

Climate Change in the Era of Post-Truth

INTRODUCTION

In *The Madhouse Effect: How Climate Change Denial is Threatening our Planet, Destroying our Politics, and Driving us Crazy*,¹ climate scientist Michael Mann joins with Pulitzer Prize-winning cartoonist Tom Toles to take on climate change denialism. Mann, the Director of the Earth System Science Center at The Pennsylvania State University, augments his prose with cartoons from Toles, who normally draws for the editorial section of the *Washington Post*.² Together, Mann and Toles set out to debunk the main arguments that special interest groups use to undermine climate change policy.

The book begins with an introduction to the scientific method and its application to climate change science.³ It then describes the current and potential effects of climate change on everyday life.⁴ In its second half, the book transitions to the politics surrounding climate change in the United States.⁵ A major focus of the book is the “war on climate science,” the phrase Mann and Toles use to describe how the fossil fuel industry has created misinformation to discourage action on climate change.⁶

The Madhouse Effect was published in 2016, at a moment when the United States was choosing between Democratic and Republican presidential candidates whose climate change agendas differed wildly. The book’s publication failed to avert the election of President Donald Trump, a climate change denier who has referred to the phenomenon as a “hoax” created by China.⁷ Still, *The Madhouse Effect* presents a valuable depiction of the underground currents that influence

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1. See MICHAEL E. MANN & TOM TOLES, *THE MADHOUSE EFFECT* (2016).
2. See Michael E. Mann, *Curriculum Vitae*, http://www.meteo.psu.edu/~mann/Mann/about/cv/cv_pdf.pdf (last visited Aug. 8, 2018); Tom Toles, WASH. POST, <https://www.washingtonpost.com/people/tom-toles/> (last visited Aug. 8, 2018). Mann is also famous for his “hockey stick curve.” See Michael E. Mann et al., *Northern Hemisphere Temperatures During the Past Millennium: Inferences, Uncertainties, and Limitations*, 26 *GEOPHYSICAL RES. LETTERS* 759, 761 (1999).
3. See MANN & TOLES, *supra* note 1, at 1–14.
4. See *id.* at 31–52.
5. See *id.* at 53–116.
6. See *id.*
7. See Louis Jacobson, *Yes, Donald Trump Did Call Climate Change a Chinese Hoax*, *POLITIFACT* (June 3, 2016), <http://www.politifact.com/truth-o-meter/statements/2016/jun/03/hillary-clinton/yes-donald-trump-did-call-climate-change-chinese-h/>.

climate change politics in the United States. The underlying idea—the challenges political responses to any topic face where the objective truths are being undermined—remains valid.

This review will first summarize Mann’s views on the science of climate change and “the war on climate science.”⁸ It then discusses how Mann’s arguments about the efforts of the fossil fuel industry to discredit climate science explain the meaning behind President Donald Trump’s election. Finally, the review will discuss whether Mann’s emphasis on a top-down approach to climate change is a feasible and effective solution for addressing climate change in 2018.

I. THE MADHOUSE EFFECT

This section presents Mann’s views on climate change science and the debate on climate policy in the United States in the years leading up to 2016. According to Mann, the climate has changed over the last few centuries, mainly in response to human activities.⁹ But Mann argues that fossil fuel interests have hired scientists, propagated misinformation in the media, and funded lobbying in Congress to discredit the body of science on climate change. Mann refers to the efforts of the fossil fuel interests as a “war on science.”¹⁰ Alternative “facts,” Mann argues, are presented to support an agenda preferred by the fossil fuel industry. This phenomenon is analogous to the tobacco industry’s efforts to avoid regulation a generation before.¹¹

A. Mann on Climate Change

Mann, supported by the scientific community, adamantly attributes climate change to human activity, and in particular to fossil fuel emissions.¹² Mann describes how greenhouse gases (GHGs), such as carbon dioxide (CO₂), trap heat from the sun and warm the globe.¹³ Mann states that the concentration of CO₂ in the atmosphere was about 280 parts per million (ppm) before the industrial revolution, but that the level has since increased to more than 400 ppm in recent years.¹⁴ Mann—one of the authors of the 2001 report of the Intergovernmental Panel on Climate Change—and other climate scientists attribute this increase to the unprecedented rate of fossil fuel consumption during the nineteenth and

8. MANN & TOLES, *supra* note 1, at 69.

9. *See id.* at 15–30.

