

**REJECTING CLIMATE CHANGE:
NOT SCIENCE DENIAL,
BUT REGULATION PHOBIA**

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I. INTRODUCTION

At this juncture, after the COPE 21 conference in Paris, it seems clear that the most significant impediment to a worldwide effort to combat the disastrous consequences of climate change is the United States.¹ It seems equally clear that the reason why the United States has assumed such a counterproductive role is the existence of a set of attitudes within its political discourse that is generally described as climate change denial.

Climate change denial springs from a number of sources. The most obvious is the energy industry, whose largest firms derive their

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1. Coral Davenport, *Nations Approve Landmark Climate Accord in Paris*, N.Y. TIMES, Dec. 12, 2015, at 5. "A deal that would have assigned legal requirements for countries to cut emissions at specific levels would need to go before the United States Senate for ratification. That language would have been dead on arrival in the Republican-controlled Senate, where many members question the established science of human-caused climate change, and still more wish to thwart Mr. Obama's climate change agenda." See ANTHONY GIDDENS, THE POLITICS OF CLIMATE CHANGE 89 (2d ed. 2011) ("At present, the US, the country with the greatest responsibility to develop a far-reaching climate change policy, has done nothing at all on a national level. It is almost alone among industrial nations in this respect.").

income from the extraction and combustion of fossil fuels.² The most visible is political leadership, in particular the Republican Party, which holds a majority in both houses of Congress.³ Underlying these two groups of elite actors,⁴ however, is a broad base of support within the American populace. Business firms, whose self-interest is obvious, would have difficulty persuading people of something they were not prepared to believe. Politicians whose positions depend on being elected are unlikely to announce or support views that are antithetical to a large majority of their constituents.⁵ While there is much to be learned by studying the role of elite actors in the development of American climate change denial, the process cannot be fully explained without understanding its sources of support within the general public.

There are, by now, a vast number of studies that assess public attitudes toward climate change.⁶ While these studies vary in their

2. See, e.g., GIDDENS, *supra* note 1, at 89; MICHAEL E. MANN, *THE HOCKEY STICK AND THE CLIMATE WARS: DISPATCHES FROM THE FRONT LINES* (2012); NAOMI ORESKES & ERIC M. CONWAY, *MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBLISCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING* (reprt. ed. 2011); ERIC POOLEY, *THE CLIMATE WAR: TRUE BELIEVERS, POWER BROKERS, AND THE FIGHT TO SAVE THE EARTH* (2010); William C. Tucker, *Deceitful Tongues: Is Climate Change Denial a Crime?* 39 *ECOLOGICAL L.Q.* 831 (2012).

3. Climate change denial is the official position of the Republican Party. See *REPUBLICAN PLATFORM: WE BELIEVE IN AMERICA* (2012). The platform speaks at length about the need to encourage all forms of energy production. *Id.* at 15-16. It studiously avoids any reference to global warming or climate change, and promises to "[e]nd the EPA's war on coal and encourage the increased safe development in all regions of the nation's coal resources, the jobs it produces, and the affordable, reliable energy that it provides for America." *Id.* at 16. It appends to its section expatiating on the benefits of coal a single sentence about proposals to combat global warming: "[W]e oppose any and all cap and trade legislation." *Id.* James Inhofe, Republican Senator from Oklahoma, and currently chair of the Senate Committee on Environment and Public Works, has written a book declaring climate change to be a hoax. JAMES INHOFE, *THE GREATEST HOAX: HOW THE GLOBAL WARMING CONSPIRACY THREATENS YOUR FUTURE* (2012). For views of other leading figures in the Republican Party, see *infra* Section III.A.

4. A third, perhaps less obvious set of elite actors consists of conservative "think tanks." See, e.g., Peter J. Jacques, Riley E. Dunlap & Mark Freeman, *The organisation of denial: Conservative think tanks and environmental scepticism*, 17 *ENVTL. POL.* 349 (2008); Aaron M. McCright & Riley E. Dunlap, *Challenging Global Warming as a Social Problem: An Analysis of the Conservative Movement's Counter-Claims*, 47 *SOC. PROBS.* 499 (2001). These are mainly off-shoots of both the energy industry and conservative politicians, and their impact on public policy is similarly dependent on the reception of their products (books increasingly written by authors lacking academic degrees in natural science disciplines).

5. In fact, popular attitudes about climate change are strongly correlated with party affiliation. A recent study by Pew Research Center found that "[a] substantial majority of Democrats (79%) say there is solid evidence that the average temperature on earth has been increasing over the past few decades, and 53% think the earth is warming mostly because of human activity. Among Republicans, only 38% agree the earth is warming and just 16% say warming is caused by humans." PEW RESEARCH CENTER, *LITTLE CHANGE IN OPINIONS ABOUT GLOBAL WARMING: INCREASING PARTISAN DIVIDE ON ENERGY POLICIES* (2010), <http://www.people-press.org/2010/10/27/little-change-in-opinions-about-global-warming/>.

6. See Matthew C. Nisbet & Teresa Myers, *The Polls—Trends: Twenty Years of Public Opinion About Global Warming*, 71 *PUB. OPINION Q.* 444, 444-45 (2007).

methodology, content and conclusions, they tend to agree on several basic observations regarding those who deny that anthropogenic global warming is a reality. First, the deniers are willing to reject an overwhelming scientific consensus that the problem exists and poses a serious or possibly catastrophic threat to the welfare of future generations.⁷ Second, the attitudes of the deniers, like those of their opponents, are strongly correlated with their political views on other subjects.⁸ Specifically, the deniers tend to endorse conservative views on political and social matters, many of them substantively unrelated to climate change, such as race relations, abortion, and GLBT rights.

This article is an effort to discern the motivations that lie behind the deniers' attitudes, that is, the structure of meaning that leads the deniers to their conclusions. Its basic thesis is that the climate change deniers do not harbor any particular hostility toward science or technology. Rather, they perceive the climate change issue, and more particularly the regulatory initiatives designed to address it, as a direct and intentional assault on their personal lifestyles and moral attitudes.

Section II of the article raises doubts about the increasingly common view that the denial springs from a rejection of science as a methodology or a source of truth. It begins by noting the lack of any general hostility to science in our society, distinguishes climate change denial from other notable rejections of scientific consensus, specifically the safety of genetically modified food and the reality of Darwinian evolution, and then observes that the deniers' affinity to conspiracy theorists does not indicate an anti-scientific bias. Section III argues that climate change denial is in fact a reaction to the regulatory initiatives that have been advanced to combat the impending crisis. Subsection A explains this reaction by relying, first, on George Lakoff's theory of conceptual and metaphorical frameworks, and second, on a phenomenon that survey researchers describe as a boomerang effect. Subsection B re-characterizes this reaction as a type of collective phobia, following Richard Hofstadter's idea that conspiracy theories can be described as collective paranoia. It then explores the underlying cultural and

7. See *infra* Section III.A.

8. The divergence of view based on party affiliation, *see* note 5, *supra*, becomes even more pronounced when attitudes are taken into account and liberal Democrats are compared to conservative Republicans. Asked whether they "trust climate scientists a lot to give full and accurate information about the causes of climate change" 70% of liberal Democrats said yes, as opposed to only 15% of conservative Republicans; asked whether climate change research represents the best available evidence most of the time, the respective figures were 55% versus 9%. CARY FUNK & BRIAN KENNEDY, PEW RESEARCH CENTER, THE POLITICS OF CLIMATE CHANGE (2016), <http://www.pewinternet.org/2016/10/04/the-politics-of-climate/>; *see infra* Section III.A.

historical sources of this reaction, specifically the transition in moral attitudes that has been occurring during the High Modern Era (1800 to the present). Section IV attempts to derive some tentative policy recommendations from these observations. It explores some possible ways of changing individual behavior that contributes to climate change without triggering people's phobic reaction and the intense political opposition that results from it.

II. CLIMATE CHANGE DENIAL AND SCIENCE

A. The Idea of Science Denial

Any plausible explanation for climate change denial must account for the deniers' willingness to ignore the overwhelming scientific evidence supporting anthropogenic climate change.⁹ Discussions of the subject often characterize this attitude as “science denial” and attribute it to the cultural phenomenon that people interpret scientific findings in accordance with their personal predilections.¹⁰ This represents a rejection of the older deficit model of science communication, which holds that people's views diverge from scientific conclusions when they lack adequate

9. The consensus is an established fact, and the underlying reality of anthropogenic warming is not open to serious question. UNITED NATIONS INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS (2013); see John Cook, et al., *Quantifying the consensus on anthropogenic global warming in the scientific literature*, 8 ENVTL. RES. LETTERS 024024, 3 (2013) (meta-analysis finding that 97.1% of 11,944 articles published in peer reviewed scientific journals between 1991 and 2011 concluded that anthropogenic warming was occurring); Stephen J. Farnsworth & S. Robert Lichter, *The Structure of Scientific Opinion on Climate Change*, 24 INT'L J. ON PUB. OPINION RES. 93 (2011) (84% of 489 members of the American Geophysical Union and American Meteorological Society believe that anthropogenic climate change is occurring); JOINT NAT'L SCI. ACADEMIES' STATEMENT: GLOBAL RESPONSE TO CLIMATE CHANGE, <http://nationalacademies.org/onpi/06072005.pdf> (statement by science academies of G8 nations); Naomi Oreskes, *The Scientific Consensus on Climate Change*, 306 SCIENCE 1686, 1686 (2004) (meta-analysis finding that articles in peer edited scientific journals are nearly unanimous in concluding that anthropomorphic climate change is occurring).

10. See, e.g., ANDREW J. HOFFMAN, HOW CULTURE SHAPES THE CLIMATE CHANGE DEBATE (2015); Robert J. Brulle, Jason Carmichael & J. Craig Jenkins, *Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002-2010*, 114 CLIMATIC CHANGE 169 (2012); Donald Braman, et al., *The polarizing impact of science literacy and numeracy on perceived climate change risks*, 2 NATURE CLIMATE CHANGE 732 (2012). An alternative theory is that rejection of scientific finding about climate change results from inborn characteristics, specifically, the way our brains are “wired.” GEORGE MARSHALL, DON'T EVEN THINK ABOUT IT: WHY OUR BRAINS ARE WIRED TO IGNORE CLIMATE CHANGE (2015). But the same argument can be made for many complex modern problems, and this approach does not explain why climate change is not only differentially accepted, but that these differences correlate with different political positions.

information about those conclusions.¹¹ The cultural explanation is more convincing, but it requires further analysis.

To begin with, the term science denial can refer to at least two different attitudes. The first is a rejection of science itself, that is, the refusal to accept any naturalistic explanation for a given physical phenomenon. The second is the rejection of a prevailing consensus about a particular naturalistic explanation, perhaps on the basis of an alternative explanation that is couched in equally naturalistic terms. Given the complexity of social attitudes, and the ability of humans to behave and argue strategically, neither of these positions is likely to be unalloyed, nor is the distinction between them likely to be inviolable. But it is important to recognize that there is a difference between rejecting science as a possible explanation and rejecting a particular explanation that represents the consensus view of scientists.

