost certainly, avoid eight degrees of warming; in fact, several recent papers have suggested the climate is actually less sensitive to emissions than we’d thought, and that even the upper bound of a business-as-usual path would bring us to about five degrees, with a likely destination around four.53 But five degrees is nearly as unthinkable as eight, and four degrees not much better: the world in a permanent food deficit, the Alps as arid as the Atlas Mountains.54 Between that scenario and the world we live in now lies only the open question of human response. Some amount of further warming is already baked in, thanks to the protracted processes by which the planet adapts to greenhouse gas. But all of those paths projected from the present—to two degrees, to three, to four, five, or even eight—will be carved overwhelmingly by what we choose to do now. There is nothing stopping us from four degrees other than our own will to change course, which we have yet to display. Because the planet is as big as it is, and as ecologically diverse; because humans have proven themselves an adaptable species, and will likely continue to adapt to outmaneuver a lethal threat; and because the devastating effects of warming will soon become too extreme to ignore, or deny, if they haven’t already; because of all that, it is unlikely that climate change will render the planet truly uninhabitable. But if we do nothing about carbon emissions, if the next thirty years of industrial activity trace the same arc upward as the last thirty years have, whole regions will become unlivable by any standard we have today as soon as the end of this century. ﻿A few years ago, E. O. Wilson proposed a term, “Half-Earth,” to help us think through how we might adapt to the pressures of a changing climate, letting nature run its rehabilitative course on half the planet and sequestering humanity in the remaining, habitable half of the world.55 The fraction may be smaller than that, possibly considerably, and not by choice; the subtitle of his book was Our Planet’s Fight for Life. On longer timescales, the even-bleaker outcome is possible, too—the livable planet darkening as it approaches a human dusk. It would take a spectacular coincidence of bad choices and bad luck to make that kind of zero earth possible within our lifetime. But the fact that we have brought that nightmare eventuality into play at all is perhaps the overwhelming cultural and historical fact of the modern era—what historians of the future will likely study about us, and what we’d have hoped the generations before ours would have had the foresight to focus on, too. Whatever we do to stop warming, and however aggressively we act to protect ourselves from its ravages, we will have pulled the devastation of human life on Earth into view—close enough that we can see clearly what it would look like and know, with some degree of precision, how it will punish our children and grandchildren. Close enough, in fact, that we are already beginning to feel its effects ourselves, when we do not turn away. ﻿It is almost hard to believe just how much has happened and how quickly. In the late summer of 2017, three major hurricanes arose in the Atlantic at once, proceeding at first along the same route as though they were battalions of an army on the march.56 Hurricane Harvey, when it struck Houston, delivered such epic rainfall it was described in some areas as a “500,000-year event”—meaning that we should expect that amount of rain to hit that area once every five hundred millennia.57 Sophisticated consumers of environmental news have already learned how meaningless climate change has rendered such terms, which were meant to describe storms that had a 1-in-500,000 chance of striking in any given year. But the figures do help in this way: to remind us just how far global warming has already taken us from any natural-disaster benchmark our grandparents would have recognized. To dwell on the more common 500-year figure just for a moment, it would mean a storm that struck once during the entire history of the Roman Empire. Five hundred years ago, there were no English settlements across the Atlantic, so we are talking about a storm that should hit just once as Europeans arrived and established colonies, as colonists fought a revolution and Americans a civil war and two world wars, as their descendants established an empire of cotton on the backs of slaves, freed them, and then brutalized their descendants, industrialized and postindustrialized, triumphed in the Cold War, ushered in the “end of history,” and witnessed, just a decade later, its dramatic return. One storm in all that time, is what the meteorological record has taught us to expect. Just one. Harvey was the third such flood to hit Houston since 2015.58 And the storm struck, in places, with an intensity that was supposed to be a thousand times rarer still. That same season, an Atlantic hurricane hit Ireland, 45 million were flooded from their homes in South Asia, and unprecedented wildfires tilled much of California into ash.59, 60 And then there was the new category of quotidian nightmare, climate change inventing the once-unimaginable category of obscure natural disasters—crises so large they would once have been inscribed in folklore for centuries today passing across our horizons ignored, overlooked, or forgotten. In 2016, a “thousand-year flood” drowned small-town Ellicott City, Maryland, to take but one example almost at random; it was followed, two years later, in the same small town, by another.61 One week that summer of 2018, dozens of places all over the world were hit with record heat waves, from Denver to Burlington to Ottawa; from Glasgow to Shannon to Belfast; from Tbilisi, in Georgia, and Yerevan, in Armenia, to whole swaths of southern Russia.62 The previous month, the daytime temperature of one city in Oman reached above 121 degrees Fahrenheit, and did not drop below 108 all night, and in Quebec, Canada, fifty-four died from the heat.63 That same week, one hundred major wildfires burned in the American West, including one in California that grew 4,000 acres in one day, and another, in Colorado, that produced a volcano-like 300-foot eruption of flames, swallowing an entire subdivision and inventing a new term, “fire tsunami,” along the way.64, 65, 66 On the other side of the planet, biblical rains flooded Japan, where 1.2 million were evacuated from their homes.67 Later that summer, Typhoon Mangkhut forced the evacuation of 2.45 million from mainland China, the same week that Hurricane Florence struck the Carolinas, turning the port city of Wilmington briefly into an island and flooding large parts of the state with hog manure and coal ash.68, 69, 70 Along the way, the winds of Florence produced dozens of tornadoes across the region.71 The previous month, in India, the state of Kerala was hit with its worst floods in almost a hundred years.72 That October, a hurricane in the Pacific wiped Hawaii’s East Island entirely off the map.73 And in November, which has traditionally marked the beginning of the rainy season in California, the state was hit instead with the deadliest fire in its history—the Camp Fire, which scorched several hundred square miles outside of Chico, killing dozens and leaving many more missing in a place called, proverbially, Paradise.74 The devastation was so complete, you could almost forget the Woolsey Fire, closer to Los Angeles, which burned at the same time and forced the sudden evacuation of 170,000. It is tempting to look at these strings of disasters and think, Climate change is here. And one response to seeing things long predicted actually come to pass is to feel that we have settled into a new era, with everything transformed. In fact, that is how California governor Jerry Brown described the state of things in the midst of the state’s wildfire disaster: “a new normal.”75 The truth is actually much scarier. That is, the end of normal; never normal again. We have already exited the state of environmental conditions that allowed the human animal to evolve in the first place, in an unsure and unplanned bet on just what that animal can endure. The climate system that raised us, and raised everything we now know as human culture and civilization, is now, like a parent, dead. And the climate system we have been observing for the last several years, the one that has battered the planet again and again, is not our bleak future in preview. It would be more precise to say that it is a product of our recent climate past, already passing