10. *Id.* at 6.

11. *See id.* at 8–9, 69.

12. *See id.* at 16–17.

13. *See id.*; *see also* CLIMATE CHANGE IMPACTS IN THE UNITED STATES: THE THIRD NATIONAL CLIMATE ASSESSMENT 739 (Jerry M. Melillo et al. eds., 2014), https://nca2014.globalchange.gov/system/files_force/downloads/high/NCA3_Climate_Change_Impacts_in_the_United%20States_HighRes.pdf?download=1 [hereinafter NCA 3 Report].

14. The numbers cited by Mann correspond with the findings of the Intergovernmental Panel on Climate Change and the National Climate Assessment. *Compare* MANN & TOLES, *supra* note 1, at 16–17, *with* NCA 3 Report, *supra* note 13, at 739 & fig.4.

twentieth centuries.¹⁵ This increased concentration raised global average temperatures by one degree Celsius; Mann notes that temperatures could rise by up to five degrees Celsius by 2100 if fossil fuel burning continues at current rates.¹⁶

B. The American Political Climate

Mann argues that economic interest groups have long used the tactic of discrediting scientific research to protect their bottom line and compares the fossil fuel industry to the tobacco industry.¹⁷ He describes how the tobacco industry lobbied against regulations restricting tobacco use and successfully delayed legislation for over a decade, causing a large negative impact on public health.¹⁸ He then compares it to how the fossil fuel industry has delayed federal regulations preventing the reduction of GHG emissions from fossil fuel burning, which is making “the threat all the more dire”¹⁹ with harmful effects such as natural disasters.²⁰ Mann refers to this as the “war on climate science.”²¹

As evidence of this “war on climate science,” Mann cites Oklahoma Senator Jim Inhofe’s act of taking a snowball to the Senate floor as proof that climate change is not real.²² Mann also discusses the “swift boating” strategy of “character attacks and smear campaigns” used in the 2004 presidential campaign.²³ Part of this strategy is the use of scientific mercenaries: individuals with strong academic backgrounds willing to undertake contrarian science for the highest bidder.²⁴ Ultimately, Mann is concerned about the negative impacts these tactics have on political action and the climate change discussion, and how they have undermined “the very process of science itself.”²⁵

15. See MANN & TOLES, *supra* note 1, at 16–17; see also NCA 3 Report, *supra* note 13, at 739. Mann was one of the eight scientists in charge of the “Observed Climate Variability and Change” section of the Intergovernmental Panel on Climate Change report. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: THE SCIENTIFIC BASIS 99–164 (2001), http://www.ipcc.ch/ipccreports/tar/wg1/pdf/WGI_TAR_full_report.pdf.

16. MANN & TOLES, *supra* note 1, at 16–17. See also INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014 SYNTHESIS REPORT: SUMMARY FOR POLICYMAKERS 10 (2015), http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf [hereinafter Climate Change 2014 Report].

17. See MANN & TOLES, *supra* note 1, at 69–90.

18. See *id.* at 69–70.

19. See *id.* at 88–89.

20. See *id.* at 18–21. The list includes security, food, water, energy, land, health, ecosystems, economy, and ethics. *Id.* at 31–51.

21. *Id.* at 69.

22. See *id.* at 95.

23. See *id.* at 87.

24. See *id.* at 74–75.

25. *Id.* at 88–89.

C. Mann's "Deniers for Hire"

Although Mann chronicles the history of the fossil fuel industry's strategy in the political arena, it is not the politicians who make Mann's blood boil. Instead, Mann saves his strongest invective for those he calls the "deniers for hire"—scientists willing to forward contrarian arguments for a high price.²⁶

Mann presents the case of Frederick Seitz, former president of the National Academy of Sciences and recipient of the National Medal of Science, as a typical example of a mercenary scientist to show how interest groups use scientists as "deniers for hire."²⁷ In the late 1970s, the tobacco industry funded Seitz to discredit science on the health impacts of smoking.²⁸ Then, in the early 1990s, Seitz became the chair of the George C. Marshall Institute to campaign against the science of global warming for ideological and monetary reasons, according to Mann.²⁹