The idea that people's interpretation of scientific findings is based on their political or social attitudes is sometimes attributed to the well-established social science principle that our sense of reality is socially constructed.¹² In the 1930s, Evans-Pritchard demonstrated this point in striking fashion by interviewing traditional African healers and confronting them with the ineffectiveness of their spells in curing disease.¹³ He reported that the healers remained unfazed by the disconfirming evidence; if the spell didn't work, they said, it was because it has been performed incorrectly.¹⁴ The analogy to climate change denial is an appealing one, but the problem is that the social construction process operates at too lofty a level to explain the current debate in the United States. It concerns the way an entire culture processes reality, and in some sense, it defines what culture itself means, but it usually does not provide a useful explanation for intra-cultural debate.¹⁵ In fact, even fairly simple cultures provide extensive

11. See, e.g., Robert K. Goidel, Todd G. Shields & Mark Peffley, *Framing Theory and RAS Models: Toward an Integrated Perspective of Media Influence*, 25 AM. POL. Q. 287 (1997); Matthew C. Nisbet, *The Competition for Worldviews: Values, Information, and Public Support for Stem Cell Research*, 17 INT'L J. PUB. OPINION RES. 90 (2005); Matthew C. Nisbet & Robert K. Goidel, *Understanding citizen perceptions of science controversy: bridging the ethnographic—survey research divide*, 16 PUB. UNDERSTANDING OF SCIENCE 421 (2007).

12. See generally PETER L. BERGER & THOMAS LUCKMANN, *THE SOCIAL CONSTRUCTION OF REALITY: A TREATISE IN THE SOCIOLOGY OF KNOWLEDGE* (1966); NELSON GOODMAN, *WAYS OF WORLDMAKING* (1978).

13. E. E. EVANS-PRITCHARD, *WITCHCRAFT, ORACLES AND MAGIC AMONG THE AZANDE* (Oxford Univ. Press 1st ed., 1937); See E. E. EVANS PRITCHARD, *THEORIES OF PRIMITIVE RELIGION* (1965).

14. *Id.*

15. To say that it does commits the error made by those who argue that dissent within a culture disproves the validity of cultural relativism. Moral relativism means that ethical systems are shaped by culture; it definitively does not claim, except in its vulgar and

resources for disagreement among their members. The social construction of reality establishes a framework for dissent within a given culture. It can explain why a particular issue lies outside the conceptual framework of a given society and thus is never debated within the society but cannot, by itself, explain which issues within the society's framework will be debated and which will be agreed upon.¹⁶

As a matter of society-wide social construction, modern Western society accepts the validity of science.¹⁷ Science is, in fact, our prevailing measure of truth. We live in a world suffused with science; we teach it in schools, read about its discoveries in the media, and cheerfully accept the technological products that it generates.¹⁸ Very few of our current debates turn on the validity of science, or raise serious questions about its conclusions.¹⁹ Leading books that challenge the reality of anthropomorphic climate change

indefensible forms, that everyone in a given culture has identical moral views. For discussions of moral relativism, see STEVEN LUKES, *MORAL RELATIVISM* (2008); J. L. MACKIE, *ETHICS: INVENTING RIGHT AND WRONG* (London: Penguin 1980); DAVID WONG, *MORAL RELATIVITY* (Univ. of California Press ed. 1985).

16. Gadamer develops the image of a cultural horizon. See HANS-GEORG GADAMER, *TRUTH AND METHOD* 269-74, 336-41 (John Cumming trans. 1975). The horizon places a limit on the range of one's vision, but not on content of one's vision within that range. Certain modes of thought will be inaccessible to a particular society, but there will still be many beliefs that are accessible and that form the basis of societal debate.

17. Modern epistemology has raised important doubts about the extent to which we can demonstrate the truth of natural science propositions. See, e.g., PAUL FEYERABEND, *AGAINST METHOD*, (Verso, 4th ed. 2010). THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS*, (Univ. of Chicago, 2d ed. 1970). It seems fair to say, however, that this debate does not challenge the role of science in modern thought and culture, but rather points out that this role is a social construction, see *supra* note 12, that cannot sustain its epistemological claim to definitive truth.

18. See, e.g., HERBERT BUTTERFIELD, *THE ORIGINS OF MODERN SCIENCE 187-202* (Free Press, rev. ed. 1997) (development of modern science exercised a transformative effect on contemporary attitudes); A. RUPERT HALL, *THE SCIENTIFIC REVOLUTION, 1500-1800* (1966) (Scientific Revolution produced a transformative impact on the way modern people think); BRUNO LATOUR, *THE PASTEURIZATION OF FRANCE* (Alan Sheridan & John Law trans., 1993) (influence of Louis Pasteur depended on deep and widespread scientific orientation in the general public); JOHN D. MILLER, *THE AMERICAN PEOPLE AND SCIENCE POLICY: THE ROLE OF PUBLIC ATTITUDES IN THE POLICY PROCESS* (1983) (although low levels of public knowledge and attentiveness about science issues are a source of concern to scientists, public has been largely accepting of science-based initiatives); STEVEN SHAPIN, *THE SCIENTIFIC REVOLUTION* (1998) (development of scientific attitudes was not a revolution but a gradual change in people's mode of thought); Jon D. Miller, *Public understanding of, and attitudes toward, scientific research: what we know and what we need to know*, 13 *PUB. UNDERSTANDING OF SCI.* 273 (2004) (while scientific literacy in the U.S. is relatively low, there is deep and widespread belief about the value of scientific research).

19. In fact, the reverse is true. All participants in public policy debates try to marshal scientific evidence in support of their position, and government agencies regularly claim scientific support for their policies, even if they need to be cavalier or outright dishonest about the evidence in order to do so. See, e.g., THOMAS O. MCGARITY & WENDY E. WAGNER, *BENDING SCIENCE: HOW SPECIAL INTERESTS CORRUPT PUBLIC HEALTH RESEARCH* 20-127 (2008); Wendy E. Wagner, *The Science Charade in Toxic Risk Regulation*, 95 *COLUM. L. REV.* 1613 (1995).

do not base their challenge on the rejection of science; rather, they fully subscribe to the scientific method and assert that proponents of climate change have distorted scientific evidence to serve their political purposes.²⁰ The essence of the exaggerated, if not manufactured Climategate incident that the deniers seized upon was the claim that scientists who believed in anthropogenic global warming had violated the norms of scientific research by falsifying evidence.²¹

The level of comfort that Americans evince toward technology also belies any general hostility toward science. In the past two decades, for example, truly life-altering innovations, such as cell phones and personal computers, have been adopted with enthusiasm by the public. If one considers particular constituencies that are associated with Republicans, that is, the political party that currently denies climate change, the same attitude seems to prevail. Factory workers spend their days in a technologically structured setting, American farmers are noted for the extent to which they have applied technology to this most traditional of occupations, and gun owners are committed to what is, after all, a technological product. According to the prevailing cultural stereotype it is Republicans, not Democrats, who seem most fond of cars, motorcycles and large-screen TV's.²² In fact, at least one study based on survey data concludes that "respondents with high confidence in

20. See, e.g., CALVIN FRAY, CLIMATE CHANGE REALITY CHECK: BASIC FACTS THAT QUICKLY PROVE THE CLIMATE CHANGE CRUSADE IS WRONG AND DANGEROUS (2016); LAWRENCE SOLOMON, THE DENIERS: THE WORLD-RENOWNED SCIENTISTS WHO STOOD UP AGAINST GLOBAL WARMING HYSTERIA, POLITICAL PERSECUTION, AND FRAUD (2008); MARK STEYN, A DISGRACE TO THE PROFESSION (2015). Far from attacking science itself, these authors strive to establish their credentials as scientists.

21. Climategate involved the release of internal communications among scientists in Britain's Climatic Research Unit at the University of East Anglia. A few phrases from these documents, when taken out of context, sounded result-oriented or cavalier. See POOLEY, *supra* note 2, at 425-27. There was an immediate outcry from the deniers; one opinion piece in a British newspaper declared that the "[m]ost shocking revelation of the leaked documents is how they show the scientists trying to manipulate data through their tortuous computer programmes, always to point in only the one desired direction – to lower past temperatures and to 'adjust' recent temperatures upwards...." Christopher Booker, *Climate change: this is the worst scientific scandal of our generation*, THE TELEGRAPH (Nov. 28, 2009), <http://www.telegraph.co.uk/comment/columnists/christopherbooker/6679082/Climate-change-this-is-the-worst-scientific-scandal-of-our-generation.html>; see also BRIAN SUSSMAN, CLIMATEGATE: A VETERAN METEOROLOGIST EXPOSES THE GLOBAL WARMING SCAM (2010) (released messages reveal a wider effort to falsify evidence).

22. See Aaron M. McCright & Riley E. Dunlap, *Cool Dudes, The Denial of Climate Change Among Conservative White Males in the United States*, 21 GLOB. ENVTL. CHANGE 1163 (2011) (concluding that conservative white males are more likely to deny climate change when all other factors are controlled for). It is difficult to see this group as hostile to science and technology.

scientists feel less responsible for global warming, and also show less concern for global warming."²³

B. Exceptions: The Safety of GMOs and the Validity of Darwinian Evolution

There are of course exceptions to our society's general acceptance of science and technology. The two most notable ones are the doubts about the safety of genetically modified food products (GMOs) and the validity of Darwinian evolution. Neither of these beliefs, however, can be readily linked to climate change denial as part of a general explanation. They each display distinguishing features that make any effort to place them in a single category with climate change denial unconvincing.

With respect to GMOs, and possibly the use of pesticides as well, what is being rejected is not science itself but the predictions scientists are making about the future safety of particular agricultural techniques.²⁴ The general feeling is not so much that scientists are wrong, but that unexpected consequences might arise that create additional dangers. The result has been a demand for government regulation, either by restricting the use of GMOs or at least requiring that their use be disclosed on food packaging. This demand emerges largely from the political left, and is much stronger in Europe than in the U.S.²⁵ All these features distinguish the concern about GMOs from climate change denial, which is a direct rejection of scientific findings, vociferously opposes regulation, emerges exclusively from the political right, and is uniquely prevalent in the U.S.²⁶ In other words, the opposition to GMOs,

23. Paul M. Kellstedt, Sammy Zahran & Arnold Vedlitz, *Personal Efficacy, the Information Environment, and Attitudes Toward Global Warming and Climate Change in the United States*, 28 RISK ANALYSIS 113, 113 (2008).

24. See, e.g., STEVEN M. DRUKER, *ALTERED GENES, TWISTED TRUTH: HOW THE VENTURE TO GENETICALLY ENGINEER OUR FOOD HAS SUBVERTED SCIENCE, CORRUPTED GOVERNMENT, AND SYSTEMATICALLY DECEIVED THE PUBLIC* (2015); JEFFREY M. SMITH, *SEEDS OF DECEPTION: EXPOSING INDUSTRY AND GOVERNMENT LIES ABOUT THE SAFETY OF THE GENETICALLY ENGINEERED FOODS YOU'RE EATING* (2003).

