An Inconvenient Lie: Big Tobacco Was Put on Trial for Denying the Effects of Smoking; Is Climate Change Denial Off-Limits?

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ABSTRACT

Plaintiffs have made several notable attempts to bring nuisance, trespass, and negligence suits against major sources of greenhouse gas emissions for climate change related injuries. While climate change is a widely recognized environmental issue, courts have refused to recognize it as a basis for a valid cause of action in tort, finding either petitioners lack standing to bring the claim, or that the claim raises political questions that should not be addressed by the judiciary. Some more recent climate change tort claims have also included allegations of fraud on the part of the hydrocarbon industry for actively perpetuating misinformation about climate change. These claims have interesting parallels in fraud claims brought against tobacco companies regarding the dangers of smoking. These commonalities are relevant to the extent that mass fraud claims against the tobacco industry, unlike similar claims against the petroleum industry, were recognized as justiciable. This raises the question of whether there is a legally relevant difference between the two claims of fraudulent activity that would justify justiciability in one instance and not the other. This Note argues there is not. Both claims essentially allege fraud based on the denial of the scientific cause of the harm, and both claims target large contributors to a scientifically complex chain of causation. To the extent that climate change is a more or less scientifically sound chain of causation is a scientific question, not a political one, and is within the competency of the courts to resolve.

“I told you before I'm not a scientist... That’s why I don't want to have to deal with global warming, to tell you the truth.” —Justice Antonin Scalia.1

“Courts must decide every case that walks in the courthouse door, even when it presents the kind of jurisprudential, public policy, evidentiary, and case management problems inherent in this litigation.” —United States v. Philip Morris USA, Inc.2

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INTRODUCTION

Human activity has consequences. If I hit someone with my car, the laws of physics tell me that action will likely cause harm. If I release 6,956,800,000 metric tons of carbon dioxide into the Earth’s atmosphere, the laws of physics tell me that this matter does not just disappear, and there is scientific consensus that it causes harm. If I tell someone something I know is untrue, I run the risk that they will believe me and act upon this misinformation to their detriment, or the detriment of others. This Note addresses the intersection of science, accountability, and tort. Generally speaking, tort actions comprise a very small percentage of litigation based on climate change. However, the claims brought, mostly under nuisance, negligence, and trespass theories have garnered disproportionate attention for their audacity. Recognizing climate change as part of a cause of action in tort pulls this scientific phenomenon that has seemingly eluded legislators due to sheer complexity from Capitol Hill and places it onto the federal dockets.

Broadly speaking, climate change tort forces courts to confront the limitations of the judicial branch. The approach thus far has been for courts to respond to this confrontation with dismissal of the case on political question or standing grounds. However, the once radical view that these nuisance cases are no different from any other case with complex questions of proximate cause has gained some traction. While the common law property tort allegations raised in recent climate change cases have garnered a good amount of academic attention, very little attention has been paid to the fraud and

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4 David Markell & J.B. Rulh, An Empirical Survey of Climate Change Litigation in the United States, 40 ENVTL. L. REP. NEWS & ANALYSIS 10644 (2010). A breakdown of climate change litigation by the numbers reveals that common law tort actions comprise less than five percent of claims filed. Id.
6 Susan Muller, Unprecedented Harm: Will the Roberts Court Recognize the Distinction Between Global Warming and Its Effects?, 44 NEW ENG. L. REV. 317 (2010) (examining standing in the context of climate change litigation, focusing in the issue of harm and the question of whether or not the harm associated with climate change can ever be concrete and particularized enough for standing); Christopher R. Reeves, Climate Change on Trial: Making the Case for Causation, 32 AM. J. TRIAL ADVOC. 495 (2009) (analyzing the causation issues that will arise in any climate change cause of action). The Supreme Court recently ruled on one such case. Am. Elec. Power Co. v. Connecticut, 131 S. Ct. 2527 (2011). The Court was evenly divided on the question of standing and thus affirmed the exercise of discretion on the part of the Second Circuit. The Court reversed, however on the question of federal common law nuisance, maintaining it is preempted by EPA regulation of greenhouse gas emissions.
conspiracy allegations against major greenhouse gas emitting industries. These claims arise out of the massive public relations and lobbying campaigns conducted in the 1990s and early 2000s. These misinformation campaigns sought to impede both individual and political action to prevent climate change by creating doubt as to the existence of anthropogenic global warming, despite the overwhelming scientific evidence in support of action.\footnote{Third Am. Class Action Compl., Comer v. Murphy Oil (Comer I), 2007 WL 6942285 (S.D. Miss. 2007) (No. 1:05-cv-00436-LTS-RHW), ¶ 39; Compl. for Damages Demand for Jury Trial, Native Village of Kivalina v. ExxonMobil Corp., 663 F. Supp. 2d 863 (N.D. Cal. 2009) (No. CV 08 1138 SBA) 2008 WL 594713, ¶ 189, 190; \textit{see also} JAMES HOGGAN, CLIMATE COVER-UP: THE CRUSADE TO DENY GLOBAL WARMING (2009).}

From the bench, climate change fraud looks a lot like a tobacco fraud case, and decades of tobacco litigation may hold some strategic insight for approaching a fraud case with comparably complex causal chains. Tobacco plaintiffs struggled for many years to obtain tort compensation for wrongful deaths and other injuries caused by smoking-related disease.\footnote{See Robert L. Rabin, \textit{A Sociological History of the Tobacco Tort Litigation}, 44 STAN. L. REV. 853 (1992).} Mass fraud and conspiracy claims brought by states were more successful.\footnote{In 1998 the four largest tobacco companies settled with forty-six states. \textit{See} GOVERNOR’S OFFICE OF AGRIC. POLICY, MASTER SETTLEMENT AGREEMENT 1 (2005), http://web.archive.org/web/20080625084126/http://www.naag.org/backpages/naag/tobacco/msa/msa-pdf/1109185724_1032468605__cigmsa.pdf.} Eventually, the United States pursued charges under the Racketeer Influenced Corrupt Organizations Act (RICO).\footnote{18 U.S.C. §§ 1961–68 (2006); Scott L. Zeger et al., \textit{Statistical Testimony on Damages in Minnesota v. Tobacco Industry} in \textit{STATISTICS FOR SOCIAL SCIENCE AND PUBLIC POLICY: STATISTICAL SCIENCE IN THE COURTROOM} 303 (Joseph L. Gastwirth ed., 2000); United States v. Philip Morris USA, Inc., 449 F. Supp. 2d 1 (D.D.C. 2006), \textit{aff’d in relevant part,} 566 F.3d 1095 (D.C. Cir. 2009), \textit{cert. denied,} Philip Morris USA, Inc. v. United States, 130 S. Ct. 3501 (2010).} The fraud allegations against major carbon emitting industries follow a pattern of counterculture and reliance on doubt similar to those made against major tobacco companies regarding their representations of the health risks of smoking and the addictiveness of cigarettes.\footnote{DAVID MICHAELS, DOUBT IS THEIR PRODUCT (2008).} In fact, comparisons have been drawn between tobacco litigation and litigation against the petroleum industry with respect to other claims:\footnote{Angela Lipanovich, Comment, \textit{Smoke Before Oil: Modeling a Suit Against the Auto and Oil Industry on the Tobacco Tort Litigation is Feasible}, 35 GOLDEN GATE UNIV. L. REV. 429 (2005) (examining tobacco litigation as a model for litigation addressing environmental harms caused by vehicle and power generation emissions respect to issues of standing, preemption, and products liability).} both types of cases involve complex chains of causation with many potential contributing factors and both require a judge to referee a battle of expert witnesses and to ultimately determine where the weight of the evidence falls. The question that remains is why courts were ready to confront scientific complexity in the case of tobacco’s link to cancer and other disease, but continue to find climate change too daunting to confront on the merits. The difference in the treatment of climate change related fraud claims and other climate change tort arises largely out of a failure to place fraud in a causal chain linked to a particularized injury (e.g. sea level rise).\footnote{Comer v. Murphy Oil (Comer II), 585 F.3d 855 (5th Cir. 2009) (mistakenly identifying the fraud injury as a lack of government action rather than tying the fraud back to the particularized injuries linked to the}
fraud-injury connection in tobacco fraud is fairly straightforward (misrepresentation $\rightarrow$ consumption $\rightarrow$ injury), courts have had more difficulty with the causal chain put into motion by climate fraud. Further, climate skeptics have done such a good job politicizing the science at the heart of the issue that courts have written off the scientific question of climate causation as a nonjusticiable political question. However, ultimately climate change fraud claims are materially indistinguishable from the tobacco fraud lawsuits and therefore should not be so easily dismissed.

Separating fact from fiction is a core judicial function, and the courts have developed sophisticated procedural standards in order to determine the validity of expert testimony. Too often the courts have conflated the scientific question at the heart of the climate change fraud allegations with a nonjusticiable political question, and in the process, dodged important questions of scientific integrity, corporate accountability and free speech that are well within their jurisdiction. Part I of this Note examines the successful RICO case mounted against the tobacco industry and compares the facts of that case to the facts alleged in current climate change fraud cases; Part II reviews the treatment of climate change-based tort claims in federal court; Part III discusses the implications of the comparison between tobacco and climate change claims for the viability of a climate change fraud claim; Part IV examines the benefits and weaknesses of addressing climate change fraud through the judicial branch.