In describing how "deniers for hire" attack climate science, Mann refers back to the strategy tobacco companies used to discredit the science on smoking's health impacts. The tobacco industry funded think tanks, sponsored research, and disseminated "findings" via lobbying firms.³⁰ Mann finds the exact same patterns being used by the fossil fuel industry to derail action on climate change.³¹

Mann also discusses the media's role as a contributor to climate change denialism.³² Mann singles out Fox News as an echo chamber for an alternate universe in which climate change appears as a hoax.³³ He attributes Fox News' climate change coverage to its owner, Rupert Murdoch, and the influence that Saudi oil barons may have over his executive decisions regarding programming.³⁴ Mann points to the magnitude of this problem and how different media companies within Murdoch's media empire spread climate change misinformation differently.³⁵ Mann notes that National Geographic has recently been acquired by Murdoch, implying that the fox is guarding the henhouse.³⁶

Mann is concerned that all of this may cause Americans to live in a "bubble of misinformation," especially when combined with the right amount of media coverage,³⁷ supplemented with selective nitpicking of scientific facts.³⁸

26. *Id.* at 74–75.

27. *See id.* at 74.

28. *See id.* at 75.

29. *See id.* at 75–76.

30. *Id.* at 69–89.

31. *See id.*

32. *See id.* at 105–08.

33. *See id.* at 106.

34. *See id.* at 106–07.

35. *See id.*

36. *See id.*

37. *See id.* at 7, 103–08.

38. *See id.* at 85.

II. ANALYSIS

Mann's report of political inaction at the federal level is correct; and perhaps he is right in attributing the inaction to what he describes as a "Madhouse Effect". But given the results of the 2016 U.S. election, climate change mitigation may be better pursued at the local level, which Mann fails to consider.

Mann's statements about climate change are supported by a great majority of the scientific community.³⁹ Experts belonging to prominent organizations, such as the Intergovernmental Panel on Climate Change, have long agreed on the anthropogenic origin of climate change observed over the past 200 years.⁴⁰ There is reason to believe that this scientific opinion is also shared by much of the American public. According to a recent study by the *New York Times*, a clear majority of Americans believe that CO₂ emissions should be regulated and that climate change will have harmful effects on the U.S. population.⁴¹

The Obama administration had a clear position on climate change and implemented strategies to counter CO₂ emissions in the energy sector.⁴² The Clean Power Plan was an attempt to regulate emissions at the federal level following *Massachusetts v. EPA*.⁴³ The current administration, if anything, has taken steps back: a proposal to repeal the Clean Power Plan is in motion.⁴⁴ At the same time, regulations on GHG emissions are not likely to be part of the legislative agenda. Trump's declarations on climate change have outraged scientists all over the world.⁴⁵

Mann is also right that the attacks on science itself are a threat to democratic political discourse.⁴⁶ By this point, the debate should be about the balance between intervention and satisfaction of the needs of the present population, and not about whether climate change is real. But given the current political reality,

39. See *The 97% Consensus on Global Warming*, SKEPTICAL SCI., <https://www.skepticalscience.com/global-warming-scientific-consensus-intermediate.htm> (last visited Aug. 8, 2018).

40. See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS (S. Solomon et al. eds., 2007), <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>; Climate Change 2014 Report, *supra* note 16, at 13–16.

41. See Nadja Popovich et al., *How Americans Think About Climate Change, in Six Maps*, N.Y. TIMES (Mar. 21, 2017), <https://www.nytimes.com/interactive/2017/03/21/climate/how-americans-think-about-climate-change-in-six-maps.html>.

42. See, e.g., Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (Oct. 23, 2015).

43. See MANN & TOLES, *supra* note 1, at 133. In this case, the Supreme Court found that GHG emissions were covered within the scope of air pollutants under the Clean Air Act. 549 U.S. 497, 528 (2007). The Clean Power Plan was stayed by the Supreme Court in February 2016. *West Virginia v. EPA*, 136 S. Ct. 1000, 1000 (2016).

44. See Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 82 Fed. Reg. 48,035 (Oct. 16, 2017).

45. See, e.g., KEITH L. SEITTER, AM. METEOROLOGICAL SOC'Y, LETTER TO PRESIDENT DONALD J. TRUMP (Jan. 30, 2018), <https://www.ametsoc.org/ams/index.cfm/about-ams/ams-position-letters/ams-letter-to-president-trump-on-climate-change/>; Robert J. Walker, *Trump vs. Science*, U.S. NEWS (Nov. 17, 2017), <https://www.usnews.com/opinion/world-report/articles/2017-11-17/trumps-america-ignores-scientists-on-climate-change-and-the-environment>.