25. See, e.g., MARK A. POLLACK & GREGORY C. SHAFFER, *WHEN COOPERATION FAILS: THE INTERNATIONAL LAW AND POLITICS OF GENETICALLY MODIFIED FOODS* (2009); DAVID VOGEL, *THE POLITICS OF PRECAUTION: REGULATING HEALTH, SAFETY, AND ENVIRONMENTAL RISKS IN EUROPE AND THE UNITED STATES* 73-97 (2012).

26. See *supra* note 1. See also ANTHONY LEISEROWITZ, *INTERNATIONAL PUBLIC OPINION, PERCEPTION, AND UNDERSTANDING OF GLOBAL CLIMATE CHANGE* (2007-08), http://www.climateaccess.org/sites/default/files/Leiserowitz_International%20Public%20Opinion.pdf. Although the United States lags only slightly behind other developed nations in the number of its inhabitants who are aware of the issue, *id.* at 4, it is the only developed nation in a GlobeScan 2006 survey where less than half the population thought climate change is a "very serious problem." *Id.* at 6. In a 2006 Pew survey which covered fifteen mainly large developed and developing nations, the U.S. ranked last in the number of people who worried about

although it can be described as involving attitudes toward science, seems distinctly different from climate change denial.

Rejection of evolutionary theory, in contrast, appears to be strongly allied with climate change denial. It does, in fact, represent a direct rejection of scientific conclusions, it is linked to the political right and it is a peculiarly, albeit not uniquely American attitude.²⁷ The crucial difference between the two sets of views, however, involves the religious motivation for the rejection of evolutionary theory. This may appear quite obvious, being the explicit reason offered by most people who adopt this attitude,²⁸ but it in fact requires further explication.

The idea that species evolved from other species was fairly common in the eighteenth and early nineteenth centuries. Darwin's contribution was to provide a mechanism by which evolution could proceed—the struggle for survival among competing organisms and the survival of the fittest.²⁹ Had this theory been proposed to devout Christians in the Early Middle Ages, their reaction might well have been receptive. They already viewed the natural world as a hostile place, filled with dangers of demonic origin. To them, the forests, the swamps, the underground regions, and the air that lay between the treetops and the heavens were all inhabited by evil spirits, while their own realm was afflicted by crop failures, diseases, and natural

climate change "a great deal" and had more than twice as many people who were "not at all" worried as the next ranking nation (Russia). *Id.* at 9. Other surveys produce somewhat different results, but the high levels of denial in the U.S. seem to be a consistent result.

27. See, e.g., *Pew Research Center, Public's Views on Human Evolution*, PEW RESEARCH CENTER (2013), <http://www.pewforum.org/2013/12/30/publics-views-on-human-evolution/> (In 2013, 67% of Democrats and 65% of independent believed that living things have evolved over time, but only 43% of Republicans subscribed to this view).

28. For the religion-based challenge to Darwinian evolution, see generally EDWARD J. LARSON, *SUMMER FOR THE GODS: THE SCOPES TRIAL AND AMERICA'S CONTINUING DEBATE OVER SCIENCE AND RELIGION* (1997); C.P. SNOW, *THE TWO CULTURES AND THE SCIENTIFIC REVOLUTION* (1959), http://sciencepolicy.colorado.edu/students/envs_5110/snow_1959.pdf. A number of major American religious denominations continue to reject evolution on scriptural grounds, e.g., the Lutheran Church, Missouri Synod, which states "[w]e teach that God has created heaven and earth, and that in the manner and in the space of time recorded in Holy Scriptures, especially Gen. 1 and 2, namely, by His almighty creative word, and in six days," and the Southern Baptist Convention, which states "[w]hereas, the Theory of Evolution has never been proven to be a scientific fact, . . . the Southern Baptist Convention . . . express our support for the teaching of Scientific Creationism in our public schools." A BRIEF STATEMENT OF THE DOCTRINAL POSITION OF THE MISSOURI SYNOD, THE LUTHERAN CHURCH: MISSOURI SYNOD (1932), <http://www.lcms.org/doctrine/doctrinalposition#creation>; *Resolution on Scientific Creationism*, SOUTHERN BAPTIST CONVENTION (1982), <http://www.sbc.net/resolutions/967>. Other denomination, including the Catholic Church, have only modified their opposition recently, see DON O'LEARY, *ROMAN CATHOLICISM AND MODERN SCIENCE: A HISTORY* 53-54, 85-93, 94-108 (2006).

29. See generally PETER J. BOWLER, *EVOLUTION: THE HISTORY OF AN IDEA* (1983); LOREN EISELEY, *DARWIN'S CENTURY: EVOLUTION AND THE MEN WHO DISCOVERED IT* (1961); EDWARD J. LARSON, *THE REMARKABLE HISTORY OF A SCIENTIFIC THEORY* (2004).

disasters attributable to the same source.³⁰ Christianity worked hard to rid the world of supplementary gods, but was generally willing to subsume these evil spirits into its own theology as minions of the Devil, thereby accommodating traditional beliefs.³¹ The idea that the cross can be used as a device to combat evil creatures is a modern holdover from this Early Medieval sensibility.³²

A transformation in the Christian attitude toward nature probably began with St. Francis of Assisi. Legend depicts him as preaching to the birds and fishes, and as negotiating a truce with a man-eating wolf on behalf of the city of Gubbio. These can be taken as indications of a genuinely affectionate attitude toward animals. St. Francis embodied this attitude in Christian doctrine with the argument that since God is the creator of all things on Earth, an unchallengeable point for the devout, all its creatures must be our brothers and sisters.³³ As time went on, a variety of intellectual and social forces amplified the idea of a benign and orderly natural world that reflected God's divine plan. It gained appeal, and indeed a measure of urgency, for many people during the wars resulting from the Reformation. We all worship the same Almighty God, it was argued, and thus should be able to live in peace despite our confessional differences.³⁴ Since we all live in the same natural world as well, the idea that the natural order proclaimed God's doctrine possessed an intrinsic appeal to those who favored this approach. As Thomas Browne wrote in 1643: "there are two Bookes from whence I collect my Divinity; besides that written one of God, another of his servant Nature, that universall and publike

30. HEINRICH FICHTEAU, *LIVING IN THE TENTH CENTURY: MENTALITIES AND SOCIAL ORDERS* 319-24 (Patrick J. Geary, trans., Univ. of Chicago Press 1991); BERNADETTE FILOTAS, *PAGAN SURVIVALS, SUPERSTITIONS AND POPULAR CULTURES IN EARLY MEDIEVAL PASTORAL LITERATURE* 117-19, 266-69 (2005); see VALERIE I. J. FLINT, *THE RISE OF MAGIC IN EARLY MEDIEVAL EUROPE* (1991).

31. See FLINT, *supra* note 30; ROBIN LANE FOX, *PAGANS AND CHRISTIANS* 674-81 (1986); KEITH THOMAS, *RELIGION AND THE DECLINE OF MAGIC* 27-57 (1971).

32. GREGORY OF TOURS: *LIVES OF THE FATHERS* (Edward James, trans., Liverpool University Press, 2d ed. 1991). See *id.* at 74 (revealing and routing Satan); 78 (repelling a Satan-sent dragon); 108 (exorcising a demon).

33. See EDWARD A. ARMSTRONG, *SAINT FRANCIS: NATURE MYSTIC* (1973); ROGER SORRELL, *ST. FRANCIS OF ASSISI AND NATURE TRADITION AND INNOVATION IN WESTERN CHRISTIAN ATTITUDES TOWARD THE ENVIRONMENT* (1988); JOHN HOLLAND SMITH, *FRANCIS OF ASSISI* (1972). The Saint's most famous prayer is the Cantic of the Creatures, which thanks God for giving us "Brother Sun," "Sister Moon" and all the rest of nature's glories. *Id.* at 173-76. He is also responsible for nativity scenes, which he initiated by bringing an actual cow and donkey into church for his Christmas sermon. The point was to make the miracle concrete for agricultural people, but the willingness to make the point in this manner implies a certain degree of affection for farm animals.

34. See, e.g., PIERRE BAYLE, *HISTORICAL AND CRITICAL DICTIONARY* (Richard H. Popkin, trans. 1991); JOHN LOCKE, *A Letter Concerning Toleration*, in *TWO TREATISES OF GOVERNMENT AND A LETTER CONCERNING TOLERATION* 211 (2003). See DIARMAID MACCULLOCH, *THE REFORMATION: A HISTORY* 674-79 (2003).

Manuscript, that lies expans'd unto the eyes of all; those that never saw him in the one, have discovered him in the other. . . ."³⁵

Some earlier versions of evolution could conceivably have been reconciled with this providential view of nature, but Darwinian evolution could not be. It revealed a savage, merciless world where the strong preyed upon the weak, where those whom Jesus blessed in His Sermon on the Mount served as dinner for "the ravenous wolves" whose "sheep's clothing"³⁶ added deception to savagery. In other words, Western Christianity, over the course of six centuries, had maneuvered itself into a position that was immediately and essentially in conflict with Darwin's discovery. The rejection of Darwinian theory, therefore, is not correctly viewed as an expression of ignorance, nor as the sort of unnecessary religious traditionalism that characterized the Catholic Church's reaction to Copernican theory. It is, instead, the assertion of a theological position in opposition to a scientific theory that directly contradicts it.

Climate change denial has no such theological origins. The idea that human beings are altering the environment in deleterious or disastrous ways does not contradict any element of Christian doctrine. There is, to be sure, a theme in Judeo-Christian thought stating that the Earth has been given to human beings for their use. The famous passage in the Biblical account of creation has God say to human beings: "Be fruitful and multiply; fill the Earth and subdue it; have dominion over the fish of the sea, over the birds of the air, and over every living thing that moves on earth."³⁷ Similar words appear in God's instructions to Noah following the Deluge.³⁸ But no one questions the idea that humans are using the Earth; that is, in fact, the basis of current characterization of modern times as a new geological era, the Anthropocene.³⁹ The question is the way

35. THOMAS BROWNE, *RELIGIO MEDICI* 18 (James Winny, ed., Cambridge University Press 1963) (1643) (§ 16). This view of nature continued, and in fact grew stronger, through the Romantic period. Wordsworth famously expressed the same sentiment: "And I could wish my days to be Bound each to each by natural piety." WILLIAM WORDSWORTH 246 (Stephen Gill ed., Oxford U. Press 1984).

36. *Matthew* 7:15.

37. *Genesis* 1:28. The passage goes on to suggest that humans have been given these things for consumption. See *Genesis* 1:29-30.

38. *Genesis* 9:1-3. God's words make more sense here, when He is speaking about the re-occupation of a previously populated world, than they do when addressed to a single man whose wants are entirely provided by a miraculous garden. The reason, of course, is that *Genesis*, and the *Pentateuch* generally, is a pastiche of multiple sources. See ANTHONY F. CAMPBELL & MARK A. O'BRIEN, *SOURCES OF THE PENTATEUCH: TEXTS, INTRODUCTIONS, ANNOTATIONS* (Fortress Press 1993); VICTOR P. HAMILTON, *THE BOOK OF GENESIS: CHAPTERS 1-17* (1990). See generally JOHN VAN SETERS, *THE PENTATEUCH: A SOCIAL SCIENCE COMMENTARY* (1999).