I. SCIENTIFIC FRAUD: THE EXAMPLE OF THE TOBACCO INDUSTRY AND THE CASE FOR CLIMATE CHANGE FRAUD

In a narrow sense, climate change tort litigation is unprecedented because, to date, no climate change-based tort claim has gone to trial on the merits. However, issues of scientific validity are often before federal courts. Further, sweeping allegations of conspiracy and the manipulation of science to defraud the public have been litigated in several instances, perhaps most famously in relation to the denial of the health risks associated with smoking by tobacco companies. Examining the successful fraud allegations in these cases provides insight into the strength of the current allegations against major petroleum, coal, and electricity companies.

A. The Tobacco Industry

Under RICO, 18 U.S.C. §§ 1961–68, a plaintiff must demonstrate: 1) the existence of an enterprise, 2) a pattern of unlawful behavior, 3) participation in the enterprise to carry out the unlawful behavior, and 4) an effect on interstate commerce. Liability for
conspiracy and enterprise under RICO is limited to racketeering activity, which covers a broad range of offenses associated with organized crime. Under RICO, enterprise is defined as “any individual, partnership, corporation, association, or other legal entity, and any union or group of individuals associated in fact although not a legal entity.” The racketeering at issue in United States v. Philip Morris was mail and wire fraud, the same which would be at issue in a climate change fraud case against the hydrocarbon industry for climate change denial. To violate the RICO standard, the mail communications themselves do not even have to be false; mail must only be used to pursue a fraudulent end.

In Philip Morris, plaintiffs accused the tobacco industry of “engaging in a lengthy, unlawful conspiracy to deceive the American people about the health effects of smoking and environmental tobacco smoke, the addictiveness of nicotine, the health benefits from low tar ‘light’ cigarettes, and their manipulation of the design and composition of cigarettes in order to sustain nicotine addiction.” In a massive opinion, with over 3000 findings of fact, the court found the tobacco companies liable for mail and wire fraud and conspiracy, under RICO, for the representations it made to the public about smoking. The court enjoined the tobacco companies from “further use of deceptive brand descriptors which implicitly or explicitly convey to the smoker and potential smoker that they are less hazardous to health than full flavor cigarettes.”

The court found the defendants and others participated in the conduct, management, and operation of an enterprise that “knowingly and intentionally engaged in a scheme to defraud smokers and potential smokers for purposes of financial gain, by

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20 Whoever, having devised or intending to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises, . . . for the purpose of executing such scheme or artifice or attempting so to do, places in any post office or authorized depository for mail matter, any matter or thing whatever to be sent or delivered by the Postal Service, or deposits or causes to be deposited any matter or thing whatever to be sent or delivered by any private or commercial interstate carrier, or takes or receives therefrom, any such matter or thing, or knowingly causes to be delivered by mail . . . .

18 U.S.C. § 1341 (2006). In general, mail and wire fraud are convenient ways to establish federal question jurisdiction over what would otherwise be state law claims, since nearly all commercial activity will involve remote communication and all that is required to implicate § 1341 is that “one does an act with knowledge that the use of the mails will follow in the ordinary course of business, or where such use can reasonably be foreseen.” Pereira v. United States, 347 U.S. 1, 8–9 (1954).

21 “18 U.S.C. § 1341 does not require that any mailing utilized to establish a mail fraud prosecution be false . . . ‘if the matter mailed is utilized in furtherance of or pursuant to the scheme to defraud.’” United States v. Philip Morris USA, Inc., 449 F. Supp. 2d 1, 880 (D.D.C. 2006) (quoting United States v. Reid, 533 F.2d 1255 (D.C. Cir. 1976), aff’d 566 F.3d 1095 (D.C. Cir. 2009)).

22 Id. at 26–27.

23 “[T]he Government has established that Defendants (1) have conspired together to violate the substantive provisions of RICO, pursuant to 18 U.S.C. § 1962(d) and (2) have in fact violated those provisions of the statute, pursuant to 18 U.S.C. § 1962(c).” Id. at 27.

24 Id. at 27.
making false and fraudulent statements, representations, and promises.”

The court found that this scheme was intended to “defraud smokers and potential smokers in order to maximize their profits by preserving and enhancing the market for cigarettes, to avoid costly liability judgments, to derail attempts to make smoking socially unacceptable, and to sustain the cigarette industry.” This deception was implemented through a campaign designed to cast doubt on the emerging science connecting tobacco use with adverse health effects. The court also found deception with respect to the addictiveness of cigarettes and the manipulation of cigarette design to enhance delivery of nicotine.

B. Climate Fraud Cases

Common law fraud requires a misrepresentation of material fact, which the defendant either knows is false, is unsure of accuracy of, or knows lacks basis, for the purpose of inducing another to act or refrain from acting on reasonable reliance on the fact to their detriment. In both of the climate change fraud cases, Comer v. Murphy Oil and Native Village of Kivalina v. ExxonMobil Corp., plaintiffs alleged that the public reasonably relied on industry defendants’ misrepresentations with respect to climate change; the misrepresentations thereby induced the public to continue burning fossil fuels and induced politicians to refrain from regulating greenhouse gases. Ultimately, the plaintiffs argued that this inaction has allowed climate change to escalate to the point where it has caused the alleged injury.

In Comer v. Murphy Oil, plaintiffs alleged that defendant’s greenhouse gas emissions significantly contributed to global warming. The plaintiffs maintained that, by contributing to the rise in global temperature, defendants' actions were both a direct and a proximate cause of a significant increase in the strength and therefore destruction caused by of Hurricane Katrina. Plaintiffs brought claims for: 1) unjust enrichment under Mississippi state law, 2) civil conspiracy and aiding and abetting, 3) public and

25 Id. at 852.
26 Id.
27 Id.
28 The false statements identified by the court included those deceiving consumers into starting and continuing to buy and smoke cigarettes by misrepresenting and concealing adverse health effects caused by smoking and exposure to environmental cigarette smoke, by maintaining that there was an ‘open question’ as to whether smoking cigarettes causes disease and other adverse effects, despite the fact that the Defendants knew otherwise, and by ensuring that their research, development, and marketing of cigarettes remained consistent with these core public positions.
30 Id. at § 525.
31 2007 WL 6942285 (S.D. Miss. 2007), rev’d, 585 F.3d 855 (5th Cir. 2009), vacated on reh’g en banc, 607 F.3d 1049 (2010).
33 Comer v. Murphy Oil (Comer I), 2007 WL 6942285 (S.D. Miss. 2007), rev’d, 585 F.3d 855 (5th Cir. 2009), vacated on reh’g en banc, 607 F.3d 1049 (2010).
35 Id. at ¶¶ 13–15.
private nuisance, 4) trespass, 5) negligence, and 6) fraudulent misrepresentation and concealment. The thrust of Comer’s fraud case is that defendants made materially false statements to the public, which the state and federal governments relied upon in refusing to regulate greenhouse gas emissions. They further alleged that “[t]he public had a right to rely and did rely upon Defendants' statements, and continued to consume products in ways that increased Global Warming, all of which resulted in continued and increased profits to the Defendants. Plaintiffs' and Plaintiff Class’s injuries were proximately caused by that reliance.”

In *Native Village of Kivalina v. ExxonMobil Corp.*, plaintiffs alleged that the defendants, through various trade organizations and think tanks, waged “a long campaign . . . to mislead the public about the science of global warming.” Specifically, plaintiffs alleged that defendants funded and operated a massive public relations campaign with the goal of casting doubt upon the then emerging consensus on climate change, under the cover of independent, grassroots dissent. They also alleged that defendants held, as climate experts, individuals who lacked any real credentials in the field of climatology. These alleged experts “regularly publish[ed] their marginal views expressing doubts about numerous aspects of climate change science in places like the Wall Street Journal editorial page but rarely, if ever, in peer-reviewed scientific journals.” Further, they alleged that plaintiffs knew the information they were disseminating through these organizations was incorrect at the time it was disseminated. For example, plaintiffs point to a 1997 study, commissioned by the Edison Electric Institute and undertaken by independent consultants, that was suppressed for being unfavorable to the industry argument that climate change regulation would be too hard on

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36 Id. at ¶ 39.
37 Compl. for Damages Demand for Jury Trial, Native Village of Kivalina v. ExxonMobil Corp., 663 F.Supp.2d 863 (N.D. Cal. 2009) (No. CV 08 1138 SBA), 2008 WL 594713, at ¶¶ 189, 190. Plaintiffs sought “monetary damages for defendants' past and ongoing contributions to global warming, a public nuisance, and damages caused by certain defendants' acts in furthering a conspiracy to suppress the awareness of the link between these emissions and global warming.” Id. at ¶ 6.
38 Id. at ¶ 191.
39 Id.
40 Id.
41 ICE [Information Council on the Environment] undertook radio advertising blitzes and mass mailings that attacked the proponents of global warming and used unscientific tactics like calling attention to small geographic regions with temperature trends that ran against the overall warming as somehow disproving global warming. Internal documents from ICE revealed that the goal was to ‘reposition global warming as theory’ not fact and was designed to target ‘older, less educated males from larger households who are not typically active information-seekers’ and ‘younger, lower-income women.’