46. See MANN & TOLES, *supra* note 1, at 88–89.

a top-down solution to climate change mitigation at the federal level is not feasible.

Because of this, a bottom-up approach that bypasses the necessity of political agreement at the federal level should be considered.⁴⁷ One example of this strategy is the Community Choice Aggregation, a small, quasi-utility, which allows the local community to govern their energy procurement.⁴⁸ At the local level, a considerable number of states have taken steps to prevent CO₂ emissions and are attempting to mitigate climate change. In fact, around thirty states had mandatory renewable portfolio standards in 2017, creating procurement requirements of renewable energy for load serving entities, and an additional eight states have introduced voluntary renewable portfolio standards.⁴⁹ California provides an example of how states have actively reduced GHG emissions. California enacted the California Global Warming Solutions Act of 2006, with a goal of reducing GHG emissions to 1990 levels by 2020.⁵⁰ In 2015, Governor Jerry Brown enacted Executive Order B-30-15, attempting to reduce GHG emissions to 40 percent below 1990 levels by 2030 and to 80 percent by 2050.⁵¹ Data released this summer indicate that California's GHG emissions dropped nearly 3 percent in 2016, the latest year available, helping the state to meet its 2020 emissions target more than a year early.⁵² Because of the political setting, these bottom-up approaches, which Mann overlooks, should be considered in order for climate mitigation to continue in the United States while Trump remains in office.

CONCLUSION

Even though Mann's perspective on the causes and effects of the climate change debate are right, his views on how to abate climate change are outdated.

47. See Jeff Tollefson, *California Mulls Major Climate-Research Effort*, 548 NATURE 267, 267–68 (2017), http://www.nature.com/polopoly_fs/1.224551/menu/main/topColumns/topLeftColumn/pdf/548267a.pdf.

48. See Sean F. Kennedy, *'Greening' the Mix Through Community Choice: Toward a 100% Renewable Energy Los Angeles*, UCLA LUSKIN SCH. OF PUB. AFFAIRS (June 2017), https://www.ioes.ucla.edu/wp-content/uploads/Community-Choice-Aggregation_final-June-2017.pdf; Anne C. Mulkern, *Can California Go 100 Percent Green?*, E&E NEWS (Mar. 13, 2017), <https://www.scientificamerican.com/article/can-california-go-100-percent-green/>.

49. See Jocelyn Durkay, *State Renewable Portfolio Standards and Goals*, NAT'L CONFERENCE OF STATE LEGISLATURES (Aug. 1, 2017), <http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx>. For a more detailed analysis on renewable portfolio standards, see Galen L. Barbose, *U.S. Renewables Portfolio Standards: 2017 Annual Status Report*, LAWRENCE BERKELEY NAT'L LAB. (July 2017), <https://emp.lbl.gov/publications/us-renewables-portfolio-standards-0>.

50. See *Assembly Bill 32 Overview*, CAL. AIR RES. BD. (Aug. 5, 2014), <https://www.arb.ca.gov/cc/ab32/ab32.htm>.

51. See *Governor Brown Establishes Most Ambitious Greenhouse Gas Reduction Target in North America*, OFFICE OF GOVERNOR EDMUND G. BROWN JR. (Apr. 29, 2015), <https://www.gov.ca.gov/2015/04/29/news18938/>.

52. David R. Baker, *California Slashes Emissions, Hits Major Greenhouse Gas Goal Years Early*, S.F. CHRONICLE (July 11, 2018), <https://www.sfchronicle.com/business/article/California-hits-2020-greenhouse-gas-reduction-13066821.php>.

The world changed significantly after Trump's election, and Mann disregards the importance of local efforts in addressing global problems—particularly climate change. In addition to overlooking local solutions, Mann fails to consider strategies that an individual can take, such as switching to a plant-based diet from a meat-based diet, which has comparable impacts to those derived from the fossil fuel industry. Addressing such a tremendous challenge in today's political climate will require certain sacrifices at the local and individual levels. Therefore, even when federal political action fails, climate change mitigation can still occur.

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