39. See, e.g., JEREMY DAVIES, *THE BIRTH OF THE ANTHROPOCENE* (2016); J.R. MCNEILL & PETER ENGELKE *THE GREAT ACCELERATION: AN ENVIRONMENTAL HISTORY OF THE*

that humans use it. Christian legal thought, beginning in the High Middle Ages, distinguished ownership, or *dominium*, from usufruct or use.⁴⁰ Since *dominium* was defined as the superior right, that is, a right against all others, it was clear that only God had *dominium* over the Earth.⁴¹ Human rights over the Earth were limited to use, and the common understanding was that the user could not destroy the value of the owner's property. The idea that we are stewards of a divinely created world has been the standard Christian view ever since.⁴²

Several climate change deniers have proposed the idea that it is presumptuous for human beings to believe that they can change the natural order by their own actions.⁴³ James Inhofe suggests this in his book, *The Greatest Hoax*, citing God's promise to Noah,⁴⁴ but he is uncharacteristically tentative about the idea, and with good reason. According to Christian doctrine, the claim that humans

ANTHROPOCENE SINCE 1945 (2014); JEDEDIAH PURDY, *AFTER NATURE: A POLITICS FOR THE ANTHROPOCENE* (2015).

40. See, e.g., ST. THOMAS AQUINAS, *SUMMA THEOLOGICA* IIa, IIae Q. 66.1 (Fathers of the English Dominican Province trans., 1948) ("External things can be considered in two ways. First, as regards their nature, and this is not subject to the power of man, but only to the power of God, Whose mere will all things obey. Secondly, as regards their use, and in this way man has a natural dominion over external things. . . ."). See Janet Coleman, *Property and Poverty*, in *THE CAMBRIDGE HISTORY OF MEDIEVAL POLITICAL THOUGHT C. 350-C.1450*, 607, 638-39 (J.H. Burns, ed., 1988) (describing John of Paris' views on the difference between Church ownership of property and the Pope's use of that property); RICHARD TUCK, *NATURAL RIGHTS THEORIES: THEIR ORIGINS AND DEVELOPMENT* 13-31 (1979) (describing the fourteenth century debate about whether usufruct could be regarded as a type of *dominium*).

41. See, e.g., *Psalms* 24 ("The Earth is the Lord's, and all its fullness, the world and those who dwell within.").

42. See, e.g., Pope John Paul II, *Message of His Holiness Pope John Paul II For the Celebration of the Day of World Peace*, in *THIS SACRED EARTH: RELIGION, NATURE, ENVIRONMENT* 202-72 (Roger S. Gottlieb ed., 2d ed. 2004); ROGER D. SORRELL, *ST. FRANCIS OF ASSISI AND NATURE: TRADITION AND INNOVATION IN WESTERN CHRISTIAN ATTITUDES TOWARD THE ENVIRONMENT* (1988); Robin Attfield, *Christian Attitudes To Nature*, 44 *J. HIST. IDEAS* 369 (1983); Lynn White argues that Western Christianity, due to its essentially and uniquely "anthropocentric" emphasis, has permitted its followers to despoil the environment. Lynn White, *The Historical Roots of Our Ecological Crisis*, 155 *SCIENCE* 1203 (1967), reprinted in Gottlieb, *supra* note 42, at 192. That is not the same, however, as doctrinal support for despoliation.

43. See G. Elijah Dann, *Why Christians Can't Take Climate Change Seriously—Even When They Say They Do*, *HUFFINGTON POST* (Sept. 30, 2013), http://www.huffingtonpost.com/g-elijah-dann/christians-climate-change_b_3668179.html; Jack Jenkins, *Limbaugh: If You Believe in God, Then Intellectually You Cannot Believe in Global Warming*, *CLIMATE PROGRESS* (Aug. 14, 2013), <http://thinkprogress.org/climate/2013/08/14/2469341/limbaugh-christians-global-warming/>.

44. INHOFE, *supra* note 3, at 70. Inhofe qualifies his invocation with the caveat: "I do not pretend to be a biblical scholar. . . ." *Id.* God's promise to Noah is that the seasons will continue. See *Genesis* 8:22. This follows His statement that He will not "again destroy every living thing as I have done." *Genesis* 8:21. No one argues that climate change will actually eliminate the seasons (it is more likely to exaggerate them) nor that it will destroy all life on Earth. The more important scriptural point, however, is that God is speaking about what He will do, not what human beings will do.

cannot damage the environment borders on blasphemy because it would appear to deny the existence of evil. Whether one sides with Luther and Calvin in favor of predestination, or with Erasmus and Wesley in favor of free will, the ability of human to act in evil ways and produce evil effects is essential to Christian belief.⁴⁵ This is not to say, of course, that it is impossible to enlist religious discourse in support of climate change denial. The point, rather, is that climate change denial, unlike the rejection of Darwinian evolution, cannot be explained as being independently motivated by the religious beliefs of the deniers.

C. Apparent Exceptions: Conspiracy Theories

A cover story in the March, 2015 issue of National Geographic declared the surprising prevalence of science denial as a general social attitude.⁴⁶ The examples of this attitude, according to the story, included the rejection of anthropogenic climate change, GMO food, and Darwinian evolutionary theory, but also included doubts about reality of the moon landings, the reasons for fluoridating public drinking water, and the safety of vaccination.⁴⁷ It certainly seems plausible to attribute this latter set of views to skepticism about science and to associate it with climate change denial. Once again, however, careful scrutiny raises questions about the explanatory force of this categorization. Claims that the moon landings were faked and that fluoridated water and vaccination are designed to harm people generally fall within the category of conspiracy theories. Some conspiracy theories certainly appear to involve the denial of scientific truth, but such theories, considered as a whole, originate from different impulses. In addition, climate change denial does not fit comfortably within this category. To be sure, the declarations of climate change deniers, including Inhofe's book, often display the features of conspiracy theory. On reflection, however, it appears that climate change denial is enlisting the tropes of conspiracy theory in support of independently-established views, just as it has enlisted religious arguments.

45. See SAINT AUGUSTINE, THE CITY OF GOD 356-68 (Marcus Dods, trans., Modern Library ed. 1993) (XI-11-23); Aquinas, *supra* note 40, at 919-71 (1948) (I-II Q.74-85) For the controversy between Luther and Erasmus on free will, see ERASMUS & LUTHER: THE BATTLE OVER FREE WILL (Clarence H. Miller ed., Clarence H. Miller & Peter Macardle trans.) (2012) (containing Erasmus' A Discussion or Discourse Concerning Free Will and Luther's The Enslaved Will).

46. Joel Achenbach, *Why Do So Many Reasonable People Doubt Science?*, NAT'L GEOGRAPHIC, Mar. 2015, at 31.

47. *Id.*

Conspiracy theories are typically an account of an event or public course of action with the following characteristics:⁴⁸

- (1) the direct rejection of a widely accepted explanation or justification;
- (2) the attribution of the event or course of action to recondite, rather than merely alternative causes;⁴⁹
- (3) the assertion that these recondite causes are orchestrated by a powerful individual or small, organized group;
- (4) usually, the conclusion that the majority of people in the society are disadvantaged by the actions of this group, and always that the majority of people are being fooled.⁵⁰

The number of such theories in current or recent circulation, and the range of events that they concern, is vast. Active conspiracy theories attribute the World Trade Center attack to the U.S. government or a shadowy, world-wide organization,⁵¹ the Sandy Hook massacre to gun control advocates,⁵² the Oklahoma City bombing to the Clinton administration,⁵³ and the assassination of John F. Kennedy to the CIA, the Mafia, Fidel Castro, or Lyndon

48. Because the purpose here is to distinguish conspiratorial thinking from other approaches, rather than analyze this mode of thought as such, this definition is a bit more elaborate than ones that appear in leading monographs on the subject. See MICHAEL BARKUN, *A CULTURE OF CONSPIRACY: APOCALYPTIC VISIONS IN CONTEMPORARY AMERICA* 3 (2013) (“a *conspiracy belief* is the belief that an organization made up of individuals or groups was or is acting covertly to achieve some malevolent end”) (emphasis in original); MARK FENSTER, *CONSPIRACY THEORIES: SECRECY AND POWER IN AMERICAN CULTURE* 1 (2d ed. 2008) (“the conviction that a secret, omnipotent individual or group covertly controls the political and social order or some part thereof”); RICHARD HOFSTADTER, *The Paranoid Style in American Politics*, in *THE PARANOID STYLE IN AMERICAN POLITICS* 29 (2008) (“The central image is that of a vast and sinister conspiracy, a gigantic and yet subtle machinery of influence set in motion to undermine and destroy a way of life.”).

49. Michael Barkun usefully distinguishes between event conspiracies, which focus on an incident like the Kennedy assassination or the World Trade Center attack, and systemic conspiracies, which claim that the individuals or group in question is controlling the entire society. BARKUN, *supra* note 48, at 6.

50. As Jesse Walker points out, some conspiracy theories posit that the individuals or group in control are benevolent. See JESSE WALKER, *THE UNITED STATES OF PARANOIA: A CONSPIRACY THEORY* 133-53 (2013).

51. BARKUN, *supra* note 48, at 159-82.

52. *E.g.*, Jim Fetzer & Dennis Cimino, *Sandy Hook: Huge Hoax and Anti-Gun "Psy-Op"*, *VETERANS TODAY* (May 1, 2015), <http://www.veteranstoday.com/2015/05/01/sandy-hook-huge-hoax-and-anti-gun-psy-op/>; Makia Freeman, *33 Unanswered Questions on Sandy Hook's 3rd Anniversary*, *ACTIVIST POST* (Dec. 14, 2015), <http://www.activistpost.com/2015/12/33-unanswered-questions-on-sandy-hooks-3rd-anniversary.html>.

53. *E.g.*, Craig McKee, *Documentary A Nobel Lie Exposes Oklahoma City Bombing as a Government Black Op*, <https://truthandshadows.wordpress.com/2012/02/27/documentary-a-noble-lie-exposes-oklahoma-city-bombing-as-government-black-op/> (last visited Nov. 27, 2016); *The Truth About the Oklahoma City Bombing*, *THE ZONE OF TRUTH*, <http://nstarzone.com/OKC.html> (last visited Nov. 27, 2016).