Id. at ¶ 194.
the economy.\footnote{In 1997, EEI [Edison Electric Institute] commissioned a study by a reputable consulting firm, ICF Kaiser, to assess the impact of limiting carbon dioxide emissions on the price of electricity. The results showed only a modest impact on price—an impact that would be made up by concomitant conservation savings. EEI buried the study “because it’s not damaging enough” according to an EEI source, and there were discussions at EEI about shredding all copies of the study.} They also alleged that other coalitions supported by the greenhouse gas emitting industry had similar information on hand, showing knowledge of falsity.\footnote{Id. at ¶ 195.}

The connection between the alleged fraud and the concrete and particularized injury, in \textit{Native Village}, was pled as follows: 1) defendants are responsible for “a substantial portion of the greenhouse gases in the atmosphere that have caused global warming”;\footnote{In December, 1995 the GCC [Global Climate Coalition], via its Science and Technology Advisory Committee (GCC-STAC), drafted a primer on the science of global warming for GCC members. The draft primer included a seven-page section that reviewed the ‘contrarian’ arguments and theories and listed a ‘counter-argument’ for every single one of them. The description of the counter-arguments demonstrate the GCC and its members were well aware that the contrarian theories, which they publicly touted as casting doubt on the science of global warming, were incorrect.} 2) global warming caused plaintiffs’ injuries;\footnote{Compl. for Damages Demand for Jury Trial, Native Village of Kivalina v. ExxonMobil Corp., 663 F.Supp.2d 863 (N.D. Cal. 2009) (No. CV 08 1138 SBA), 2008 WL 594713, at ¶ 3.} 3) defendants “conspired to create a false scientific debate about global warming in order to deceive the public”;\footnote{Id. at ¶ 4.} 4) the goal of this campaign was to stem growing public concern and prevent political action that would require defendants to change the way they do business\footnote{Id. at ¶ 5.}; to the extent that the public and politicians relied on this misinformation, it was to their detriment.\footnote{Id. at ¶ 269 “At all times the Conspiracy Defendants were concerned that the public would become concerned by global warming and that the growing concern would force a change in the Conspiracy Defendants’ behavior which would be costly. Delaying these costs was the major objective of the conspiracies described herein.” Id.}

In \textit{Kivalina}, the court’s dismissal of these claims was consistent with its dismissal of all of the tort claims in that case based on finding a nonjusticiable political question.\footnote{Kivalina v. ExxonMobil Corp., 663 F.Supp.2d 863 (N.D. Cal. 2008).} The court found that the plaintiff’s nuisance claim presented such a complex question of causation that it evaded judicially manageable standards of reaching a reasoned resolution and presented threshold political questions that would be better addressed by Congress.\footnote{Id. at 876.} In \textit{Comer}, the court lumped plaintiffs’ conspiracy claims together with their, more generalized, unjust enrichment claims and therefore failed to adequately distinguish between nuisance claims and conspiracy claims with respect to prudential standing.\footnote{Third Am. Class Action Compl., Comer v. Murphy Oil (Comer I), 2007 WL 6942285 (S.D. Miss. 2007) (No. 1:05-cv-00436-LTS-RHW), at ¶¶ 24–26 (“This conspiracy delayed and otherwise interfered with individual and government action to address Global Warming, and consequently contributed to Plaintiffs’ injuries . . . .”) (internal footnote omitted).}
C. Parallel Campaigns

There is an interesting parallel between the tobacco tactics, ultimately found to be unlawful, and the climate change-denial tactics alleged by plaintiffs and by journalists.\(^{52}\) One common thread is the use of trade organizations to coordinate their information campaign and provide distance between the campaign and the source of funding. For the tobacco industry, these organizations were the Tobacco Institute (later renamed the Council for Tobacco Research) and the Center for Indoor Air Research, Inc. (CIAR). These organizations were subsequently dissolved as part of a settlement with forty-six states’ attorneys general in 1998.\(^{53}\)

These tobacco organizations have eerie doppelgangers in the climate change industries. In the early 1990s, the Western Fuels Association, a coal industry trade association, together with the Edison Electric Institute, created the Information Council on the Environment (ICE).\(^{54}\) ICE hired a public relations firm to conduct a campaign to cast doubt on climate change science.\(^{55}\) The organization hired spokespeople with scientific expertise in areas other than climatology to lend legitimacy to their campaign.\(^{56}\) ICE attempted to spin the increase in atmospheric carbon dioxide as beneficial to plant life and even went so far as to make a documentary film that was widely distributed to universities on the subject.\(^{57}\)

The fossil fuel industry has taken this distancing a step further. Major greenhouse gas emitting industry groups have been accused of “astroturfing” in order to cast doubt on climate change science and undermine calls for regulation. “Astroturfing” is the term coined to describe the tactic where established special interests organize a campaign to create the appearance of a grassroots movement. The Advancement of Sound Science Coalition (TASSC) is such an organization.\(^{58}\) The group was originally developed by a public relations firm, APCO Worldwide, for Philip Morris to counter scientific research on the dangers of tobacco use.\(^{59}\) The group reached out to a number of corporations with science-related image problems, including major petroleum and chemical corporations.\(^{60}\) The firm purposely targeted their campaign to smaller cities where they would receive less pushback from experts and reporters.\(^{61}\) The American Petroleum Institute (API) and the Competitive Enterprise Institute (CEI) are also among the organizations that have

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\(^{52}\) ExxonMobil has attracted a particularly large amount of attention for its spending in connection with climate change denial. So much so, that Greenpeace has dedicated blog space entirely to the company’s spending habits. See ExxonSecrets, Greenpeace, http://www.greenpeace.org/usa/campaigns/global-warming-and-energy/exxon-secrets/ (last visited Apr. 16, 2012).

\(^{53}\) GOVERNOR’S OFFICE, supra note 10, at 1, 3.

\(^{54}\) HOGGAN, supra note 8, at 32.

\(^{55}\) Id.

\(^{56}\) Id.

\(^{57}\) Id.


\(^{59}\) Id.

\(^{60}\) HOGGAN, supra note 8, at 41.

\(^{61}\) Id. at 38–39.
been accused of providing a pseudo-independent front for the hydrocarbon industry in order to spread misinformation about climate change science without raising suspicions.62

One key difference between the two misinformation campaigns is that while tobacco industry scientists compiled a wealth of data,63 the fossil fuel industry’s campaign on climate skepticism is notable for its paucity of original data or experts in the specific field of climate research.64 The tobacco industry was infamous for attacking independent studies on the one hand, while vigorously arming itself with in-house counter research in the event of litigation on the other.65 Records, leaked in the course of tobacco litigation, revealed that Philip Morris specifically vetted scientists hired to research the health effects of tobacco use for their leanings, and prospective researchers were informed their work would be filtered through lawyers.66

Conversely, the fossil fuel industry has maintained the climate change debate via petitions, editorials,67 and reconstructions of other researchers’ datasets. An infamous example of science by petition is the Oregon Institute’s petition of 34,000 scientists who believe climate change is not anthropogenic.68 The petition was designed to undermine the scientific consensus in support of anthropogenic warming. It created the impression of a debate without raising any issues or even presenting the credentials of its signatories. A random sampling of thirty signatories later revealed that, of the signatories that would return calls, eleven still agreed with the petition, six would not sign it knowing what they know now, and three do not remember signing anything to that effect.69

The most famous data reconstruction involved a statistical reconstruction of a famous graph aggregating climate data from various sources to chart global climate change since the year 1400; it depicted a steep warming trend in the twentieth century.70 The study, conducted by retired mining executive Steven McIntyre71 and economist Ross

63 See, e.g., Luben G. Anceloff, Cigarette Smoking is Not the Cause of Cancer: Effect of Nicotine and Tar on Nucleic Acids of Rat Lung and Spleen, 23 THE NUCLEUS 56 (1980), available at http://legacy.library.ucsf.edu/tid/wbc88d00/pdf;jsessionid=5D64BA2B7D367C37DC48D8B464F65F3C.to.bacco03.
64 HOGGAN, supra note 8, at 99–133.
65 See NAOMI ORESKES & ERIK M. CONWAY, MERCHANTS OF DOUBT 21 (2010) (observing that research was already underway to develop a safer cigarette at the same time the industry insisted there was no significant health risk.).
66 John Schwartz, Philip Morris Sought Experts to Cloud Issue, Memo Details, WASH. POST, May 9, 1997, at A02.
68 HOGGAN, supra note 8, at 88–89.
69 Id. at 91.
70 Steven McIntyre & Ross McKittrick, Corrections to the Mann et al. (1998) Proxy Data Base and Northern Hemispheric Average Temperature Series, 14 ENERGY & ENV’T 751 (2003).
71 HOGGAN, supra note 8, at 111.
McKitrick,\textsuperscript{72} purported to show a fatal error in the way the proxy data was handled. They suggested that the hockey stick shape of the graph was a product of error and unjustified manipulation of the source data.\textsuperscript{73} Politicians quickly picked up the study, and it triggered a Senate hearing on the subject where Senator Inhofe declared global warming to be “the greatest hoax ever perpetrated on the American people.”\textsuperscript{74} Meanwhile, despite the sound and fury, the results of the original study have been affirmed by the U.S. National Academy of Sciences.\textsuperscript{75} This episode illustrates just how easily politics can manipulate the public discourse on scientific issues. The industry campaign against climate change science very much follows in the footsteps of the tobacco industry, but it also learned from and advanced building upon these tactics by creating even more perceived distance between the source of the information and its dissemination.

II. CLIMATE CHANGE TORT, JUSTICIABILITY, AND STANDING

A. Climate Change in the Courtroom

Despite striking similarities between tobacco and climate change fraud allegations, no tort action based on damages caused by climate change has defeated dismissal and gone to trial on the merits. To date, every attempt to bring a cause of action, based on a climate change-related tort injury, has either been dismissed for lack of standing or for lack of jurisdiction under the political question doctrine, or both. The notable exception is \textit{American Electric Power Co. II},\textsuperscript{76} which is on remand after interlocutory review by the Supreme Court.