behind us into a dustbin of environmental nostalgia. There is no longer any such thing as a “natural disaster,” but not only will things get worse; technically speaking, they have already gotten worse. Even if, miraculously, humans immediately ceased emitting carbon, we’d still be due for some additional warming from just the stuff we’ve put into the air already. And of course, with global emissions still increasing, we’re very far from zeroing out on carbon, and therefore very far from stalling climate change. The devastation we are now seeing all around us is a beyond-best-case scenario for the future of warming and all the climate disasters it will bring. ﻿What that means is that we have not, at all, arrived at a new equilibrium. It is more like we’ve taken one step out on the plank off a pirate ship. Perhaps because of the exhausting false debate about whether climate change is “real,” too many of us have developed a misleading impression that its effects are binary. But global warming is not “yes” or “no,” nor is it “today’s weather forever” or “doomsday tomorrow.” It is a function that gets worse over time as long as we continue to produce greenhouse gas. And so the experience of life in a climate transformed by human activity is not just a matter of stepping from one stable ecosystem into another, somewhat worse one, no matter how degraded or destructive the transformed climate is. The effects will grow and build as the planet continues to warm: from 1 degree to 1.5 to almost certainly 2 degrees and beyond. The last few years of climate disasters may look like about as much as the planet can take. In fact, we are only just entering our brave new world, one that collapses below us as soon as we set foot on it. Many of these new disasters arrived accompanied by debate about their cause—about how much of what they have done to us comes from what we have done to the planet. For those hoping to better understand precisely how a monstrous hurricane arises out of a placid ocean, these inquiries are worthwhile, but for all practical purposes the debate yields no real meaning or insight. A particular hurricane may owe 40 percent of its force to anthropogenic global warming, the evolving models might suggest, and a particular drought may be half again as bad as it might have been in the seventeenth century. But climate change is not a discrete clue we can find at the scene of a local crime—one hurricane, one heat wave, one famine, one war. Global warming isn’t a perpetrator; it’s a conspiracy. We all live within climate and within all the changes we have produced in it, which enclose us all and everything we do. If hurricanes of a certain force are now five times as likely as in the pre-Columbian Caribbean, it is parsimonious to the point of triviality to argue over whether this one or that one was “climate-caused.” All hurricanes now unfold in the weather systems we have wrecked on their behalf, which is why there are more of them, and why they are stronger. The same is true for wildfires: this one or that one may be “caused” by a cookout or a downed power line, but each is burning faster, bigger, and longer because of global warming, which gives no reprieve to fire season. Climate change isn’t something happening here or there but everywhere, and all at once. And unless we choose to halt it, it will never stop. Over the past few decades, the term “Anthropocene” has climbed out of academic discourse and into the popular imagination—a name given to the geologic era we live in now, and a way to signal that it is a new era, defined on the wall chart of deep history by human intervention. One problem with the term is that it implies a conquest of nature, even echoing the biblical “dominion.” But however sanguine you might be about the proposition that we have already ravaged the natural world, which we surely have, it is another thing entirely to consider the possibility that we have only provoked it, engineering first in ignorance and then in denial a climate system that will now go to war with us for many centuries, perhaps until it destroys us. That is what Wally Broecker, the avuncular oceanographer, means when he calls the planet an “angry beast.”76 You could also go with “war machine.” Each day we arm it more. The assaults will not be discrete—this is another climate delusion. Instead, they will produce a new kind of cascading violence, waterfalls and avalanches of devastation, the planet pummeled again and again, with increasing intensity and in ways that build on each other and undermine our ability to respond, uprooting much of the landscape we have taken for granted, for centuries, as the stable foundation on which we walk, build homes and highways, shepherd our children through schools and into adulthood under the promise of safety—and subverting the promise that the world we have engineered and built for ourselves, out of nature, will also protect us against it, rather than conspiring with disaster against its makers. Consider those California wildfires. In March 2018, Santa Barbara County issued mandatory evacuation orders for those living in Montecito, Goleta, Santa Barbara, Summerland, and Carpinteria—where the previous December’s fires had hit hardest. It was the fourth evacuation order precipitated by a climate event in the county in just three months, but only the first had been for fire.77 The others were for mudslides ushered into possibility by that fire, one of the toniest communities in the most glamorous state of the world’s preeminently powerful country upended by fear that their toy vineyards and hobby stables, their world-class beaches and lavishly funded public schools, would be inundated by rivers of mud, the community as thoroughly ravaged as the sprawling camps of temporary shacks housing Rohingya refugees from Myanmar in the monsoon region of Bangladesh.78 It was. More than a dozen died, including a toddler swept away by mud and carried miles down the mountainslope to the sea; schools closed and highways flooded, foreclosing the routes of emergency vehicles and making the community an inland island, as if behind a blockade, choked off by a mud noose.79 Some climate cascades will unfold at the global level—cascades so large their effects will seem, by the curious legerdemain of environmental change, imperceptible. A warming planet leads to melting Arctic ice, which means less sunlight reflected back to the sun and more absorbed by a planet warming faster still, which means an ocean less able to absorb atmospheric carbon and so a planet warming faster still. A warming planet will also melt Arctic permafrost, which contains 1.8 trillion tons of carbon, more than twice as much as is currently suspended in the earth’s atmosphere, and some of which, when it thaws and is released, may evaporate as methane, which is thirty-four times as powerful a greenhouse-gas warming blanket as carbon dioxide when judged on the timescale of a century; when﻿ judged on the timescale of two decades, it is eighty-six times as powerful.80, 81 A hotter planet is, on net, bad for plant life, which means what is called “forest dieback”—the decline and retreat of jungle basins as big as countries and woods that sprawl for so many miles they used to contain whole folklores—which means a dramatic stripping-back of the planet’s natural ability to absorb carbon and turn it into oxygen, which means still hotter temperatures, which means more dieback, and so on. Higher temperatures means more forest fires means fewer trees means less carbon absorption, means more carbon in the atmosphere, means a hotter planet still—and so on. A warmer planet means more water vapor in the atmosphere, and, water vapor being a greenhouse gas, this brings higher temperatures still—and so on. Warmer oceans can absorb less heat, which means more stays in the air, and contain less oxygen, which is doom for phytoplankton—which does for the ocean what plants do on land, eating carbon and producing oxygen—which leaves us with more carbon, which heats the planet further. And so on. These are the systems climate scientists call “feedbacks”; there are more.82 Some work in the other direction, moderating climate change. But many more point toward an acceleration of warming, should we trigger them. And just how these complicated, countervailing systems will interact—what effects will be exaggerated and what undermined by feedbacks—is unknown, which pulls a dark cloud of uncertainty over any effort to plan ahead for the climate future. We know what a best-case outcome for