Johnson.⁵⁴ They maintain that alien landings on Earth have been concealed by various governments, or that actual spaceships are secreted by the U.S. government in Roswell, New Mexico.⁵⁵ They warn about black helicopters with United Nations troops that are perched on our America's borders, ready to descend on us and subject us to foreign domination,⁵⁶ or that government-created concentration camps, scattered across the nation, stand ready to imprison all the advocates of freedom.⁵⁷

Various hypotheses have been advanced to explain the prevalence of conspiracy theories. In a famous essay, Richard Hofstadter identifies them as part of a "paranoid style" in American politics and attributes them to feelings of distress about the direction that society has taken.⁵⁸ Recent explanations focus more on civil society than politics. Mark Fenster argues that conspiracy theories emerge from popular culture and reflect the interpretive practices endemic to that culture.⁵⁹ Similarly, Jesse Walker sees these theories as connected to primal myths that have haunted the American worldview: the enemy outside, the enemy within, the enemy above, the enemy below, and clandestine benevolence.⁶⁰ Michael Barkun attributes conspiracy theories to a more specific cultural phenomenon that he describes as improvisational millennialism: urban legends or folklore that flourish when large quantities of information are available and authority structures have become attenuated.⁶¹

None of these explanations have very much to do with science denial, it will be observed, and indeed, most of the events and policies that have been the subject of conspiracy theories have almost nothing to do with science. Hofstadter's use of the term "paranoid" may appear pseudo-clinical or disparaging, but he certainly seems right in identifying conspiracy theories as a style, or a mode of thought. As such, they can attach to virtually any event, drawing their accusations from the prevailing culture. The most distinctive feature of conspiracy theories is that they involve a pervasive skepticism about official or conventional explanations and

54. *E.g.*, ROGER STONE, *THE MAN WHO KILLED KENNEDY: THE CASE AGAINST LBJ* (2014); LAMAR WALDRON, *THE HIDDEN HISTORY OF THE JFK ASSASSINATION* (2013).

55. BARKUN, *supra* note 48, at 82-88.

56. *Id.* at 70-72.

57. *Id.* at 72-76. BARKUN, *supra* note 48, provides a comprehensive catalogue of current conspiracy theories. *See also* WALKER, *supra* note 50.

58. HOFSTADTER, *supra* note 48.

59. *See* FENSTER, *supra* note 48, at 279-89.

60. WALKER, *supra* note 50.

61. BARKUN, *supra* note 48, at 18-29.

propose an alternative that has been hidden from view.⁶² In order to do so, the theory must accept the prevailing concept of truth and argue that the standard explanation is false by the criteria of that concept.

Until the twentieth century, not surprisingly, conspiracy theories in the Western world were framed in religious terms. The conspirators, whatever form they took, were assumed to be in league with Satan. This was of course the motivating belief that led to the Salem witch trials of 1692.⁶³ Britain's Gordon riot of 1780 was triggered by the fear that a group of Catholics in the military were engineering the establishment of an absolutist Catholic monarchy.⁶⁴ The Anti-Masonic movement, which was sufficiently widespread to become an important political party during the late 1820s and early 1830s, seems to have been primarily motivated by the perceived elitism of the Masons, but dressed up its attack with charges of Satanism and impiety.⁶⁵ In other words, the conspiracy theories of the pre-modern era did not deny the existence of God or even, in most cases, the divinity of Christ. Instead, they spoke in terms of these well-accepted truths and used them—or an idiosyncratic interpretation of them—to refute whatever more specific explanation the conspiracy theorist was challenging.

In the modern world, our concept of truth is derived from natural science. Consistent with that cultural reality, contemporary conspiracy theories generally do not question the validity of science, but rather attempt to use science to call some standard account of a particular phenomenon into question.⁶⁶ As Hofstadter noted,

62. See *supra* note 48.

63. See EMERSON W. BAKER, *A STORM OF WITCHCRAFT: THE SALEM TRIALS AND THE AMERICAN EXPERIENCE* (2014); PETER CHARLES HOFFER, *THE SALEM WITCHCRAFT TRIALS: A LEGAL HISTORY* (1997); MARION L. STARKEY, *THE DEVIL IN MASSACHUSETTS: A MODERN INQUIRY INTO THE SALEM WITCH TRIALS* (1949). The event was dramatized by ARTHUR MILLER, *THE CRUCIBLE* (1955).

64. See generally *THE GORDON RIOTS: POLITICS, CULTURE AND INSURRECTION IN LATE EIGHTEENTH CENTURY BRITAIN* (Ian Haywood & John Seed eds., 2012); Christopher Hibbert, *King Mob: The London Riots of 1780* (1989). The Gordon Riots are memorably depicted in CHARLES DICKENS, *BARNABY RUDGE* (1841). The eponymous leader of the riot, Lord George Gordon, was imprisoned for treason but acquitted. He then converted to Judaism, taking the name Yisrael bar Avraham Gordon. See YIRMEYAHU BIRMAN, *LORD GEORGE GORDON* (1992).

65. HOFSTADTER, *supra* note 48, at 17-18. On the Anti-Masonic Party, see DANIEL WALKER HOWE, *WHAT HATH GOD WROUGHT: THE TRANSFORMATION OF AMERICA, 1815-1848*, at 268-70 (2007); SEAN WILENTZ, *THE RISE OF AMERICAN DEMOCRACY: JEFFERSON TO LINCOLN 272-79* (2005). The Anti-Masons were the first party to hold a national convention, and are sometimes credited with initiating modern political party structure. See ROBERT P. FOMISANO, *FOR THE PEOPLE: AMERICAN POPULIST MOVEMENTS FROM THE REVOLUTION TO THE 1850S*, at 141-58 (2008).

66. Control of the entire society—Barkun's systemic conspiracies, see BARKUN, *supra* note 48, at 6—may not seem particular, but they are in comparison to the validity of science. Their exposure, and the defeat of the supposedly controlling force, would leave the scientific method intact.

"[o]ne should not be misled by the fantastic conclusions that are so characteristic of this political style into imagining that it is not, so to speak, argued out along factual lines."⁶⁷ To the contrary, conspiracy theories typically begin with "defensible assumptions and with a careful accumulation of facts, or at least what appear to be facts, and to marshal these facts toward an overwhelming 'proof' of the particular conspiracy that is to be established."⁶⁸ Often, in our modern world, these facts will be scientific ones. Even a cursory glance at the websites presenting conspiracy theories about the Kennedy assassination, the Oklahoma City bombing, or the World Trade Center attack will reveal a plethora of scientific-sounding data, some quite sophisticated, about ballistics, explosives, videography, and other technical matters, mixed in with political and social analysis that is often the more jejune aspect of the enterprise. In other words, conspiracy theories tend to use science—our prevailing standard of truth—rather than denying it.

Climate change denial is too broad-based to be classified as a conspiracy theory. First, the explanation it denies is not dominant in the society, although it is dominant among scientists, which is one reason why it is so often characterized as science denial.⁶⁹ Second, not all the deniers attribute the view that they reject to recondite causes orchestrated by a small, secretive group; in many cases, the enemy is identified as liberals, a group that is neither small nor secretive. There seems little question, however, that much of the climate change denial literature has at least a flavor of conspiracy theory. James Inhofe, for example, comes fairly close to a full-blown conspiracy theory; his book is actually subtitled "How the Global Warming Conspiracy Threatens Your Future."⁷⁰ In an appendix, he suggests that the United Nations, or more specifically "globalist elites [working] within the United Nations," have concocted the idea of human-induced climate change, together with the idea of sustainable development, because they want total control of the Earth's resources.⁷¹

67. HOPSTADTER, *supra* note 48, at 35.

68. *Id.* at 36.

69. *See supra*, nn. 8, 9.

70. INHOFE, *supra* note 3. The cover design, attributed to Mark Karis, shows the torso of a man in a suit and tie with his two hands hovering over a glowing image of the Earth, about the size of a bowling ball. *Id.* Presumably, some implication of fakery is intended, but the illustration is hard to interpret. The man seems like a magician, in which case the accidental implication is not that he is fabricating the account of climate change, but that he is actually causing it -- a position not too far from the one that most scientists endorse.

71. INHOFE, *supra* note 3, at 206, 214. This is a somewhat confusing claim, however, given that Inhofe devotes most of his book to attacks on Barack Obama, Barbara Boxer, Al Gore and American environmental groups, none of whom can plausibly be regarded as part of "the globalist elites. . . within the United Nations." *Id.* at 206.

Like conspiracy theories in general, climate change deniers do not condemn their opponents for using science, but rather endorse or even glorify science and condemn their opponents for using it incorrectly. Although Inhofe focuses on politics, he clearly asserts that scientific evidence does not support the claim that anthropogenic climate change is occurring.⁷² Other leading denial books rely heavily on scientific claims; in fact, it is fair to say that the main theme of these books is that scientific evidence refutes the conclusion that anthropomorphic climate change is a reality.⁷³ These books are produced by members of the cultural elite, however, and may be regarded as attempting to shape public opinion rather than reflecting it. A better reflection of general public attitudes may be the websites claiming that climate change or global warming is a hoax.

To take the websites generated by the prompt "global warming hoax,"⁷⁴ the first seven that endorse this view all rely heavily on scientific claims.⁷⁵ They assert that unbiased scientists have

72. *Id.* at 21-52. One of his sections headings in the cited chapter is: "Catastrophic Global Warming Based on Fear, Not Science." *Id.* at 21. While one of his sources is the novelist Michael Crichton, *id.* at 40-46, others are in fact scientific studies.

73. *See, e.g.*, TIM BALL, *THE DELIBERATE CORRUPTION OF CLIMATE SCIENCE* (2014); FRAY, *supra* note 2020; SOLOMON, *supra* note 2020; STEYN, *supra* note 2020; SUSSMAN, *supra* note 21. The authors are also anxious to establish their own scientific credential, or in the case of SOLOMON, *supra* note 20, the credentials of the deniers whom he praises. Sussman describes himself as a "meteorologist" in the subtitle of his book on Climategate ("A Veteran Meteorologist Exposes the Global Warming Scam"). SOLOMON, *supra* note 20. A "meteorologist" generally refers to a scientist, that is, someone with a university degree. *See Meteorologist*, RANDOM HOUSE DICTIONARY (Random House 2d ed. 1987) ("meteorology: the science dealing with the atmosphere and its phenomena including weather and climate"). In fact, Sussman, according to his own website, was a television weather reporter and is presently a talk show host. *About Brian*, BRIANSUSSMAN.com, <http://www.briansussman.com/biography/> (last visited Nov. 27, 2016).

74. Google does not reveal its algorithm for ordering the sites that are generated by a prompt, but it is known that the algorithm is generated by the number of times the site is accessed. *See Pagerank*, WIKIPEDIA, <https://en.wikipedia.org/wiki/PageRank> (last visited Nov. 27, 2016) ("The Google Toolbar long had a PageRank feature which displayed a visited page's PageRank as a whole number between 0 and 10 . . . Google has not disclosed the specific method for determining a Toolbar PageRank value . . ."). A rough estimate of the hit frequency can be derived from Zipf's Law of linguistic distribution, which is: where N is the number of elements, k is the rank of a given element and s is the exponent that characterizes their distribution. *See* CHRISTOPHER D. MANNING, PRABHAKAR RAGHAVAN & HINRICH SCHÜTZ, *INTRODUCTION TO INFORMATION RETRIEVAL* 82-96 (2008); CHRISTOPHER D. MANNING & HINRICH SCHÜTZ, *FOUNDATIONS OF STATISTICAL NATURAL LANGUAGE PROCESSING* 23-35 (1999); M.E.J. Newman, *Power Laws, Pareto Distributions and Zipf's Law*, 46 *CONTEMP. PHYSICS* 323 (2007). We do not know the number of elements, but Zipf's Law generates the approximation that the n th most common element will occur $1/n$ as often as the first. Thus, the twelfth cite (the one that is past the endpoint of this survey) will be accessed only 2.7% as often as the first eleven, and the proportion will decline from there.