The major points of the political question doctrine are laid out in \textit{Baker v. Carr}.\textsuperscript{77} \textit{Baker} identifies six factors used to determine whether a case is justiciable. These include:

\begin{itemize}
  \item a textually demonstrable constitutional commitment of the issue to a coordinate political department; or a lack of judicially discoverable and manageable standards for resolving it; or the impossibility of deciding without an initial policy determination of a kind clearly for nonjudicial discretion; or the impossibility of a court's undertaking independent resolution without expressing lack of the respect due coordinate branches of government; or an unusual need for unquestioning adherence to a political decision already made; or the potentiality of embarrassment from multifarious pronouncements by various departments on one question.\textsuperscript{78}
\end{itemize}

\textsuperscript{72} \textit{Id.}
\textsuperscript{73} McIntyre & McKitrick, \textit{supra} note 70, at 766.
\textsuperscript{75} Geoff Brumfiel, \textit{Academy Affirms Hockey-Stick Graph}, 441 NATURE 1032, 1032–33 (2006).
\textsuperscript{78} \textit{Id.}
The factors most often at issue in climate change cases are a lack of judicially discoverable and manageable standards and the impossibility of deciding without an initial policy determination.79

The first major climate change tort case was Connecticut v. American Electric Power Co. (AEP I).80 In AEP I, several states filed suit against American Electric Power Company, the Tennessee Valley Authority, and other energy-related corporations for public nuisance under federal common law or, in the alternative, state common law.81 Plaintiffs sought an injunction to cap greenhouse gas emissions.82 The Southern District of New York granted defendant’s motion for dismissal for lack of jurisdiction because the case raised nonjusticiable political questions.83 The Southern District reasoned that “[t]he scope and magnitude of the relief Plaintiffs seek reveals the transcendently legislative nature of this litigation.”84 The district court’s concern focused mainly on the determinations that carrying out such an injunction would entail.85 For example, the court believed that determining the level of emissions at which to set the requested cap would be beyond the function of the judiciary.86 Ultimately, the court interpreted the absence of legislative action on climate change as congressional intent not to act.87

In addition to the political question of nonjusticiability, standing was a persistent problem for early climate change tort cases. The requirements for constitutional standing are laid out in Lujan v. Defenders of Wildlife.88 Under Lujan,

First, the plaintiff must have suffered an “injury in fact”—an invasion of a legally protected interest which is (a) concrete and particularized . . . and (b) “actual or imminent, not ‘conjectural’ or ‘hypothetical[.]’” . . . Second, there must be a causal connection between the injury and the conduct complained of—the injury has to be “fairly . . . trace[able] to the challenged action of the defendant, and not . . . th[e] result [of] the

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81 Id.
82 Id. at 270.
83 Id.
84 Id. at 272.
85 See id.
86 See id. Specifically the Court found:
Such relief would, at a minimum, require this Court to: (1) determine the appropriate level at which to cap the carbon dioxide emissions of these Defendants; (2) determine the appropriate percentage reduction to impose upon Defendants; (3) create a schedule to implement those reductions; (4) determine and balance the implications of such relief on the United States’ ongoing negotiations with other nations concerning global climate change; (5) assess and measure available alternative energy resources; and (6) determine and balance the implications of such relief on the United States’ energy sufficiency and thus its national security—all without an “initial policy determination” having been made by the elected branches.
87 Id. at 272.
independent action of some third party not before the court.” . . . Third, it must be “likely,” as opposed to merely “speculative,” that the injury will be “redressed by a favorable decision.”

Prior to *Massachusetts v. EPA*, the question of whether any plaintiff could establish particularity, traceability, and redressability sufficient to support federal jurisdiction for a climate change injury was still up in the air after *AEP I* was dismissed on political question grounds.

The next major climate change decision, *Massachusetts v. EPA*, shed more light on constitutional standing within the context of climate change litigation. *Massachusetts* granted the State of Massachusetts special standing to challenge EPA’s decision not to regulate greenhouse gas emissions under the Clean Air Act. The Court held that federal statutory intrusion into traditionally state police power prerogatives gave Massachusetts a “concomitant procedural right to challenge the rejection of its rulemaking petition as arbitrary and capricious.” The decision also contained important dicta concerning the justiciability of climate change-related issues. With respect to the requirement of a concrete and particularized injury, the Court, in dicta, stated that “[t]he harms associated with climate change are serious and well recognized.” The Court also determined that the global nature of the phenomenon did not preclude a finding of particularized injury. The Court noted “[t]hat these climate-change risks are ‘widely shared’ does not minimize Massachusetts’ interest in the outcome of this litigation.” The Court also dismissed popular objections to allowing standing for climate change cases based on causation and redressability, dismissing as “erroneous” the “assumption that a small incremental step, because it is incremental, can never be attacked in a federal judicial forum.” This notion of incremental impact also carried over to the redressability requirement. The decision was influential both in the finding of standing itself and the Court’s notice of anthropogenic climate change in its application of standing principles.

The next major climate change case, and the first to raise issues of fraud, was *Comer I*. In *Comer I*, plaintiffs’ claims were dismissed *sua sponte* after the court determined at an initial hearing that plaintiffs did not have standing to bring their claims

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89 Id. at 560–61.
92 Id.
93 Id. at 520.
94 Id. at 521.
95 Id.
96 Id. at 522.
97 Id. at 524.
98 “While it may be true that regulating motor-vehicle emissions will not by itself reverse global warming, it by no means follows that we lack jurisdiction to decide whether EPA has a duty to take steps to slow or reduce it.” Id. at 525.
99 *Comer v. Murphy Oil* (Comer I), 2007 WL 6942285 (S.D. Miss. 2007), rev’d sub nom, 585 F.3d 855 (5th Cir. 2009), vacated on reh’g en banc, 607 F.3d 1049 (5th Cir. 2010).
and that their claims presented nonjusticiable political questions.\textsuperscript{100} While the decision was later vacated en banc, the Fifth Circuit’s opinion on appeal provides some interesting insight into how, building upon \textit{Massachusetts v. EPA}\textsuperscript{101} and \textit{AEP II},\textsuperscript{102} justiciable climate change claims could be developed. The Fifth Circuit reversed and remanded the Southern District of Mississippi’s dismissal of the case.\textsuperscript{103} The Fifth Circuit found that “plaintiffs have standing to assert their public and private nuisance, trespass, and negligence claims, and that none of these claims present nonjusticiable political questions; but we conclude that their unjust enrichment, fraudulent misrepresentation, and civil conspiracy claims must be dismissed for prudential standing reasons.”\textsuperscript{104}

The Fifth Circuit divided the plaintiffs’ claims between the claims arising out of climate change itself, which relied on a causal link between defendants’ greenhouse gas emissions and Hurricane Katrina, and the fraud claims. The court found that “the first set of claims . . . assert private, common-law claims of the sort that have been long recognized to give rise to standing,”\textsuperscript{105} as opposed to more generalized public law claims. Where defendants challenged plaintiffs’ standing based on the traceability of the harm back to their actions, the court declined to address the merits of plaintiffs’ causation claim, noting that at the pleading stage, plaintiffs’ factual allegations are taken as true.\textsuperscript{106} However, the court dismissed plaintiffs’ fraud-related claims on federal prudential standing grounds as generalized grievances.\textsuperscript{107} The prudential standing doctrine limits federal jurisdiction where 1) “a litigant[] rais[es] another person's legal rights”; 2) the plaintiff pleads “generalized grievances more appropriately addressed in the representative branches”; or 3) the plaintiff’s complaint falls outside of “the zone of interests protected by the law invoked.”\textsuperscript{108} The court found plaintiffs’ fraud claims to “involve every purchaser of petrochemicals and the entire American citizenry because the plaintiffs are essentially alleging a massive fraud on the political system resulting in the failure of environmental regulators to impose proper costs on the defendants,” and therefore plaintiffs lacked the particularity required to confer standing.\textsuperscript{109}

\textit{Native Village of Kivalina v. ExxonMobil Corp.}\textsuperscript{110} was also dismissed based on political question nonjusticiability.\textsuperscript{111} In \textit{Native Village}, an Inuit village brought suit under federal common law nuisance against major petroleum companies for damages attributed to climate change.\textsuperscript{112} The Northern District of California found that the issue

\textsuperscript{100} Id.
\textsuperscript{101} Massachusetts v. EPA, 549 U.S. 497 (2007).
\textsuperscript{103} Comer v. Murphy Oil (Comer II) 585 F.3d 855, 880 (5th Cir. 2009), \textit{vacated on reh’g en banc}, 607 F.3d 1049 (2010).
\textsuperscript{104} Id. at 860.
\textsuperscript{105} Id. at 863 n.3.
\textsuperscript{106} Id. at 864–65.
\textsuperscript{107} Id. at 867–68.
\textsuperscript{109} Comer v. Murphy Oil (Comer II) 585 F.3d 855, 869 (5th Cir. 2009), \textit{vacated on reh’g en banc}, 607 F.3d 1049 (2010).
\textsuperscript{111} Id.
\textsuperscript{112} Id.
did not implicate a textual commitment to another branch of government.\textsuperscript{113} Looking at the questions that the court would have to resolve in order to determine whether the petroleum companies were responsible for “unreasonable interference with a right common to the general public,”\textsuperscript{114} the court ultimately determined there was a lack of judicially manageable standards that could be employed to resolve the dispute.\textsuperscript{115} The court came to this conclusion despite the fact that the Second Circuit Court of Appeals rejected the very same argument on appeal in \textit{Connecticut v. American Electric Power Co. (AEP II)}.\textsuperscript{116} The court also found the case to require an initial policy determination that would prove “[e]qually problematic for Plaintiffs” due to the enormous policy implications of a determination of liability.\textsuperscript{117} The court explained that “by pressing this lawsuit, Plaintiffs are in effect asking this Court to make a political judgment that the two dozen Defendants named in th[e] action should be the only ones to bear the cost of contributing to global warming.”\textsuperscript{118} Furthermore, the court found that plaintiffs lacked Article III standing because the harm claimed was not “fairly traceable” to the defendants.\textsuperscript{119}