climate change looks like, however unrealistic, because it quite closely resembles the world as we live on it today. But we have not yet begun to contemplate those cascades that may bring us to the infernal range of the bell curve. Other cascades are regional, collapsing on human communities and buckling them where they fall. These can be literal cascades—human-triggered avalanches are on the rise, with 50,000 people killed by avalanches globally between 2004 and 2016.83 In Switzerland, climate change has unleashed a whole new kind, thanks to what are called “rain-on-snow” events, which also caused the overflow of the Oroville Dam in Northern California and the 2013 flood of Alberta, Canada, with damages approaching $5 billion.84 But there are other kinds of cascade, too. Climate-driven water shortages or crop failures push climate refugees into nearby regions already struggling with resource scarcity. Sea-level rise inundates cropland with more and more saltwater flooding, transforming agricultural areas into brackish sponges no longer able to adequately feed those living off them; flooding power plants, knocking regions offline just as electricity may be needed most; and crippling chemical and nuclear plants, which, malfunctioning, breathe out their toxic plumes. The rains that followed the Camp Fire flooded the tent cities hastily assembled for the first disaster’s refugees. In the case of the Santa Barbara mudslides, drought produced a state full of dry brush ripe for a spark; then a year of anomalously monsoonish rain produced only more growth, and wildfires tore through the landscape, leaving a mountainside without much plant life to hold in place the millions of tons of loose earth that make up the towering coastal range where the clouds tend to gather and the rain first falls. Some of those watching from afar wondered, incredulously, how a mudslide could kill so many. The answer is, the same way as hurricanes or tornadoes—by weaponizing the environment, whether “man-made” or “natural.” Wind disasters do not kill by wind, however brutal it gets, but by tugging trees out of earth and transforming them into clubs, making power lines into loose whips and electrified nooses, collapsing homes on cowering residents, and turning cars into tumbling boulders. And they kill slowly, too, by cutting off food delivery and medical supplies, making roads impassable even to first responders, knocking out phone lines and cell towers so that the ill and elderly must suffer, and hope to endure, in silence and without aid. Most of the world is not Santa Barbara, with its Mission-style impasto of infinite-seeming wealth, and in the coming decades many of the most punishing climate horrors will indeed hit those least able to respond and recover. This is what is often called the problem of environmental justice; a sharper, less gauzy phrase would be “climate caste system.” The problem is acute within countries, even wealthy ones, where the poorest are those who live in the marshes, the swamps, the floodplains, the inadequately irrigated places with the most vulnerable infrastructure—altogether an unwitting environmental apartheid. Just in Texas, 500,000 poor Latinos live in shantytowns called “colonias” with no drainage systems to deal with increased flooding.85 The cleavage is even sharper globally, where the poorest countries will suffer more in our hot new world. In fact, with one exception—Australia—countries with lower GDPs will warm the most.86 That is notwithstanding the fact that much of the global south has not, to this point, defiled the atmosphere of the planet all that much. This is one of the many historical ironies of climate change that would better be called cruelties, so merciless is the suffering they will inflict. But disproportionately as it will fall on the world’s least, the devastation of global warming cannot be easily quarantined in the developing world, as much as those in the Northern Hemisphere would probably, and not to our credit, prefer it. Climate disaster is too indiscriminate for that. In fact, the belief that climate could be plausibly governed, or managed, by any institution or human instrument presently at hand is another wide-eyed climate delusion. The planet survived many millennia without anything approaching a world government, in fact endured nearly the entire span of human civilization that way, organized into competitive tribes and fiefdoms and kingdoms and nation-states, and only began to build something resembling a cooperative blueprint, very piecemeal, after brutal world wars—in the ﻿form of the League of Nations and United Nations and European Union and even the market fabric of globalization, whatever its flaws still a vision of cross-national participation, imbued with the neoliberal ethos that life on Earth was a positive-sum game. If you had to invent a threat grand enough, and global enough, to plausibly conjure into being a system of true international cooperation, climate change would be it—the threat everywhere, and overwhelming, and total. And yet now, just as the need for that kind of cooperation is paramount, indeed necessary for anything like the world we know to survive, we are only unbuilding those alliances—recoiling into nationalistic corners and retreating from collective responsibility and from each other. That collapse of trust is a cascade, too. ﻿Just how completely the world below our feet will become unknown to us is not yet clear, and how we register its transformation remains an open question. One legacy of the environmentalist creed that long prized the natural world as an otherworldly retreat is that we see its degradation as a sequestered story, unfolding separately from our own modern lives—so separately that the degradation acquires the comfortable contours of parable, like pages from Aesop, aestheticized even when we know the losses as tragedy. Climate change could soon mean that, in the fall, trees may simply turn brown, and so we will look differently at entire schools of painting, which stretched for generations, devoted to best capturing the oranges and reds we can no longer see ourselves out the windows of our cars as we drive along our highways.87 The coffee plants of Latin America will no longer produce fruit; beach homes will be built on higher and higher stilts and still be drowned.88 In many cases, it is better to use the present tense. In just the last forty years, according to the World Wildlife Fund, more than half of the world’s vertebrate animals have died; in just the last twenty-five, one study of German nature preserves found, the flying insect population declined by three-quarters.89, 90 The delicate dance of flowers and their pollinators has been disrupted, as have the migration patterns of cod, which have fled up the Eastern Seaboard toward the Arctic, evading the communities of fishermen that fed on them for centuries; as have the hibernation patterns of black bears, many of which now stay awake all winter.91, 92, 93 Species individuated over millions of years of evolution but forced together by climate change have begun to mate with one another for the first time, producing a whole new class of hybrid species: the pizzly bear, the coy-wolf.94 The zoos are already natural history museums, the children’s books already out of date. Older fables, too, will be remade: the story of Atlantis, having endured and enchanted for several millennia, will compete with the real-time sagas of the Marshall Islands and Miami Beach, each sinking over time into snorkelers’ paradises; the strange fantasy of Santa and his polar workshop will grow eerier still in an Arctic of ice-free summers; and there is a terrible poignancy in contemplating how desertification of the entire Mediterranean Basin will change our reading of the Odyssey, or how it will discolor the shine of Greek islands for dust from the Sahara to permanently blanket their skies, or how it will recast the meaning of the Pyramids for the Nile to be dramatically drained.95, 96, 97 We will think of the border with Mexico differently, presumably, when the Rio Grande is a line traced through a dry riverbed—the Rio Sand, it’s already been called.98 The imperious West has spent five centuries looking down its nose at the plight of those living within the pale of tropical disease, and one wonders how that will change when mosquitoes carrying malaria and dengue are flying through the streets of Copenhagen and Chicago, too. But we have for so long understood stories about nature as allegories that we seem unable to