75. As of Apr. 20, 2016, the first two sites generated by the prompt "global warming hoax" were refutations of the hoax claim by INSIDE CLIMATE NEWS, <http://insideclimate-news.org>, and CLIMATE PATH, <http://www.climatepath.org>. The fourth site was a Wikipedia article entitled "Global Warming Conspiracy Theory." The fifth site supported the hoax idea,

concluded that human-induced climate change is not occurring and that reports to the contrary are distorted, or that the scientists who support the idea of global warming are motivated by pecuniary or ideological considerations that impair their objective judgment. The most frequently accessed hoax site declares:

You've probably heard over and over that 99% of scientists believe in global warming well the opposite is true [*sic*]. That talking point came from a study where only 75 scientists say they believe in global warming on the other hand over 31,000 scientists have signed a petition saying they don't believe in Catastrophic Man-Made Global Warming [*sic*].⁷⁶

The next site, after an extended discussion of the reasons why scientists have rallied around a false idea, concludes: "Global Warming. It is a hoax. It is bad science."⁷⁷ The following one asserts: "The satellite data purported to show a warming 'trend' over the last hundred years has been fraudulently altered to show a warming trend where none exists."⁷⁸ Next comes a site titled "Friends of Science" which begins by reporting on the "HadCRUT3 surface

but it was only a compendium of other sites or documents found on the Internet. The third and sixth through eleventh sites, *i.e.*, the seven most frequently accessed hoax sites making specific claims of one sort or another, were as follows:

(3) Elmer Beaugard, *Top Ten Reasons Climate Change is a Hoax*, GLOBAL CLIMATE SCAM.COM (Jan. 23, 2015), <http://www.globalclimatescam.com/opinion/top-ten-reasons-climate-change-is-a-hoax/>.

(6) John Coleman, *The Amazing Story Behind the Global Warming Scam*, CLIMATE CHANGE DISPATCH (May 15, 2009), <http://www.climatechangedispatch.com/the-amazing-story-behind-the-global-warming-scam.html>.

(7) Mike Adams, *Global Warming Hoax Unravels . . . Globalist science fraud engineered to control humanity, not save it*, NATURAL NEWS (Dec. 2, 2015), http://www.naturalnews.com/052179_global_warming_science_fraud_globalist_control_agenda.html.

(8) *Common Misconceptions About Global Warming*, FRIENDS OF SCIENCE, <http://www.friendsofscience.org/index.php?id=3> (last visited Nov. 27, 2016).

9. Jason Taylor, *'Global warming the greatest scam in history' claims founder of Weather Channel*, EXPRESS (June 9 2015), <http://www.express.co.uk/news/clarifications-corrections/526191/Climate-change-is-a-lie-global-warming-not-real-claims-weather-channel-founder>.

(10) James Delingpole, *Climate Change: The Hoax That Costs Us \$4 Billion a Day*, BREITBART (Aug. 8, 2015), <http://www.breitbart.com/big-government/2015/08/08/climate-change-the-hoax-that-costs-us-4-billion-a-day/>.

(11) Peter Ferrara, *The Period of No Global Warming Will Soon Be Longer than the Period of Actual Global Warming*, FORBES (Feb. 24, 2014, 10:55 AM), <http://www.forbes.com/sites/peterferrara/2014/02/24/the-period-of-no-global-warming-will-soon-be-longer-than-the-period-of-actual-global-warming/#5e99fe258bf0>.

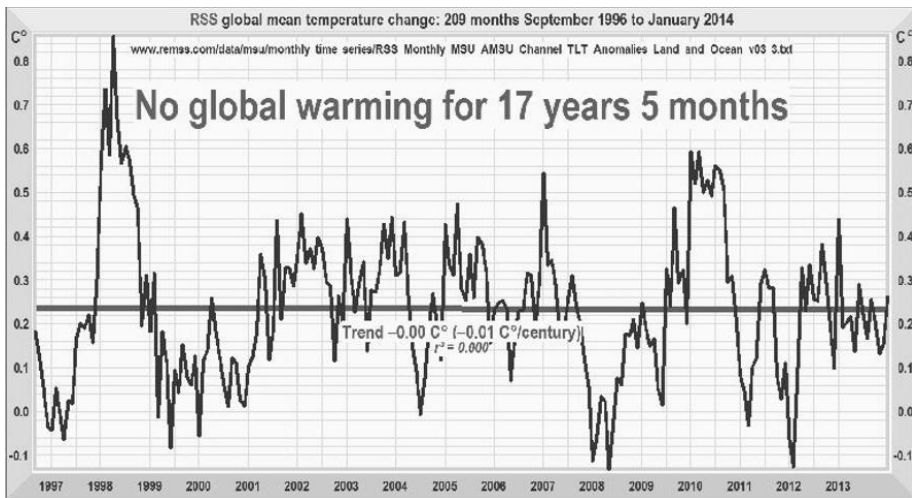
76. Beaugard, *supra* note 75 (emphasis in original).

77. Coleman, *supra* note 75.

78. Adams, *supra* note 75 (emphasis in original)

temperature index, produced by the Hadley Centre of the UK Met Office and the Climate Research Unit of the University of East Anglia," and concludes that "[s]atellite, weather balloons and ground stations all show cooling since 2001."⁷⁹

This is hardly discourse that can be described as science denial.⁸⁰ Of course, the scientific claims in these sites are all fabricated or distorted. To take just one example, an article published by Forbes, a reputable business news magazine, includes the following graph to demonstrate that, as the article's title asserts, "the period of no global warming will soon be longer than the period of actual global warming."⁸¹



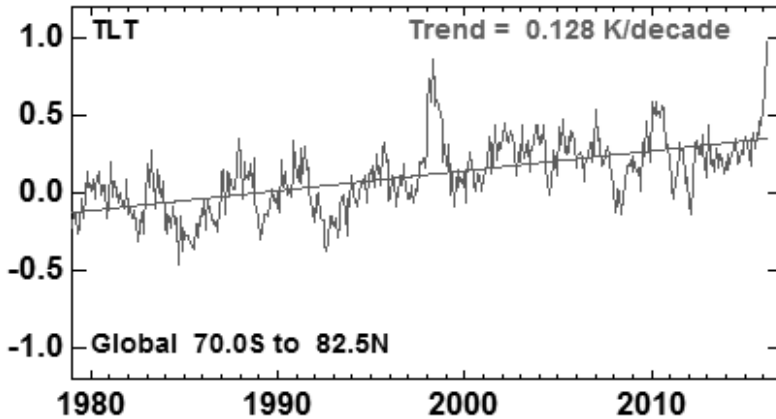
According to the satellites whose data are processed by Remote Sensing Systems, Inc., the longest continuous period without any global warming since the record began in January 1979 is 17 years 5 months, or 209 successive months, from September 1996 to January 2014 inclusive. Taking the mean of all five principle global temperature data sets (GISS, HadCRUT4, NCDC, RSS, and UAH), there has been zero global warming for 13 years. On the HadCRUT4 dataset there has been no global warming distinguishable from the published measurement, coverage, and bias uncertainties for 17 years 6 months. On the RSS dataset, there has been no statistically-significant warming at 95% confidence for 24 years 6 months. The Central England Temperature Record, the world's oldest, shows no warming at all for 25 years.

79. FRIENDS OF SCIENCE, *supra* note 75.

80. Rejection of a widely accepted scientific conclusion is not science denial; it is the way science progresses. The contemporary theory of scientific inquiry that supports this point is THOMAS S. KUHN, *THE STRUCTURE OF SCIENTIFIC REVOLUTIONS* (University of Chicago Press 2d ed. 1970). But it is not necessary to invoke recent epistemology; the standard account of scientific inquiry is that all theories must be open to refutation in order to be considered science, and that such refutations regularly occur. See KARL POPPER, *THE LOGIC OF SCIENTIFIC INQUIRY* (Hutchinson & Co. First English ed. 1959).

81. Ferrara, *supra* note 75.

As can be seen, this graph, which appears in another hoax site as well,⁸² provides its source, Remote Sensing Systems, a scientific research institution that measures atmospheric temperatures through satellite data.⁸³ The graph does in fact appear on the RSS website, as follows:



It would appear that what the Forbes article has done is to take the last segment of this graph, giving data for the years after 1997, and rotate it so that the upward trend of the original average line is presented as a horizontal, that is, showing no increase in average temperature. Conceivably, the orientation of the average line in the original graph could change when the data is averaged over a shorter period, but the author of the article, Peter Ferrara, gives no indication that he has performed such a calculation. Instead, it seems that he has simply rotated the average temperature line, making use of the reader's tendency to commit the cognitive error of paying more attention to the high and low points of the data line, rather than to the areas that the line encloses and, in this case, that determine average temperature.⁸⁴

82. The ninth most accessed hoax site, Tom Luongo, *Scientist Confesses: "Global Warming a \$22 Billion Scam,"* NEWSMAX FINANCE, <http://www.newsmax.com/Finance/MKT-News/Global-Warming-climate-change/2014/11/17/id/607827/>.

83. *Upper Air Temperature*, REMOTE SENSING SYSTEMS, <http://www.remss.com/measurements/upper-air-temperature> (last visited Nov. 27, 2016).

84. At the time Ferrara accessed the RSS website, it contained the following statement, now on a separate website: "Over the past 35 years, the troposphere has warmed significantly. The global average temperature has risen at an average rate of about 0.13 degrees Kelvin per decade (0.23 degrees F per decade). Climate models cannot explain this warming if

To summarize, the climate change deniers' affinity with conspiracy theory does not indicate that they are motivated by hostility to science. Rather, it indicates an affinity for science and an inclination to use science as a means of combatting a prevailing explanation. The fact that their scientific assertions range from inaccurate to ignorant to consciously distorted does not show that they are rejecting science itself, but rather that they are trying to use science to establish arguments that are unrelated to any particular view about science itself. In other words, the sources of climate change denial cannot be found in the deniers' attitude toward science, but must be sought elsewhere.

III. CLIMATE CHANGE DENIAL AND REGULATION

A. *Climate Change Denial as Regulation Phobia*

A persistent theme in the climate change denial literature, among mainstream figures as well as conspiracy theorists, involves the impact on our society that would result if the problem were to be acknowledged. As Naomi Klein points out, the deniers seem to be in full agreement with their most fervent opponents that controlling climate change, if the phenomenon is in fact occurring, would require extensive regulatory intervention and demand extensive transformation of our economic and social structure.⁸⁵ But while those concerned about climate change are willing, and sometimes eager, to adopt such policies, the deniers regard them with revulsion and are particularly incensed about the equanimity or enthusiasm with which their opponents greet the possibility.⁸⁶ This motivation for climate change denial has been extensively noted, perhaps as extensively as science denial.⁸⁷ Like science denial, however, the

human-caused increases in greenhouse gases are not included as input to the model simulation. The spatial pattern of warming is consistent with human-induced warming. . . . But . . . The troposphere has **not** warmed quite as fast as most climate models predict." (emphasis in original, statements' formatting altered for inclusion in footnotes). *Climate Analysis*, REMOTE SENSING SYSTEMS, <http://www.remss.com/research/climate> (last visited Nov. 27, 2016).