Nine days before the Northern District of California ruled in \textit{Native Village}, the Second Circuit handed down their decision on appeal from \textit{AEP I}. The ninety-page decision vacated the district court’s dismissal of the case and remanded the case back down based on its determinations that: 1) the case did not lack “judicially-discoverable and manageable standards;”\textsuperscript{120} 2) the plaintiffs’ tort claim did not turn on an initial policy decision beyond judicial discretion;\textsuperscript{121} 3) no other Baker factor was implicated;\textsuperscript{122} 4) plaintiffs have standing to bring suit;\textsuperscript{123} 5) plaintiffs stated a claim of federal common law nuisance;\textsuperscript{124} and 6) plaintiffs’ common law nuisance claim has not been displaced by

\textsuperscript{113} \textit{Id.} at 873.
\textsuperscript{114} \textit{Restatement (Second) of Torts} § 821B(1) (1979).
\textsuperscript{115} \textit{Native Village of Kivalina}, 663 F. Supp.2d at 874–76.
\textsuperscript{117} \textit{Native Village of Kivalina}, 663 F. Supp. 2d at 876.
\textsuperscript{118} \textit{Id.} at 877.
\textsuperscript{119} \textit{Id.} at 877–78. The court rejected plaintiffs’ argument that the fact that each defendant contributed to their injury by contributing significant greenhouse gas emissions satisfied the causation requirement of Article III standing. Further, the court found that plaintiffs’ injuries lie outside of the zone of defendants’ discharge of pollutants. \textit{Id.} at 881.
\textsuperscript{120} \textit{AEP II}, 582 F.3d at 326 (“Defendants’ argument is undermined by the fact that federal courts have successfully adjudicated complex common law nuisance cases for over a century. The first cases involved States bringing claims against other States, or against private parties in other States, in the Supreme Court under its original jurisdiction.”).
\textsuperscript{121} “The district court’s reliance on a refusal to legislate results in a decision resting on particularly unstable ground.” \textit{Id.} at 330.
\textsuperscript{122} \textit{Id.} at 331–32.
\textsuperscript{123} \textit{Id.} at 333–49. The court, relying heavily on the Supreme Court’s decision in \textit{Massachusetts v. EPA}, found that plaintiffs qualified for \textit{parens patriae} standing, and that they sufficiently alleged an injury in fact that was actual and imminent, fairly traceable to the defendants, and redressable. \textit{Id.} at 333–49.
\textsuperscript{124} \textit{Id.} at 352–71.
federal statute. Importantly, the court held the presence of complex scientific issues presented no obstacle to jurisdiction.

The Supreme Court recently handed down its review of *AEP II*. An evenly divided Court affirmed the Second Circuit’s assertion of jurisdiction over the case with half the Court following the majority opinion in *Massachusetts v. EPA*, and the other half finding a lack of standing in line with the *Massachusetts* dissent. However, the Court reversed and remanded the Second Circuit to the extent that the federal common law cause of action had been preempted by EPA’s steps to regulate greenhouse gases.

**B. The Unique Questions Raised by Climate Change Tort Generally and Fraud in Particular**

While the issues of justiciability and prudential standing are far from settled with respect to climate change tort law, even courts that have been receptive to climate change-based nuisance claims have dismissed climate change fraud allegations. Both courts and commentators have been torn between viewing climate change like any other complex causal chain and viewing it as so enormous and complex as to be fundamentally outside of the scope of adjudication. However, even courts that have been receptive to entertaining climate change as a causal mechanism resulting in concrete and particularized injury in a nuisance context have not been willing to apply the same analysis to fraud claims. This is largely because courts have viewed these fraud allegations as general injuries in and of themselves rather than connecting them to the concrete and particularized injury pled by plaintiffs.

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125 Id.
126 That the district court may be called upon to decide causation issues and apply a remedy does not remove the case from the ambit of nuisance actions. Federal courts have long been up to the task of assessing complex scientific evidence in cases where the cause of action was based either upon the federal common law or upon a statute. They are adept in balancing the equities and in rendering judgment.

Id. at 329.


128 Id. at 2537.

129 Compare Comer v. Murphy Oil USA (Comer II), 585 F.3d 855, 868 (5th Cir. 2009) *reh’g en banc granted, 598 F.3d 208 (5th Cir. 2010), on reh’g en banc,* 607 F.3d 1049 (5th Cir. 2010) (“Each of the plaintiffs’ second set of claims presents a generalized grievance that is more properly dealt with by the representative branches and common to all consumers of petrochemicals and the American public”) with *Id.* at 867 (“In their nuisance, trespass and negligence claims, the plaintiffs have clearly satisfied the first and third constitutional minimum standing requirements. These state common-law tort claims, in which plaintiffs allege that they sustained actual, concrete injury in fact to their particular lands and property, can be redressed by the compensatory and punitive damages they seek for those injuries . . . , and the plaintiffs’ first set of claims satisfies the traceability requirement and the standing inquiry.”)


131 *Comer II*, 585 F.3d at 869 (finding plaintiffs’ claims of fraud to be based on too generalized and theoretical of an injury).
Generally, commentators object to climate change-based causes of action because climate change litigants seek to redress public interests in a branch of government designed to resolve private interests.\textsuperscript{132} To these commentators, climate change-based tort litigation pushes the boundaries of Article III jurisdiction, doing so in ways that violate the prudential standing prohibition on generalized grievances and violate political question doctrine by confronting issues that would be best handled by Congress.\textsuperscript{133}

However, some commentators have pointed out, and some courts have recognized, that the global nature of climate change does not necessarily preclude it from resulting in concrete and particularized injuries.\textsuperscript{134} These commentators believe that, so long as causation is scientifically sound, the injury could be redressed by the legal system in a way similar to that of other injuries with complex chains of causation.\textsuperscript{135} These commentators see climate change tort as an extension of the environmental tort that preceded modern environmental statutes.\textsuperscript{136} The notion of climate change as a causal mechanism that can result in concrete and particularized injury has gained resonance with some federal courts since traceability, redressability, and concreteness requirements were recognized by the Supreme Court in \textit{Massachusetts v. EPA}.\textsuperscript{137}

While fraud carries its own problems of standing, it avoids problems that other causes of action pose. For instance, climate change fraud claims avoid federal preemption problems. When states initiated litigation in \textit{AEP I}\textsuperscript{138} in 2005, the federal government had previously taken a strong stance against setting mandatory constraints on greenhouse gas emissions.\textsuperscript{139} At that point in time, many climate change-related suits either pushed for government action\textsuperscript{140} or requested judicial remedies that would be preempted by legislative or administrative action.\textsuperscript{141} However, the Environmental Protection Agency has acted upon the Supreme Court’s 2009 \textit{Massachusetts v. EPA} decision by developing and implementing greenhouse gas reporting requirements and limitations for new

\textsuperscript{132} See, e.g., Gifford, supra note 130. These commentators see climate change as falling under a different category of activist litigation, seeking from the courts determinations that the plaintiffs could not achieve in the political branches. \textit{Id.}
\textsuperscript{133} “Public interest tort litigation, unlike ordinary torts, raises serious justiciability concerns whether analyzed under either standing or the political question doctrine.” \textit{Id.}
\textsuperscript{134} \textit{E.g.}, May, supra note 130.
\textsuperscript{135} \textit{Id.}
\textsuperscript{136} See Jason J. Czarnecki & Mark L. Thomsen, \textit{Advancing the Rebirth of Environmental Common Law}, 34 B.C. ENVTL. AFF. L. REV. 1, 6 (2007) (stating that “[m]odern environmental law grew out of the common law tort system, and modern regulation of pollution arose in an effort to deal with the inadequacies of the common law”).
\textsuperscript{139} See \textit{Massachusetts v. EPA}, 549 U.S. 497 (2007).
\textsuperscript{140} See, e.g., \textit{id.}
stationary sources.\textsuperscript{142} This potential preemption formed the cornerstone of the Solicitor General’s argument in defense of the Tennessee Valley Authority in \textit{American Electric Power Co. v. Connecticut}, a position that the Court ultimately found persuasive.\textsuperscript{143} However, because fraud-related tort actions do not entail remedies that would act directly upon greenhouse gas emissions, and federal fraud statutes are not written to preempt state action,\textsuperscript{144} climate litigants would not run the same risk of having their suits federally preempted. Further, unlike some of the remedies sought in public nuisance cases, any injunctive remedy for fraud would not require the court to act in a legislative function to establish or oversee emissions caps, which triggers separation of powers and justiciability concerns. In \textit{AEP II}, the Fifth Circuit quickly pointed out that part of the reason that the case was more judicially palatable than prior climate change nuisance cases was that “[t]he plaintiffs d[id] not assert any federal or public law actions and d[id] not seek injunctive relief.”\textsuperscript{145} Thus, to the extent that judges fear legislating from the bench, the still somewhat novel idea of causes of actions based on climate change are less daunting if compensation comes down to the monetary value of the injury.