recognize that the meaning of climate change is not sequestered in parable. It encompasses us; in a very real way it governs us—our crop yields, our pandemics, our migration patterns and civil wars, crime waves and domestic assaults, hurricanes and heat waves and rain bombs and megadroughts, the shape of our economic growth and everything that flows downstream from it, which today means nearly everything. Eight hundred million in South Asia alone, the World Bank says, would see their living conditions sharply diminish by 2050 on the current emissions track, and perhaps a climate slowdown will even reveal the bounty of what Andreas Malm calls fossil capitalism to be an illusion, sustained over just a few centuries by the arithmetic of adding the energy value of burned fossil fuels to what had been, before wood and coal and oil, an eternal Malthusian trap.99, 100 In which case, we would have to retire the intuition that history will inevitably extract material progress from the planet, at least in any reliable or global pattern, and come to terms, somehow, with just how pervasively that intuition ruled even our inner lives, often tyrannically. Adaptation to climate change is often viewed in terms of market trade-offs, but in the coming decades the trade will work in the opposite direction, with relative prosperity a benefit of more aggressive action. Every degree of warming, it’s been estimated, costs a temperate country like the United States about one percentage point of GDP, and according to one recent paper, at 1.5 degrees the world would be $20 trillion richer than at 2 degrees.101, 102 Turn the dial up another degree or two, and the costs balloon—the compound interest of environmental catastrophe. 3.7 degrees of warming would produce $551 trillion in damages, research suggests; total worldwide wealth is today about $280 trillion.103, 104 Our current emissions trajectory takes us over 4 degrees by 2100; multiply that by that 1 percent of GDP and you have almost entirely wiped out the very possibility of economic growth, which has not topped 5 percent globally in over forty years.105 A fringe group of alarmed academics call this prospect “steady-state economics,” but it ultimately suggests a more ﻿complete retreat from economics as an orienting beacon, and from growth as the lingua franca through which modern life launders all of its aspirations.106 “Steady-state” also gives a name to the creeping panic that history may be less progressive, as we’ve come to believe really only over the last several centuries, than cyclical, as we were sure it was for the many millennia before. More than that: in the vision steady-state economics projects of a state-of-nature competitive scramble, everything from politics to trade and war seems brutally zero-sum. For centuries we have looked to nature as a mirror onto which to first project, then observe, ourselves. But what is the moral? There is nothing to learn from global warming, because we do not have the time, or the distance, to contemplate its lessons; we are after all not merely telling the story but living it. That is, trying to; the threat is immense. How immense? One 2018 paper sketches the math in horrifying detail. In the journal Nature Climate Change, a team led by Drew Shindell tried to quantify the suffering that would be avoided if warming was kept to 1.5 degrees, rather than 2 degrees—in other words, how much additional suffering would result from just that additional half-degree of warming. Their answer: 150 million more people would die from air pollution alone in a 2-degree warmer world than in a 1.1075-degree warmer one. Later that year, the IPCC raised the stakes further: in the gap between 1.1085 degrees and 2, it said, hundreds of millions of lives were at stake. Numbers that large can be hard to grasp, but 150 million is the equivalent of twenty-five Holocausts. It is three times the size of the death toll of the Great Leap Forward—the largest nonmilitary death toll humanity has ever produced. It is more than twice the greatest death toll of any kind, World War II. The numbers don’t begin to climb only when we hit 1.5 degrees, of course. As should not surprise you, they are already accumulating, at a rate of at least seven million deaths, from air pollution alone, each year—an annual Holocaust, pursued and prosecuted by what brand of nihilism? This is what is meant when climate change is called an “existential crisis”—a drama we are now haphazardly improvising between two hellish poles, in which our best-case outcome is death and suffering at the scale of twenty-five Holocausts, and the worst-case outcome puts us on the brink of extinction.109 Rhetoric often fails us on climate because the only factually appropriate language is of a kind we’ve been trained, by a buoyant culture of sunny-side-up optimism, to dismiss, categorically, as hyperbole. Here, the facts are hysterical, and the dimensions of the drama that will play out between those poles incomprehensibly large—large enough to enclose not just all of present-day humanity but all of our possible futures, as well. Global warming has improbably compressed into two generations the entire story of human civilization. First, the project of remaking the planet so that it is undeniably ours, a project whose exhaust, the poison of emissions, now casually works its way through millennia of ice so quickly you can see the melt with a naked eye, destroying the environmental conditions that have held stable and steadily governed for literally all of human history. That has been the work of a single generation. The second generation faces a very different task: the project of preserving our collective future, forestalling that devastation and engineering an alternate path. There is simply no analogy to draw on, outside of mythology and theology—and perhaps the Cold War prospect of mutually assured destruction. Few feel like gods in the face of warming, but that the totality of climate change should make us feel so passive—that is another of its delusions. In folklore and comic books and church pews and movie theaters, stories about the fate of the earth often perversely counsel passivity in their audiences, and perhaps it should not surprise us that the threat of climate change is no different. By the end of the Cold War, the prospect of nuclear winter had clouded every corner of our pop culture and psychology, a pervasive nightmare that the human experiment might be brought to an end by two jousting sets of proud, rivalrous tacticians, just a few sets of twitchy hands hovering over the planet’s self-destruct buttons. The threat of climate change is more dramatic still, and ultimately more democratic, with responsibility shared by each of us even as we shiver in fear of it; and yet we have processed that threat only in parts, typically not concretely or explicitly, displacing certain anxieties and inventing others, choosing to ignore the bleakest features of our possible future and letting our political fatalism and technological faith blur, as though we’d gone cross-eyed, into a remarkably familiar consumer fantasy: that someone else will fix the problem for us, at no cost. Those more panicked are often hardly less complacent, living instead through climate fatalism as though it were climate optimism. Over the last few years, as the planet’s own environmental rhythms have seemed to grow more fatalistic, skeptics have found themselves arguing not that climate change isn’t happening, since extreme weather has made that undeniable, but that its causes are unclear—suggesting that the changes we are seeing are the result of natural cycles rather than human activities and interventions. It is a very strange argument; if the planet is warming at a terrifying pace and on a horrifying scale, it should transparently concern us more, rather than less, that the warming is beyond our control, possibly even our comprehension. That we know global warming is our doing should be a comfort, not a cause for despair, however incomprehensively large and complicated we find the processes that have brought it into being; that we know we are, ourselves, responsible for all of its punishing effects ﻿should be empowering, and not just perversely. Global warming is, after all, a human invention. And the flip side of our real-time guilt is that we remain in command. No matter how out-of-control the climate system seems—with its roiling typhoons, unprecedented famines and heat waves, refugee crises and climate conflicts—we are all its authors. And still writing.