85. NAOMI KLEIN, *THIS CHANGES EVERYTHING* 31-63 (2014).

86. INHOFE, *supra* note 3, at 147-63; see STEVE MILLOY, *GREEN HELL: HOW ENVIRONMENTALISTS PLAN TO CONTROL YOUR LIFE AND WHAT YOU CAN DO TO STOP THEM* (2009); Charles Krauthammer, *Carbon Chastity*, WASH. POST (May 30, 2008), http://articles.washingtonpost.com/2008-05-30/opinions/36813249_1_socialism-carbon-chastity-co2into; George F. Will, *Global Warming Advocates Ignore the Boulders*, WASH. POST (Feb. 21, 2010), <http://www.washingtonpost.com/wp-dyn/content/article/2010/02/19/AR2010021903046.html>. This theme is also voiced in a novel, MICHAEL CRICHTON, *STATE OF FEAR* (2004).

87. See, e.g., HOFFMAN, *supra* note 10, at 41; KLEIN, *supra* note 85; CHRIS MOONEY, *THE REPUBLICAN WAR ON SCIENCE* (2006); ORESKES & CONWAY, *supra* note 2, at 169-215; Jean-Daniel Collomb, *The Ideology of Climate Change Denial in the United States*, 9 EUR. J. AM. STUDIES Doc. 5 (2014); Michael Gerson, *Climate Change and the Culture War*, WASH.

hostility to government regulation is a complex social attitude that requires further analysis in order to be properly understood.

It is commonplace of contemporary American politics that progressives are in favor of the sorts of regulation that controlling climate change would demand, while conservatives are opposed to it.⁸⁸ As George Lakoff has pointed out, however, these positions cannot be explained in terms of support and opposition to governmental power or authority in general.⁸⁹ Progressives are generally opposed to regulatory laws that prohibit abortion or that punish consensual sexual behavior, while conservatives generally favor such laws. Nor can the prevailing positions be explained as resistance to public expenditures; conservatives rail against the cost of social and environmental programs, but they are generally willing to support expenditures for the military, prisons, and the war on drugs, while progressives bridle at the scale and scope of such expenditures.⁹⁰ The reason why philosophically-consistent libertarianism, which opposes all these forms of regulation, has never achieved any political traction in the U.S. is that it is simply orthogonal to our prevailing spectrum of belief.⁹¹

Lakoff attributes the apparent contradictions in the progressive and conservative belief systems to people's conceptual or metaphorical frameworks.⁹² Society in general is simply too large and too complex to be grasped, he notes, so people resort to the heuristic of envisioning it in terms of a much more familiar and manageable system of governance, namely the family.⁹³ Their attitude toward public policy is then shaped by the kind of parenting to which they

POST (Jan. 16, 2012), http://www.washingtonpost.com/opinions/climate-and-the-culture-war/2012/01/16/gIQA6qH63P_story.html; Yuko Heath & Robert Gifford, *Free-Market Ideology and Environmental Degradation: The Case of Belief in Global Climate Change*, 38 ENVIRONMENT & BEHAVIOR 48 (2006).

88. See, e.g., Riley E. Dunlap & Aaron M. McCright, *A Widening Gap: Republican and Democratic Views on Climate Change*, 50 ENVIRONMENT 26 (2008); P. Sol Hart & Erik C. Nisbet, *Boomerang Effects in Science Communication: How Motivated Reasoning and Identity Cues Amplify Opinion Polarization About Climate Mitigation Policies*, 39 COMMUNICATION RESEARCH 701 (2012). Note that the term "liberal" is often used for political progressives, but since it is also used in political philosophy for libertarianism, and since the following discussion turns on the distinction between progressive and libertarian attitudes, "liberal" will be avoided in this context.

89. GEORGE LAKOFF, *MORAL POLITICS: HOW LIBERALS AND CONSERVATIVES THINK* (2d ed. 2002).

90. See *id.* at 143-52.

91. For an extreme libertarian position, see, e.g., ROBERT NOZICK, *ANARCHY, STATE, AND UTOPIA* (1974) (arguing that the only legitimate use of state authority is to maintain order).

92. LAKOFF, *supra* note 89, at 3-64. See also GEORGE LAKOFF, *WOMEN, FIRE AND DANGEROUS THINGS: WHAT CATEGORIES REVEAL ABOUT THE MIND* (1987).

93. *Id.* at 153-61.

are emotionally inclined.⁹⁴ Conservatives are people who favor the Strict Father model, which strives to inculcate moral behavior, emphasizes obedience, administers punishment for wrongdoing, and views the world as a threatening place that the child must learn to manage. Progressives are those who favor the Nurturant Parent model, which centers on the child's personal development, emphasizes mutual affection, relies on insight and internalized norms for control, and sees the world as an arena of opportunity.⁹⁵

The advantage of Lakoff's theory is that it is able to explain varying attitudes toward regulation, to go beyond global characterizations of political positions and explain why progressives favor certain kinds of regulation and conservatives favor other kinds. In order to understand climate change denial, however, a further distinction is required. It is reasonably accurate to say that conservatives are opposed to, or at least skeptical about, regulations that impose worker safety, environmental, and consumer protection restrictions on private enterprise. But conservative attitudes toward regulations designed to combat global warming seem to be a separate division of this general category. The difference is that conservatives, and specifically the climate change deniers, reject the idea of this regulation in its entirety.

Few conservatives would deny that workers sometimes get injured, that industrial activity can damage the environment, and that consumers are sometimes defrauded or misled, nor would they deny the general proposition that poverty creates human misery.⁹⁶ They often differ with progressives about the extent to which the market will correct these problems, but they do not deny that market failures due to monopolization, information asymmetries and externalities exist.⁹⁷ Their most extreme conservative claim is

94. See *id.* at 143-61. This is based on Lakoff's more general theory about the metaphorical character of human thought. See LAKOFF, WOMEN, FIRE, AND DANGEROUS THINGS, *supra* note 92.

95. See LAKOFF, *supra* note 89, at 65-140. See also MARK JOHNSON, MORAL IMAGINATION: IMPLICATIONS OF COGNITIVE SCIENCE FOR ETHICS (1994) (arguing that moral decision making is not a process of following rules but a series of cognitive and metaphorical constructs).

96. For accounts of these problems by writers who can generally be identified as progressives or moderates, see, e.g., STEPHEN BREYER, REGULATION AND ITS REFORM (1982); Joseph Stiglitz, *Regulation and Failure*, in NEW PERSPECTIVES ON REGULATION 11 (David A. Moss & John A. Cisternino eds., 2009).

97. See, e.g., GARY BECKER, THE ECONOMIC APPROACH TO HUMAN BEHAVIOR 17-29 (1976) (although the market will usually counteract discrimination against a large minority group, discrimination against small groups can be externalized); ROBERT H. BORK, THE ANTI-TRUST PARADOX (2d ed. 1993) (antitrust law should continue to prohibit monopolistic behavior that harms consumers, such as horizontal mergers or deliberate predation); R.H. COASE, THE FIRM, THE MARKET, AND THE LAW 95-156 (1990) (discussing prevalence of externalities).

that governmental efforts to correct these problems are a form of tyranny, a mode of politically illegitimate action.⁹⁸ More often, conservatives are willing to acknowledge that government may legally or morally respond to economic and social problems, but argue that, as an empirical matter it is unlikely to succeed in resolving them, first because it is inefficient, which is to say that its actions are not disciplined by market forces,⁹⁹ and second because it is readily dominated by organized special interest groups.¹⁰⁰ This cure-is-worse-than-the-disease approach thus focuses conservatives' disagreement with progressives on the range of possible solutions, rather than the existence of the problem.

Mainstream conservative positions are quite distinct from conspiracy theories; in fact, they seem further removed from such theories than mainstream progressive positions. The problem with regulation, according to conservatives, is not nefarious plots but basic human nature. People are primarily motivated by their own material self-interest; their divergences from that behavior are usually the result of laziness, ignorance, or cognitive limitations, or are induced by counter-productive government policy.¹⁰¹ As Adam Smith first observed, the market produces social benefit because it harnesses this basic motivation.¹⁰² Regulatory interference with the

98. *See, e.g.*, MILTON FRIEDMAN, *CAPITALISM AND FREEDOM* (1962) (treating social security, occupational licensing, and restrictions on trade as denials of basic human liberty); F.A. HAYEK, *THE ROAD TO SERFDOM* (1944) (arguing that all government planning and centralized regulation is a form of tyranny); NOZICK, *supra* note 91 (arguing that the only legitimate function of government is to maintain public order).

99. *See* ANTHONY DOWNS, *INSIDE BUREAUCRACY* 24-25 (1967); *see also* WILLIAM A. NISKANEN, JR., *BUREAUCRACY AND REPRESENTATIVE GOVERNMENT* (1971); JAMES Q. WILSON, *BUREAUCRACY: WHAT GOVERNMENT AGENCIES DO AND WHY THEY DO IT* (1989).

100. *See, e.g.*, MORRIS FIORINA, *CONGRESS: KEYSTONE OF THE WASHINGTON ESTABLISHMENT* (Yale University Press 2d ed., 1989); DAVID MAYHEW, *CONGRESS: THE ELECTORAL CONNECTION*, (Yale University Press 2d ed., 2004); MANCUR OLSON, *THE LOGIC OF COLLECTIVE ACTION: PUBLIC GOODS AND THE THEORY OF GROUPS* (Harvard University Press 2d ed., 1971).

101. *See, e.g.*, GARY S. BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOR* (1976) (explicating the way that self-interested and strategic motivations produce behavior in non-market settings); GARY S. BECKER & KEVIN M. MURPHY, *SOCIAL ECONOMICS: MARKET BEHAVIOR IN A SOCIAL ENVIRONMENT* (2000) (same); ARTHUR C. BROOKS, *THE CONSERVATIVE HEART: HOW TO BUILD A FAIRER, HAPPIER, AND MORE PROSPEROUS AMERICA* 53-106 (2015) (discussing the disadvantages of welfare and the dignitary benefits of work); *See generally* MICHEL C. JENSEN, *FOUNDATIONS OF ORGANIZATIONAL STRATEGY* 11-50 (1998) (developing theory of organizational behavior on the based on model of human behavior as rational and self-interested); JOHN VON NEUMANN & OSKAR MORGENSTERN, *THE THEORY OF GAMES AND ECONOMIC BEHAVIOR* 15-44 (1st ed. 1944) (explicating basic concept of rational, self-interested behavior). For a description of the evolution of these beliefs in response to the New Deal, *see* KIM PHILLIPS-FEIN, *INVISIBLE HANDS: THE BUSINESSMEN'S CRUSADE AGAINST THE NEW DEAL* (W.W. Norton & Co. reprint ed., 2010).