\section{If Tobacco Fraud Was Justiciable, Why Not Climate Fraud?}

While tobacco litigants struggled for decades to win a case based on tobacco’s connection to cancer, the complex causal chain between exposure to tobacco smoke and disease did not prove to be an insurmountable barrier to adjudication. Yet the complex causal chain between greenhouse gas emissions and climate change-related injuries, such as severe weather and sea-level rise, has. Climate change fraud litigation faces two major standing barriers and a political question barrier. There are two major standing issues that

\begin{footnotesize}
\begin{enumerate}
\item[A\textsuperscript{142}] A little over a year after \textit{Massachusetts}, the EPA released an Advanced Notice of Proposed Rulemaking (ANPR): Regulating Greenhouse Gas Emissions under the Clean Air Act soliciting comments on how the EPA should proceed. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 74 Fed. Reg. 55292 (proposed Oct. 27, 2009) (to be codified 74 Fed. Reg. \S 32744). Following the ANPR, the EPA initiated the rulemaking process to determine whether or not greenhouse gases endangered human health and welfare such that the EPA would have a duty to regulate under the CAA. This was decided in the affirmative on December 7, 2009 in a final rule finding the threat of climate change sufficient to warrant a finding of endangerment. 74 Fed. Reg. \S 32744 (July 18, 2009). Because there is overlap between the waiver and the possibility of heightened new vehicle emissions regulations under \textit{Massachusetts}, the waiver hearing was originally stayed until the Supreme Court decided \textit{Massachusetts}. “The two kinds of standards can overlap significantly, in that the technology used to increase fuel efficiency will also lead to reductions in emissions of one of the GHGs—CO\textsubscript{2}—but they are not the same legal requirements and the regulations do not apply in the same manner.” \textit{Id.} at \S 32751–52. On April 1, 2010, the EPA finalized the new fuel economy standards sought by the plaintiffs in \textit{Massachusetts}. \textit{Id.}
\item[A\textsuperscript{143}] Brief for Tennessee Valley Authority Supporting Petitioners, Am. Elec. Power Co. v. Connecticut, 131 S.Ct. 2527 (2011) (No. 10-174). The Solicitor General asked the Court to reverse the appellate court’s decision in \textit{AEP II} and remand back to the court to consider whether the plaintiffs’ claims are generalized grievances that would be better addressed by the political branches and barred as a matter of prudential standing, and also whether regulations implemented by the EPA after \textit{Massachusetts v. EPA} preempt the plaintiffs’ common law claims. The Court ended up reversing on those very grounds. Am. Elec. Power Co., Inc. v. Connecticut, 131 S. Ct. 2527, 2537 (2011).
\item[A\textsuperscript{144}] Haroco, Inc. v. Am. Nat’l Bank & Trust Co. of Chicago, 747 F.2d 384, 392 (7th Cir. 1984), \textit{aff’d}, 473 U.S. 606 (1985) (“Congress enacted RICO in order to supplement, not supplant, the available remedies since it thought those remedies offered too little protection for the victims.”).
\item[A\textsuperscript{145}] Comer v. Murphy Oil USA (Comer II), 585 F.3d 855, 860 (5th Cir. 2009).
\end{enumerate}
\end{footnotesize}
tobacco fraud litigation did not have to grapple with to the same degree. First, identifying plaintiffs with particularized injuries was never a serious concern for tobacco fraud. A lawyer pursuing the tobacco industry need only look for smokers who died from or were suffering from health effects linked to smoking. In contrast, both the global nature of climate change and the general nature of the mass fraud allegations make it more difficult to identify a climate change fraud plaintiff with a particularized injury. Second, while the causal chain between tobacco use and cancer was fiercely litigated, the case that consumers would smoke less, or individual smokers would not have started smoking but for ignorance of the health risks, is relatively straightforward. Conversely, the numerous political and economic factors at play in both the consumer and political choices related to climate change make it difficult to argue that greenhouse gas emissions would be lower but for the industry consciously sponsoring misinformation. These concerns could both be addressed by extending the reasoning applied in *Massachusetts v. EPA.* With respect to standing concerns about generalized grievances, the legal reasoning favoring states as climate change plaintiffs in climate change nuisance cases—that there is a sovereign interest in the protection of public resources (e.g. coastline)—can be applied to fraud claims as well. With respect to but for causation concerns, the notion of small, but significant, contribution elaborated in *Massachusetts v. EPA* could be similarly extended to fraud claims.

There is also the issue of political question doctrine. When it comes to climate change-related litigation, courts often conflate the scientific question of whether or not an injury is attributable to the defendant’s actions with the political question of how to regulate greenhouse gases.

### A. Identifying a Plaintiff with Standing

As the Fifth Circuit observed in *Comer II,* the largest obstacle to a successful climate change-based fraud case is standing. When powerful special interests engage in massive campaigns to confuse the public about important issues everyone is injured, but the mere existence of injury does not guarantee jurisdiction. In tobacco fraud litigation, the class of plaintiffs often consists of every smoker within a certain place and timeframe. Yet standing is rarely challenged in tobacco fraud litigation because the connection between the influence of the deception on consumer choices and the injury is clear: the product is more directly dangerous than the manufacturers represented. Assuming climate change plaintiffs’ factual claims have merit, the same could be considered true for climate change: the products (carbon based fuels, the internal combustion engine, etc.) contributed to a risk that was downplayed by those who profited from the consumption. But the major challenge for climate change plaintiffs is drawing a concrete and particularized nexus between the deception and their injuries.

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147 *Comer II,* 585 F.3d at 869 (finding plaintiffs’ claims of fraud to be based on too generalized and theoretical an injury).

148 Id.
The causal issues posed by climate change generally have not proven a complete bar to prudential standing.\(^{149}\) However, for fraud claims, the reliance/injury causal connection becomes slightly more attenuated and courts have been more reluctant to connect the misrepresentation back to the original injury.\(^{150}\) In *Comer II*, in describing the general nature of the plaintiff’s complaint, the court fixated on the enormous scope of the misrepresentation, observing that the claim involves “every purchaser of petrochemicals and the entire American citizenry,” rather than looking for the causal chain that connects the misrepresentation to the particularized injury pled.\(^{151}\) The causal connection between consumer and political choices made in reliance on industry representations may be more attenuated than the connection between carbon emissions and nuisance the court accepted in the first part of its decision.\(^{152}\) However, the court does not even reach that point. It finds only a generalized grievance because it drops the chain before it reaches the injury. The Fifth Circuit is, so to speak, so overwhelmed by the forest that it misses the trees. As a result, the court fails to adequately explain: 1) why the nuisance claim is adequately particularized but the fraud claim is not, where you have the same injured parties; and 2) why any of the rationales behind prudential standing apply. While precedent does not favor future climate fraud plaintiffs, as explained below, the judicial obstacle of prudential standing is not necessarily insurmountable.

Tobacco litigation—in particular, *Laborers Local 17 Health & Benefit Fund v. Philip Morris, Inc.*—is informative on the reliance causal nexus.\(^{153}\) In *Laborers Local*, labor union health and welfare trust funds sued major tobacco corporations for conspiring to deceive the general public about the danger and addictiveness of smoking, which consequently cost the health fund millions of dollars in added health expenses.\(^{154}\) Defendants moved to dismiss the case under Fed. R. Civ. P. 12(b)(6) because the causal connection between plaintiff’s allegations and their injuries was too attenuated.\(^{155}\) The court looked at the purpose of requiring a direct relationship between conduct and injury. The court noted that (1) the more distance between cause and injury, the more difficult it is to determine the extent of the contribution to the injury;\(^{156}\) (2) allowing indirect causes of action increased the risk of duplicative relief;\(^{157}\) and (3) it does not put forth the

\(^{149}\) See, e.g., Massachusetts v. EPA, 549 U.S. 497, 522 (2007) (finding that the threat of erosion and sea level rise to coastal land owned by the state as a result of climate change was a sufficiently concrete and particularized injury for standing purposes); Connecticut v. Am. Elec. Power Co. (Am. Elec. Power Co. II), 582 F.3d 309, 341–42 (2d Cir. 2009), rev’d Am. Elec. Power Co. v. Connecticut, 131 S. Ct. 2527 (2011) (noting California’s particularized injury of declined snowpack); *Comer II*, 585 F.3d at 863 (“In their nuisance, trespass and negligence claims, the plaintiffs have clearly satisfied the first and third constitutional minimum standing requirements. These state common-law tort claims, in which plaintiffs allege that they sustained actual, concrete injury in fact to their particular lands and property, can be redressed by the compensatory and punitive damages they seek for those injuries.”).

\(^{150}\) *Comer II*, 585 F.3d at 869.

\(^{151}\) Id.

\(^{152}\) Id. at 860.


\(^{154}\) Id. at 282.

\(^{155}\) Id.

\(^{156}\) Id. at 285.

\(^{157}\) Id.
plaintiff that would be in the best position to vindicate that injury. The court held that while there may be other parties with incentive to bring fraud claims against the tobacco companies, no other party would have the same incentive to “vindicate the harm to plaintiffs—theyir reduced ability to minimize health-care expenses and their assumption of the financial burden of tobacco-related disease,” and these particular harms would go without remedy and without ability to bring suit.