#### Err on the side of caution – models underestimate warming, and significant climatic changes make fast runaway warming likely – the tipping point could sneak up on us

* Warming is not linear – certain combos of events might speed it up unexpectedly 🡪 fast, extreme action is necessary to solve

Wuebbles et al. 17, D.J., D.W. Fahey, K.A. Hibbard, B. DeAngelo, S. Doherty, K. Hayhoe, R. Horton, J.P. Kossin, P.C. Taylor, A.M. Waple, and C.P. Weaver, 2017: Executive summary. In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 12-34, doi: 10.7930/J0DJ5CTG. Pg. 32-33, beckert

There is a Significant Possibility for Unanticipated Changes Humanity’s effect on the Earth system, through the large-scale combustion of fossil fuels and widespread deforestation and the resulting release of carbon dioxide (CO2) into the atmosphere, as well as through emissions of other greenhouse gases and radiatively active substances from human activities, is unprecedented. There is significant potential for humanity’s effect on the planet to result in unanticipated surprises and a broad consensus that the further and faster the Earth system is pushed towards warming, the greater the risk of such surprises. There are at least two types of potential surprises: compound events, where multiple extreme climate events occur simultaneously or sequentially (creating greater overall impact), and critical threshold or tipping point events, where some threshold is crossed in the climate system (that leads to large impacts). The probability of such surprises—some of which may be abrupt and/or irreversible—as well as other more predictable but difficult-to-manage impacts, increases as the influence of human activities on the climate system increases. (Ch. 15) Unanticipated and difficult or impossible-to-manage changes in the climate system are possible throughout the next century as critical thresholds are crossed and/or multiple climate-related extreme events occur simultaneously. (Ch. 15) • Positive feedbacks (self-reinforcing cycles) within the climate system have the potential to accelerate human-induced climate change and even shift the Earth’s climate system, in part or in whole, into new states that are very different from those experienced in the recent past (for example, ones with greatly diminished ice sheets or different large-scale patterns of at- mosphere or ocean circulation). Some feedbacks and potential state shifts can be modeled and quantified; others can be modeled or identified but not quantified; and some are probably still unknown. (Very high confidence in the potential for state shifts and in the incompleteness of knowledge about feedbacks and potential state shifts). (Ch. 15) • The physical and socioeconomic impacts of compound extreme events (such as simultaneous heat and drought, wildfires associated with hot and dry conditions, or flooding associated with high precipitation on top of snow or waterlogged ground) can be greater than the sum of the parts (very high confidence). Few analyses consider the spatial or temporal correlation between extreme events. (Ch. 15) • While climate models incorporate important climate processes that can be well quantified, they do not include all of the processes that can contribute to feedbacks (Ch. 2), compound ex- treme events, and abrupt and/or irreversible changes. For this reason, future changes outside the range projected by climate models cannot be ruled out (very high confidence). Moreover, the systematic tendency of climate models to underestimate temperature change during warm paleoclimates suggests that climate models are more likely to underestimate than to overestimate the amount of long-term future change (medium confidence). (Ch. 15)