To date, the only climate change plaintiffs that have found injuries particularized enough for a cause of action have been states who have lost or stand to lose property as a result of a natural system altered by climate change. Some scholars see Massachusetts v. EPA as a move toward applying a more precautionary approach to standing. A broad reading of Massachusetts v. EPA gives states a special solicitude to protect sovereign interests with respect to climate change in court. This would be an extension of the notion that “a State has a quasi-sovereign interest in the health and well-being both physical and economic of its residents in general.” Such an application of state standing would strongly favor allowing states to bring climate change fraud suits on behalf of the consumer and property interests of their citizens.

Conversely, a more narrow interpretation of state standing in a climate change context recognizes a limited procedural right to parens patriae standing where there is field preemption of a state sovereign interest. In the case of Massachusetts v. EPA, this was the Clean Air Act’s preemption of greenhouse gas regulation. This reasoning could not be applied to climate change fraud because there is no field preemption preventing states from passing their own laws to promote greater transparency. This reading has not been favored because the Court expressly conferred standing based on more than just a procedural right. In AEP II, the court allowed parens patriae standing based on the state’s quasi-sovereign interests in the health and welfare of its citizens.

158 Id.
159 Id.
161 Jonathan Remy Nash, Standing and the Precautionary Principle, 108 COLUM. L. REV. 494, 511 (2008) (“Courts should find that the ‘injury’ prong of standing is satisfied where the plaintiff can show that the harm that it might suffer would be catastrophic and irreversible, and that its occurrence is subject to great uncertainty.”).
162 Massachusetts, 549 U.S. at 519 (citing Georgia v. Tennessee Copper Co., 206 U.S. 230 (1907), the Court recognized that a “[State] independent interest ‘in all the earth and air within its domain’ supported federal jurisdiction a century ago, so too does Massachusetts’ well-founded desire to preserve its sovereign territory today.”).
165 Massachusetts, 549 U.S. at 519 (“Massachusetts cannot invade Rhode Island to force reductions in greenhouse gas emissions, it cannot negotiate an emissions treaty with China or India, and in some circumstances the exercise of its police powers to reduce in-state motor-vehicle emissions might well be pre-empted.”).
166 “Given that procedural right and Massachusetts’ stake in protecting its quasi-sovereign interests, the Commonwealth is entitled to special solicitude in our standing analysis.” Id. at 520 (emphasis added).
consistent with the broader understanding of climate change standing. Such quasi-sovereign interests are also at stake in a climate change fraud case. Thus, unlike the private litigants in Comer, a climate change-based fraud claim might stand a better chance of adjudication if brought by a state on behalf of its citizens.

**B. Causation**

The second standing issue that is more challenging in a climate fraud context is causation. Even if a state bringing the cause of action helps establish standing under a more relaxed inquiry, a climate change fraud plaintiff is going to have a more difficult time than a tobacco plaintiff establishing that there would be no injury absent a defendant’s actions. The causal reasoning of the Court in Massachusetts v. EPA could be extended to a fraud context to address this problem. In Massachusetts, the Court found that, in the context of Massachusetts’ parens patriae claim, traceability and redressability were satisfied on a theory that EPA’s failure to regulate contributed to the plaintiffs’ injuries. Such a contribution theory could be extended to both lack of political action and consumer action based on industry-sponsored doubt. While there are key distinctions between climate change and tobacco fraud cases, these distinctions should not create an insurmountable obstacle to adjudication on the merits because the reasoning of Massachusetts could be extended to address both the issue of particularity and the issue of causation.

**C. Scientific Questions vs. Political Questions**

Political question doctrine also remains an issue in a climate change context, where it never was in the context of tobacco fraud litigation. When it comes to climate change, courts often conflate the scientific question of whether or not an injury is attributable to the defendant’s actions with the political question of how to regulate greenhouse gases. As discussed above, in Native Village of Kivalina v. ExxonMobil, the court found that the case raised nonjusticiable political questions under two Baker factors. First, the court found a lack of judicially manageable standards. The court’s argument is built entirely around the lack of judicially manageable standards for judging the reasonableness of the defendant’s interference for the public nuisance claim. The Kivalina court did not

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168 Comer v. Murphy Oil USA, 585 F.3d 855, 859 (5th Cir. 2009) reh’g en banc granted, 598 F.3d 208 (5th Cir. 2010), on reh’g en banc, 607 F.3d 1049 (5th Cir. 2010) (identifying as plaintiffs “residents and owners of lands and property along the Mississippi Gulf coast.”).

169 549 U.S. at 523 (“EPA does not dispute the existence of a causal connection between manmade greenhouse gas emissions and global warming. At a minimum, therefore, EPA’s refusal to regulate such emissions ‘contributes’ to Massachusetts’[s] injuries.”).


171 Id. at 874.

172 Id.
address the judicial manageability of addressing the plaintiff’s fraud claims. However, it is difficult to imagine that climate change fraud would be any more or less manageable than any other alleged scientific misrepresentation. Just like with tobacco fraud, a court confronting questions of fraud would look at the quality of the information on which the claims were based and determine whether the defendants could reasonably make the claims they did based on the information they had.

Second, the *Kivalina* court found that a judgment would require a threshold policy determination that would be of a legislative nature. Plaintiffs tried to argue that this was not the case because they were not seeking injunctive relief, which would require the court to limit greenhouse gas emissions. The threshold policy determination the court identified was “who should bear the cost of global warming.” This is all well and good, but like the argument over *second Baker* factor, it does not apply to the climate fraud issue. Regardless of who should bear the cost of global warming, it is unlawful to knowingly misrepresent information in such a way that it causes injury.

What is telling about the court’s analysis in *Kivalina* is the way basic scientific questions underlie the determinations that the court portrays as political. For example, in distinguishing climate change-related nuisance claims from the air and water pollution case law plaintiffs cited in defense of judicially manageable standards, the court places a lot of emphasis on the complexity of the causal chain between defendant’s actions and plaintiff’s injury. But this distinction is fundamentally a question of the scientific validity of the causal chain, not a question of political policy. To the extent that scientific questions were not problematic for tobacco litigants, neither should the science of climate change intimidate the courts out of confronting these important factual and legal questions. Especially since the science of climate change, though complex, is just as, if not more accepted than the science that linked tobacco use to cancer.

### IV. Why Litigate?

The advantage to dealing with the issues of scientific fraud in the courtroom, versus in the political branches, is that courts isolate questions of fact from questions of law or opinion, and they have procedural rules, which separate truth from political rhetoric. The

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173 Id. at 876.
174 Id.
175 Id. at 876–77.
176 Id. at 876.
177 “I think we understand the mechanisms of CO2 and climate better than we do of what causes lung cancer. . . . In fact, it is fair to say that global warming may be the most carefully and fully studied scientific topic in human history.” Ralph Cicerone, president of the National Academy of Sciences, before the U.S. House Committee on Energy and Commerce. *Questions Surrounding the ‘Hockey Stick’ Temperature Studies: Implications for Climate Change Assessments Subcommittee on Oversight and Investigations*, July 27, 2006, available at http://www.c-spanvideo.org/program/193612-1
modern federal rule was established in *Daubert v. Merrell Dow Pharmaceuticals*.\(^ {178}\) In *Daubert*, children and parents of children suffering from birth defects sued manufacturers of Bendectin, a drug prescribed to pregnant women to treat morning sickness.\(^ {179}\) The Supreme Court found that the general scientific acceptance test in *Frye v. United States*\(^ {180}\) was superseded by Fed. R. Evid. 702, which at the time stated: “If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.”\(^ {181}\) *Daubert* essentially established the trial judge as the “gate keeper of the science”\(^ {182}\) by developing a “flexible” test weighing several relevant factors.\(^ {183}\) Subsequent caselaw built upon this gatekeeper function to include independence as a consideration in the evaluation of the scientific validity of the evidence, something particularly relevant to the fraud accusations leveled at the hydrocarbon industry.\(^ {184}\)

Because *Daubert* designates the judge as the gatekeeper, the evidence stage of litigation is often fiercely contested and outcome determinative. A good example of this can be found in *Minnesota v. Tobacco Industry*, a lawsuit against six major tobacco companies and two trade organizations initiated in 1994 in Minnesota state court by the state of Minnesota and Minnesota Blue Cross/Blue Shield.\(^ {185}\) The allegations included conspiracy, fraud, misrepresentation, anticompetitive behavior, and unjust enrichment.\(^ {186}\)

Among the claims, plaintiffs maintained that, by virtue of specific representations made to the public in Minnesota newspapers in 1954, professing a belief that their


\(^{179}\) Id.

\(^{180}\) Frye v. United States, 293 F. 1013, 1014 (D.C. Cir. 1923) (demanding evidence be “sufficiently established to have gained general acceptance in the particular field which it belongs”).

\(^{181}\) Daubert, 509 U.S. at 588.

\(^{182}\) Michaels, *supra* note 12, at 162. This gate-keeping function has a huge impact on the outcome of trials. If the judge excludes the evidence, there is usually nothing left to the plaintiff’s case, and the judge issues a summary judgment in favor of the defendant. Alternatively, if the judge rules that the plaintiff’s experts may testify, the case often settles, with both sides preferring that outcome to the high costs and the all-or-nothing stakes of a jury trial. *Id.* Understandably, there is concern that this places too much fact-finding power in the hands of the judge.\(^ {183}\) These factors include: “whether it can be (and has been) tested,” “whether the theory or technique has been subjected to peer review and publication,” “in the case of a particular scientific technique, the court ordinarily should consider the known or potential rate of error.” *Daubert*, 509 U.S. at 594. Under *Daubert*, acceptance and establishment would still be considered, but weighted with other measures of validity. *Id.* The rule was subsequently amended to incorporate *Daubert* factors, requiring “(1) the testimony is based upon sufficient facts or data, (2) the testimony is the product of reliable principles and methods, and (3) the witness has applied the principles and methods reliably to the facts of the case.” Fed. R. Evid. 702.