### Plan

#### In a democracy, a free press ought to prioritize objectivity over advocacy.

## Solvency

#### Weight-of-evidence reporting is key to checking false balance of science on climate change, which curtails misinformation

Fahy 17 (Declan Fahy is an Associate Professor in the School of Communications at Dublin City University who researches the public communication of science, health, environment, and technology. He is the author of The New Celebrity Scientists: Out of the Lab and Into the Limelight (2015). He previously worked as an assistant professor at American University in Washington, D.C. He is currently on the editorial advisory board of Public Understanding of Science, the editorial board of Journal of Science and Popular Culture, and the editorial board of Environmental Communication.), “Objectivity, False Balance, and Advocacy in News Coverage of Climate Change”, Oxford University Press, 3-29-17, pg. 13-14, <https://oxfordre.com/climatescience/view/10.1093/acrefore/9780190228620.001.0001/acrefore-9780190228620-e-345> NT

Scholars advocated a similar practice. The science communication researcher Sharon Dunwoody (2005, p. 90) called it “weight-of-evidence” reporting. Applying this practice, journalists ask scientists where the volume of evidence and expert opinion lie on an issue at a particular moment in time. The reporter then conveys to audiences where the weight of evidence lies. Reporters do not dismiss other evidence or perspectives, but put them in proportion. Journalists do “not get into the weeds of the scientific evidence,” or referee the validity of a source’s claims. **They default to expert judgment, a stance that also protects reporters against charges of bias** (Kohl et al., 2015, p. 4). Weight-of-evidence reporting was ethical reporting, argued Dunwoody and Konieczna (2013), as the practice meant reporters could help citizens form evidence-based opinions that could guide their behavior. A small number of media effects studies have supported the idea that a weight-of-evidence style of reporting enhanced audience understanding of the certainty of scientific knowledge(Corbett & Durfee, 2004; Kohl et al., 2015; Kortenkamp & Basten, 2015). The BBC sought to encode a similar idea to weight of evidence or deep consensus into its editorial guidelines. Part of the public service broadcaster’s historical mission has been to ensure its news and current affairs outputs treat controversial subjects impartially. The concept was codified as granting “equality of voice” to various participants in a controversy. But for the renowned evolutionist and science writer Steve Jones, this principle presented problems for science and climate coverage. In a 2011 review of the BBC’s science coverage, the professor at University College London praised the organization’s output overall, but raised the issue of false equivalence in climate coverage. He wrote (Jones, 2011, p. 16): “Attempts to give a place to anyone, however unqualified, who claims interest can make for false balance: to free publicity to marginal opinions and not to impartiality, but its opposite.” Before his review was published, the BBC had incorporated into its editorial guidelines the revised idea of “due impartiality.” Commenting on this inclusion, the BBC executive board, which runs the corporation, wrote that the concept’s application will depend on the “nature and context” of a particular science story. “Sometimes it is appropriate to present it as a debate within the scientific community,” wrote the executive (cited in Jones, 2011, p. 6), “whereas at others a range of views, including from non-experts, is justified given the social, political and cultural context.” By the time of Jones’s report, the BBC had already been moving toward a weight-of-evidence approach. The fourth IPCC report in 2007 noted that effects of global warming could now be seen. The publication marked a time when political elites and the public paid more significant attention to global warming. A year later, a senior BBC figure noted in an internal document about impartiality in coverage that the scientific evidence for climate change was conclusive. “Given the weight of opinion building up around the IPCC,” the executive wrote (cited in Jones, 2011, p. 70), “it makes sense for us to focus our coverage on the consensus that climate change is happening, is serious, but is manageable if tackled urgently.” **By 2010, experienced environmental reporters adopted practices akin to weight-of-evidence reporting**. In the United States, environmental reporters, according to researchers Hiles and Hinnant (2014, p. 448**)**, felt “duped” by the efforts driven by the fossil fuel industry to cover climate change as a controversy. **While still viewing objectivity as an essential norm of their work, they replaced it with a weight-of-evidence approach.**

#### Effective climate journalism can change the minds of climate deniers by quoting conservatives who care about the climate and focusing on solutions

Holden 19 (Emily Holden is an environment reporter for Floodlight, which partners with local journalists and the Guardian to investigate the corporate and ideological interests holding back climate action.), “The media is failing on climate change – here's how they can do better ahead of 2020”, The Guardian, 4-30-19, <https://www.theguardian.com/environment/2019/apr/30/what-will-it-take-for-the-media-to-focus-on-climate-change-in-the-2020-elections> NT

But even as there are signs that airtime for climate is beginning to increase, **questions remain about the depth and quality of the coverage**. “I don’t see the media paying much attention to differentiating how serious each candidate is on the climate question,” said David Gelber, the creator and executive producer for the Showtime series on climate change, Years Of Living Dangerously. More Americans than ever are worried about climate change. A poll of likely Democratic caucus-goers in Iowa ranked climate change about on par with healthcare as the top issues they want candidates to talk about. Research indicates that major national newspapers are beginning to pay more attention to climate – but local publications and TV news haven’t kept up. The major broadcast networks – ABC, CBS, NBC and FOX – spent just 142 minutes on climate change last year, according to one calculation from the progressive group Media Matters. And about half of Americans hear about global warming in the media once a month or less, according to surveys by climate communications programs at Yale and George Mason universities. Meanwhile, five major national US newspapers – the Washington Post, the Wall Street Journal, the New York Times, USA Today and the Los Angeles Times – have, in aggregate, roughly tripled their coverage of climate change since four years ago, according to the Media and Climate Change Observatory at the University of Colorado in Boulder. The New York Times now has a desk of about a dozen covering climate. Climate editor Hannah Fairfield said the team is collaborating with the politics desk to report on the 2020 candidates’ climate positions. **But climate coverage is not just a question of volume– it’s also a question of approach**. We spoke to experts in the field for their advice on how news outlets should cover climate in ways that make voters listen during the 2020 race. Quote conservatives Adam Berinsky, who studies why some people believe political rumors – such as that climate change is a hoax – said people who buy into political rumors are driven by a “combination of conspiratorial dispositions and political motivations”. **They are more likely to change their minds if they hear from sources they identify with, often fellow conservatives.** Aaron McCright, a sociology professor who studies public opinion at Michigan State University, said **journalists should give the small but growing numbers of conservatives who care about climate change “more of a mouthpiece so that their message could start competing” with science denialism**. Republicans who want to limit climate pollution for the sake of national security or as part of a plan for energy independence need to compete better with climate deniers, said McCright. “Those could be effective messages if they’re promoted hour by hour, day by day, week by week, by dozens or hundreds of conservatives in everyday life, TV, papers, Congress.” Bring up climate, even when the candidates don’t Gelber says reporters should bring the campaign story back to climate change, even if the candidates aren’t discussing their proposed solutions. He said they should help audiences differentiate between the candidates, explaining to viewers and readers how specific they have gotten in their plans. Cover climate as a local news story Edward Maibach, a George Mason climate communications scientist, said “most people are saying they rarely hear climate change news because most people pay attention to local news. Most climate news in America is not local news”. Maibach’s program, Climate Matters, trains weathercasters and local reporters to explain the local consequences of a warming world. Bartelme suggests trying to connect local catastrophes to the climate story and explain why the extreme weather is happening. “What we can do is make those connections for people,” Fairfield said. Reporters can seek out “local stories that have climate fingerprints on them”. Focus on solutions Elizabeth Arnold, a longtime reporter and professor at the University of Alaska, argues that **“doom and gloom” coverage alone may force the public to disengage**. “Repetition of a narrow narrative that focuses exclusively on the impacts of climate change leaves the public with an overall sense of powerlessness,” she said in an introduction to one paper. Choose words carefully Susan Hassol, director of the organization Climate Communication, said the phrase “heat-trapping pollution” is easier to understand than “greenhouse gas”, and “global warming” conveys more meaning than “climate change”.

#### Accurate climate journalism changes public policy

Shanahan 11 (Mike Shanahan was IIED's press officer for around eight years until May 2014, and has expertise in communications, climate change, biodiversity, sustainable development and training journalists. Before IIED, Shanahan was a News editor at SciDev.Net, Project coordinator at the Environmental Justice Foundation, and holds a PhD in tropical rainforest ecology from the University of Leeds), “Why the media matters in a warming world: A guide for policymakers in the global South”, International Institute for Environment & Development, 2011, pg. 1-4, <https://pubs.iied.org/sites/default/files/pdfs/migrate/G03119.pdf> NT