\(^{184}\) Daubert v. Merrell Dow Pharmaceuticals, Inc. (Daubert II), 43 F.3d 1311 (9th Cir. 1995) (“One very significant fact to be considered is whether the experts are proposing to testify about matters growing naturally and directly out of research they have conducted independent of the litigation, or whether they have developed their opinions expressly for purposes of testifying.”). *Daubert II* presents an added challenge to any party seeking to enter expert testimony that is not based on independent research. If the proffered expert testimony is not based on independent research, the party proffering it must come forward with other objective, verifiable evidence that the testimony is based on “scientifically valid principles.” *Id.* at 1311, 1317–18.

\(^{185}\) Zeger et al., *supra* note 11, at 305.

\(^{186}\) Id. at 305.
tobacco products were not harmful to human health and promising to “safeguard the public health,” the defendants created a “special duty.” They also alleged that tobacco companies conspired to prevent the development of a safer cigarette and disseminated false information. The trial lasted ten weeks, and plaintiffs presented twenty witnesses to establish the harmful effects of tobacco use and industry misconduct. Defendants presented ten witnesses in its defense. The suit ultimately settled before the jury returned a verdict, with the state of Minnesota receiving $6.1 billion and Minnesota Blue Cross/Blue Shield receiving millions.

On the other hand, there is cause for concern over the propriety and effectiveness of placing a judge in this gate-keeping role. Commentators have observed that the shift from general scientific acceptance as a test to a more flexible balancing of factors takes the scientific judgment out of the hands of the scientific community and puts it into the hands of lay judges. There is also concern about inconsistency and confusion in the judicial application of Daubert. However, a study of removal rates among states applying Daubert and states applying Frye revealed no significant difference, which calls into question any strategic advantage gained by courts being more receptive to scientific evidence that is not generally accepted.

Adjudication also offers advantages over both resolution via the political branches and via the public forum. Unlike the public forum, courtrooms have rules of evidence; they have exhibits and cross-examination. In court, witnesses are under oath to tell the truth and experts have to disclose their credentials. These rigors and protections also recommend adjudication over legislation. In contrast to the extensive and uniform rules of evidence and procedure for federal judicial hearings, the rules for congressional hearings are set at the committee level and tend to be less formal. Witnesses are typically selected by a committee member and most committees make an effort to include witnesses selected by the minority parties for political balance. There are no gatekeepers to vet experts based on expertise. For example, comedian Stephen Colbert was called to give testimony in a congressional hearing on immigration, and science

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187 Id.
188 Id.
189 Id. at 306.
190 Id.
191 Id.
192 MICHAELS, supra note 12, at 163–64.
195 The problem is this: in court, there are rules of evidence (you have to tell the truth) and a judge who has the expertise and is given the resources to make an intelligent decision about what is being presented. But there are no such rules in the public conversation. There are only tactics, strategies and spin.
197 Id.
fiction writer Michael Crichton has been called to present testimony on climate change before the Senate Committee on Environment and Public Works.\textsuperscript{199}

Controlling climate change fraud via tort liability would also be more desirable for industry in the long term rather than addressing misleading claims via legislation. From a First Amendment perspective, liability would allow more flexibility to deal with only the most serious cases rather than trying to regulate scientific claims directly. Also, industry would still be protected from frivolous litigation, at least at the federal level by heightened pleading requirements under Fed. R. Civ. P. 9.\textsuperscript{200}

A complicating factor in adjudicating the “climate change debate” is how aligned and intertwined the anti-climate change commercial lobby has become with general conservative, antiregulatory politics.\textsuperscript{201} This cross-pollination of science and politics has been problematic both for the science of climate change and for the politics. On the one hand, this alliance muddies the First Amendment waters, as the pursuit of fraud claims against petroleum companies also implicates—and could chill—legitimate political speech. On the other hand, it would also be imprudent to allow special interests to “scientize” their politics with false science to confuse and manipulate the public.\textsuperscript{202}

It should be noted that self-interested speech is not inherently improper. Professor Martin H. Redish warns of the dangers of conflating democratically healthy, self-interested advocacy with fraud.\textsuperscript{203} Based on his experience with tobacco litigation, he observes that there is nothing inherently wrong with adversarial research, especially conducted in response to a potential liability.\textsuperscript{204} He points out the no-win situation


\textsuperscript{200} The requirement to plead claims requiring scienter with particularity places a higher burden on plaintiffs to bring meritorious claims.


Voters believe there is no consensus about global warming within the scientific community. Should the public come to believe that the scientific issues are settled, their views about global warming will change accordingly. Therefore \textbf{you need to continue to make the lack of scientific certainty a primary issue in the debate}, and defer to scientists and other experts in the field.

\textit{Id.} (emphasis in the original).

\textsuperscript{202} Of tobacco industry lawyers he observes, “[i]n their capacity as adversaries acting in anticipation of legal conflict, industry lawyers could appropriately choose to support only those research efforts that they reasonably believed might lead to scientific data or conclusions supporting their client’s position on the potentially outcome-determinative issue.” Martin H. Redish, \textit{The Adversarial System, Democratic Theory, and the Constitutional Role of Self-Interest}, 51 DEPAUL L. REV. 359, 385 (2001).

\textsuperscript{203} By conducting or supporting unlimited scientific research, the companies would effectively have been placing themselves in a no-win situation with the buying public. On the one hand, if the research appeared to establish the absence of a linkage, public skepticism of the results of any research supported directly by the industry would have rendered the evidence of little use in convincing the public of the product’s safety. On the other hand, if the results of the research
manufacturers face when they responsibly sense that there might be a problem with their product. Redish sees working through intermediaries as a means of getting around the problem, in the sense that any vindicating research would have greater credibility. However, he does acknowledge that the appearance of independence could also be abused, observing “it is conceivable that an industry could simply fabricate or falsely alter the results of its own or independently conducted research . . . Such actions would amount to fraud by the perpetration of conscious falsehoods, already shown to fall outside the . . . proper scope of adversary theory.”

Thus, it is crucial that any inquiry into the legitimacy of the use of science to persuade the public against climate change regulation not become an inquisition against legitimate voices of dissent, even if the interests involved are not entirely independent. From a policy perspective, it would be harmful to the public interest to punish commercially interested research with liability. Yet, a chilling effect could also be evaded by confronting the issue in federal court and applying clear standards of scientific validity to conflicting climate change claims in order to distinguish the legitimate self-interested science from fraudulent manipulations of research intended to mislead the public.

Commentator Holly Doremus elaborates on how the intermingling of science and politics inevitably corrupts both. She notes “[t]he core of the problem is not the involvement of politics but its concealment behind a cloak of science.” Doremus points out that often science is used to undermine or delay political decisions that ultimately rest on policy and value judgments, not empirical data. In many ways, allowing a fraud action based on climate change denial would be a step towards determining if, and to what extent, politics are at work behind the climate change veil. It should be noted that climate change activists are not the only parties interested in unraveling this relationship. Following the leak of private e-mail communications between several prominent climatologists performing research in the field, the blogosphere was atwitter with climate

tended to confirm the linkage, both as a legal and practical matter, the industry would have been saddled with those conclusions even if its leaders honestly doubted their scientific validity.

Id. at 396.

205 Id. at 399.

206 What the industry did to extract itself from this no-win dilemma, at least on the surface, reflected a form of true legal brilliance. It developed what was originally known as the Tobacco Industry Research Council, later changed to the Council for Tobacco Research. The Council, though fully supported by the industry, included a board of eminent scientists under the supervision of a prestigious scientist-director who served as an employee of the industry.

Id. at 399–400 (footnote omitted).

207 Id. at 401.

208 The important point to keep in mind, however, is that if the free and open inquiry contemplated by the First Amendment is to be meaningful, the mere fact that a private individual or entity maintains a view of the science different from government or the existing scientific community cannot, in and of itself, constitute proof of either knowledge, falsity, or recklessness.

Id. at 403.


210 “The vast majority of the disagreements are not over the data themselves. They are instead over what actions are justified by imperfect data.” Id.
skeptics calling for RICO inquiries into climate change research institutions.²¹¹ To the extent a party can put together a proper fraud case demonstrating that the public is being cynically manipulated one way or another about climate change with dubious science, the responsible parties should have to answer for it in court, lest Lysenkoism hijack our policy decisions on the issue.²¹²

CONCLUSION

In considering whether climate change fraud is capable of being litigated or desirable to litigate, it is easy to get lost in the size and complexity of the issue of climate change itself. Up until Massachusetts v. EPA, courts were hesitant to entertain any claims of injury resulting from climate change for this reason. However, if one steps back and looks at the global atmosphere as any other body, and climate change as any other disease caused by an imbalance in the systems that regulate that body, the issues start to take focus. Whether the smoke is coming from a tail pipe or a Marlboro light, once the causal connection is established between the intentional misrepresentation, the pollutant, the disease, and a concrete and particularized injury, there exists a triable cause of action.

²¹² “Lysenko was a Russian plant breeder, without scientific training, who believed that acquired traits could be inherited, rejecting the already well-established evidence that genes control inheritance. Promising great gains in desperately needed agricultural production, Lysenko managed to persuade the Soviet Union no only to adopt his views, but to actively suppress the teaching and study of conventional genetics for more than thirty years.” Doremus, supra note 209, at 251–52.