GOOD NEWS AND BAD NEWS **The fight against climate change could be won or lost on the pages of newspapers**, in TV and radio broadcasts and on the internet and mobile phones. This is because people need good information to make effective decisions — at the household or global level — and most people get their information about climate change from the media. Journalists can warn of extreme climatic events, explain complex policies, highlight coping strategies that work on the ground, act as watchdogs that protect the public interest, and promote the necessary actions from consumers, businesses and governments to build green economies. The good news is that across the global South, climate change journalists are growing in number and experience. They are creating networks to help each other as they report on climate change, and progressive media outlets are acting to improve their coverage. In 2009, for example, representatives of nearly 1,000 broadcasters endorsed the Paris Declaration on Broadcast Media and Climate Change, pledging to increase their coverage of climate change and give greater voice to marginalised populations. Media coverage of climate change can make a difference. In Costa Rica, for example, a major series of journalists’ reports in 2007 helped prompt the government to develop its National Strategy for Climate Change1 , including a pledge to be carbon neutral by 2021. The bad news is that media coverage of climate change still occupies only a small proportion of total media reporting relative to the scale of the problem, which threatens the lives and livelihoods of billions of people. Public awareness of climate change may be rising worldwide but in many countries, public understanding of climate change, its causes and consequences, remains low. From a survey of ten African countries, the BBC World Service Trust2 found that: “Local opinion leaders best placed to support communitybased adaptation and to help communities respond to climate change are among the least informed about it.” This is a barrier to effective action and to acceptance of necessary policies, but it is also a barrier to effective policymaking. In many countries there are problems with not only the quantity but also the quality of climate change journalism. Climate change is often restricted to specialist environment pages or Policy brief 2011 climate change media partnership “Good communication is … the lubricant that helps the whole engine of climate response to turn and keep running” BARRIERS TO BREAK, BRIDGES TO BUILD Surveys3 of journalists across the global South reveal that many face similar barriers to reporting on climate change: a lack of training, unsupportive editors, and limited access to information and interviewees including local scientists and officials. Many journalists want to report on climate change but struggle to convince their editors that such stories are worthwhile. This is due to a misconception that climate change is only about science or the environment, rather than about higher-profile, more popular topics such as politics and national security, people’s health and livelihoods, or business and the economy. Many editors also see climate change as an international story. So they do not prioritise local reporting, instead using stories from Western news agencies or reprinting press releases without adding any local context or information. One study4 found that more than 70 per cent of articles on climate change in South Africa’s Mail and Guardian newspaper over six months in 2009 and 2010 were international with no South African (nor even African) content. Original, local stories accounted for just 6 per cent of the climate change coverage. But while climate change is indeed a global phenomenon, its impacts, and many of its solutions, will be local. Even where there is a will to report local stories, journalists often struggle to access relevant information from domestic policymakers. In 2010, journalists in Namibia noted5 that the government ministries responsible for climate change were “insufficiently visible” and desperately needed to employ staff to build relationships with journalists, plan media strategies and act as spokespeople. A Colombian journalist echoed these views in 2011: “Never before was the Ministry of Environment as weak at communicating as it is now...it is impossible to get information from them about anything. Climate change seems non-existent for this institution.” Policymakers can help break down the barriers to climate change reporting in ways that are cost-effective and bring co-benefits, not least in that they would increase their own understanding of climate change. Success will come not to those wanting to ‘use’ the media but to those that seek to know, understand and serve the media. programmes. It is often reported on inaccurately and presented as international news, without relevance to local people. Vernacular languages are especially poorly served. The causes of these deficits are varied (see Barriers to break, bridges to build). But policymakers who must grapple with the challenge of climate change can take concrete steps to tackle them. In particular, they can increase the knowledge, skills and resources available to journalists, as well as their own media literacy and ability to communicate clearly on climate change. better JOURNALISM: A form of ADAPTATION The media can provide vital information at times of emergency — from warning of imminent floods to explaining how to deal with disease outbreaks — but such disaster reporting often means too little, too late. Governments can do more to protect people, infrastructure and businesses from the impacts of climate change if they involve journalists in their national adaptation plans. **Indeed, strategic actions that improve climate change journalism can themselves be forms of adaptation because accurate, timely and relevant information is a critical component of resilience.** But many government initiatives fail precisely because they do not invest in effective communication as a priority, and many policymakers still see the media only as a ‘public outreach’ channel for promoting their own messages. Forty-five of the world’s least developed countries have developed a National Adaptation Programme of Action (NAPA) that outlines their strategy for coping with predicted climate change. Yet a search through these documents reveals that nearly half (20) make no mention of ‘journalist’, ‘journalism’ or ‘media’. The other countries did mention these terms but often only as part of a vague statement about ‘using’ the media to raise public awareness, rather than a concrete plan. This betrays a weak understanding of how the media works. Journalists need stories that will appeal to their audiences and news to report in a timely fashion — not just information to publish. Only 11 of the countries stated that they had consulted journalists while preparing their NAPA and only five mentioned plans to increase journalists’ ability to report on climate change. One country that has involved journalists deeply is Bangladesh. Its national consultation workshop for the NAPA was actually organised by an association of environment journalists. Bangladesh has since developed a more detailed Climate Change Strategy and Action Plan6 with a specific programme to strengthen the media’s capacity to promote adaptation and low-carbon development. Crucially, it recognises that journalists are not there just to amplify government views, but also to promote public debate and act as watchdogs. BETTER COVERAGE, BETTER RESPONSES **Strong journalism can enable citizens, the private sector and decision makers to collaborate in designing effective adaptation and mitigation strategies. It can result in not only better-informed publics but also betterinformed policymakers.** But for this to happen, coverage must be rooted in reality — making stories locally relevant, and inclusive of otherwise marginalised voices. Yet recent studies of climate change coverage in China7 , Ghana4 , India8 , Malawi9 , Nigeria4 , Peru10, South Africa4,11 and Zimbabwe11 suggest that this is not often happening. Instead, the international politics of climate change tend to dominate over coverage with more direct implications for people’s lives. Media reports tend to focus on differences in risk and responsibility between developed and developing nations, but make little mention of how responsibility, risk and ability to adapt vary within countries. Coverage also tends to climate change media partnership give little space to the voices of the poor or the role of traditional knowledge systems in providing solutions. These are the people on the frontlines of climate change — people who must overcome impacts such as droughts and floods and who have a wealth of information and knowledge to share on what works, where and how. In Indonesia, media coverage of proposals to limit climate change by reducing carbon emissions from deforestation has, according to the Center for International Forestry Research (CIFOR)12, engaged all levels of society and has helped to move the policy debate forward. CIFOR concluded though that “opinions are evidently polarised and some voices are clearly louder than others” and that coverage had “raised expectations and created conflict over resource control”. One proven way to build the bridges between policymakers, journalists and local stakeholders that are needed to make media coverage of such complex topics locally relevant and locally representative is with learning groups (see Learning groups lead the way). (MEDIA)TION OF GLOBAL CLIMATE DIPLOMACY Media coverage also matters on the global stage, especially at the UN Framework Convention on Climate Change (UNFCCC) negotiations. Journalists at these talks can provide audiences at home with relevant reports on the negotiations and what their governments are doing. But few media outlets from the global South invest in sending journalists to such meetings, so there is often minimal media presence there. **This means that most of the news comes from Western media outlets, presenting the viewpoints of the more powerful nations and international nongovernmental organisations**.