102. *See* ADAM SMITH, *THE WEALTH OF NATIONS* 119 (Andrew Skinner ed., Penguin Classics 1986) (1776) ("It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love . . .").

market is a risky enterprise because it relies on our ability to detach people from their individual self-interest and expects them to act for the benefit of the general public.¹⁰³ They may do so when the danger is serious and the underlying morality is clear; we can expect individuals to protect the nation from attack, to combat criminal behavior, and to condemn dishonest business practices. In less serious and apparent circumstances, however, people are likely to revert to the protection or expansion of their own self-interest. Elected politicians will attempt to maximize their chance of reelection, and endorse regulatory programs that appeal to their constituents, whether or not they are effective.¹⁰⁴ Bureaucrats will want to obtain promotions, generate opportunities for future employment in the industry they are supposed to regulate, or simply obtain their salaries with minimal effort so that they can find satisfaction elsewhere.¹⁰⁵

In other words, the conservative belief regarding the counterproductive effects of regulation can be explained by basic features of human nature. The same set of attitudes that makes the market work in many circumstances makes governmental intervention in the market an uncertain proposition. There is no need to posit any sort of evil conspiracy, or indeed, any evil behavior at all, to account for these concerns.¹⁰⁶ It is progressives who are more likely to make claims that move in the direction of conspiracy theories.¹⁰⁷ First, they often question the efficiency of the market; they assert that small groups of powerful executives are manipulating it for their own advantage, and to the detriment of workers, consumers and the economy in general.¹⁰⁸ Second, they tend to attribute the failure of

103. See Ronald S. Warren, Jr., *Bureaucratic Performance and Budgetary Reward*, 24 PUBLIC CHOICE 51 (1975).

104. See, e.g., FIORINA, *supra* note 100; MAYHEW, *supra* note 100; OLSON, *supra* note 100100.

105. See NISKANEN, *supra* note 99 (self-interested bureaucrats generally try to maximize the budget of their agency); Jonathan Bendor, Serge Taylor & Roland Van Gaalen, *Bureaucratic Expertise versus Legislative Authority: A Model of Deception and Monitoring in Budgeting*, 79 AM. POL. SCI. REV. 1041 (1985) (bureaucratic behavior is determined by the interplay of budget maximizing and risk aversion).

106. See William J. Novack, *A Revisionist History of Regulatory Capture*, in PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 25 (Daniel Carpenter & David A. Moss eds., 2014); Richard A. Posner, *The Concept of Regulatory Capture: A Short, Inglorious History*, in PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 49 (Daniel Carpenter & David A. Moss eds., 2014).

107. Progressives being defined here simply as those who favor government regulation of business.

108. This was a dominant theme of journalists and historians allied with the Progressive Movement. See, e.g., LOUIS D. BRANDEIS, OTHER PEOPLE'S MONEY AND HOW THE BANKERS USE IT (1914); IDA M. TARBELL, THE HISTORY OF THE STANDARD OIL COMPANY (1904); see AILEEN GALLAGHER, THE MUCKRAKERS: AMERICAN JOURNALISM DURING THE AGE OF REFORM (2006); STEVE WEINBERG, TAKING ON THE TRUST: THE EPIC BATTLE OF IDA TARBELL

regulation, when such failures occur, to alliances between business leaders and government officials that undermine otherwise effective regulatory programs.¹⁰⁹ This is not to say that progressives are willing to endorse outright conspiracy theories. The main point is that their positions are often more suggestive of such theories than the positions of mainline conservatives.

From this perspective, climate change denial, although clearly anti-regulatory, is not typical of mainstream conservatism. Rather than acknowledging the existence of a problem, while arguing that regulatory responses should be used with caution, the current conservative position is the complete refusal to acknowledge that a problem exists in the first place.¹¹⁰ Given the scientific consensus,

AND JOHN D. ROCKEFELLER (2008). One area where this continues to resonate is antitrust policy. Few conservatives would deny that a true monopoly is a serious market failure that needs to be corrected; their argument is that antitrust policy should be directed to combatting these market failures, that is, those that impair consumer welfare, rather than protecting small or weaker businesses from the rigors of market competition. See ROBERT H. BORK, *THE ANTITRUST PARADOX* (1978). Progressives now concede this point, but tend to regard truly anticompetitive plotting as more common than conservatives do, and less readily corrected by market forces. See HERBERT HOVENKAMP, *THE ANTITRUST ENTERPRISE: PRINCIPLES AND EXECUTION* (2008).

109. MCGARRITY & WAGNER, *supra* note 19; Rachel E. Barkow, *Insulating Agencies: Avoiding Capture Through Institutional Design*, 89 TEX. L. REV. 15 (2010); Nicholas Bagley & Richard L. Revesz, *Centralized Oversight of the Regulatory State*, 106 COLUM. L. REV. 1260 (2006).

110. The statements of the leading candidates for the Republican Party's presidential nomination in 2016 can be reasonably regarded as a reflection of conservative views. Most significant, of course, are the views of the winner. In a speech billed as his major statement on energy policy (May 26, 2016, in Bismarck, N.D.), Trump announced the goal of American energy independence, a fixture of Republican policy since Reagan. To achieve this, he said, we need to extract and burn as much fossil fuel as possible. His comment about global warming was that "We're going to cancel the Paris climate agreement." Valerie Valcovici & Emily Stephenson, *Trump vows to undo Obama's Climate agenda in appeal to oil sector*, REUTERS (May 27, 2016), <http://www.reuters.com/article/us-usa-election-trump-energy-idUSKCN0YH2D9>. Trump had previously tweeted at least three statements about climate change, as follows:

(1) "This very expensive GLOBAL WARMING bullshit has got to stop. Our planet is freezing, record low temps, and our GW scientists are stuck in ice." Donald Trump (@realDonaldTrump), TWITTER (Jan. 1, 2014, 4:39 PM), <https://twitter.com/realDonaldTrump/status/418542137899491328>.

(2) "Ice storm rolls from Texas to Tennessee - I'm in Los Angeles and it's freezing. Global warming is a total, and very expensive, hoax!" Donald Trump (@realDonaldTrump), TWITTER (Dec. 6, 2013, 7:13 AM), https://twitter.com/realDonaldTrump/status/408977616926830592?ref_src=twsrc%5Etfw.

(3) "The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive." Donald Trump (@realDonaldTrump), TWITTER (Nov. 6, 2012, 11:15 AM), https://twitter.com/realDonaldTrump/status/265895292191248385?ref_src=twsrc%5Etfw.

He expressed a similar view in what can be charitably described as a discursive statement in a radio interview with Hugh Hewitt:

which conservatives are generally willing to accept in other areas, the stance that they maintain is simply irrational. No rational person refuses to adopt precaution in the face of serious threat, even if the scope of the threat is open to some question. Moreover, in order to reject the scientific consensus, conservatives must construct accounts that at least resemble, and perhaps endorse, outright conspiracy theories.¹¹¹ Their usual reliance on individual self-interest would tend to suggest that scientific unanimity in the face of countervailing evidence could not be maintained; it is only by

And I think [global warming is] very low on the list. So I am not a believer, and I will, unless somebody can prove something to me, I believe there's weather. I believe there's change, and I believe it goes up and it goes down, and it goes up again. And it changes depending on years and centuries, but I am not a believer, and we have much bigger problems.

Devin Henry, *Climate change: Where the GOP field stands*, THE HILL (Jan. 23, 2016), <http://thehill.com/policy/energy-environment/266716-climate-change-where-the-gop-field-stands>. Trump's chosen running mate, Mike Pence, wrote, in a statement posted on his campaign site in 2001: "Global warming is a myth. The [Kyoto] global warming treaty is a disaster. There, I said it." *Global Warming Disaster*, https://www.motherjones.com/files/screen_shot_2016-07-15_at_10.29.47_am.png (photographic reproduction of campaign document). In the same statement, he said that environmentalists were wrong to treat carbon dioxide as a danger because it is "a naturally occurring phenomenon in nature," and were wrong to oppose combustion of coal because it is a "natural mineral." *Global Warming Disaster*, https://www.motherjones.com/files/screen_shot_2016-07-15_at_10.29.47_am.png (photographic reproduction of campaign document). See Sy Mukherjee, *Donald Trump's Running Mate Has Some Truly Strange Views On Modern Science*, FORTUNE (July 15, 2016), <http://fortune.com/2016/07/15/mike-pence-donald-trump-science/>. Statements by leading candidates who were in contention with Trump were as follows:

Jeb Bush: "The climate is changing [but] I don't think the science is clear on what percentage is man-made and...what percentage is natural. It's convoluted. And for the people to say the science is decided on this is just really arrogant."

Ben Carson: "I'll tell you what I think about climate change. The temperature's either going up or down at any point in time, so it really is not a big deal."

Ted Cruz: "If you look to the satellite data in the last 18 years there has been zero recorded warming. Now the global warming alarmists, that's a problem for their theories. Their computer models show massive warming the satellite says it ain't happening. We've discovered that NOAA, the federal government agencies are cooking the books."

Marco Rubio: "Our climate is always changing. And what they have chosen to do is take a handful of decades of research and say that this is now evidence of a longer-term trend that's directly and almost solely attributable to manmade activity. I do not agree with that."

Rebecca Kaplan & Ellen Uchimiya, *Where the 2016 Republican candidates stand on climate change*, CBS NEWS (Sep. 1, 2015), <http://www.cbsnews.com/news/where-the-2016-republican-candidates-stand-on-climate-change/>. The views of two other candidates who never ranked among the leaders, Chris Christie and John Kasich, are discussed in note 119 *infra*.

111. This is the case with Inhofe, Trump, and Cruz. According to Inhofe, the organized group behind the conspiracy is the "globalist elites ... within the United Nations," INHOFE, *supra* note 3, at 206. According to Trump, it is the Chinese. Kaplan and Uchimiya, *supra* note 110. According to Cruz, it is "the federal government agencies." *Id.* The latter two are not classic conspiracy claims because the group being accused of recondite behavior in each case is hardly small ones, but they certainly resemble such theories.

virtue of nefarious collusion that the overwhelming majority of scientists could be induced to endorse a complete falsehood.

According to survey researchers, reactions of this sort occur with some frequency, and have been described as a boomerang effect. In response to factual information linked explicitly or implicitly to normative recommendations, recipients of the information adopt action orientations in direct opposition to the recommendation.¹¹² In some cases, the response is general; several studies have found that health warnings in cigarette advertisements can increase the smoking rate rather than decreasing it.¹¹³ In other cases, however, the boomerang effect occurs among a segment of the recipient population with particular normative or political predispositions. For example, another study concluded that Republicans reacted to recommendations for diabetes prevention programs based on factual data about the social determinants of diabetes by becoming increasingly opposed to such programs.¹¹⁴

P. Sol Hart and Eric C. Nisbet found that this same pattern applies to information about climate change.¹¹⁵ Their experiment provided information to a group of non-student adults about the

112. For general and more theoretical discussions of the effect, see Sahara Byrne & Philip Solomon Hart, *The Boomerang Effect: A Synthesis of Findings and a Preliminary Theoretical Framework*, 33 ANNALS OF THE INT'L COMMUNICATION ASSOC. 3 (2009); Melvin L. Snyder & Robert A. Wicklund, *Prior Exercise of Freedom and Reactance*, 12 J. EXPERIMENTAL SOC. PSYCH. 120 (1976).

113. See, e.g., L. Henrickson, A.L. Dauphinee, Y. Wang & S.P. Fortman, *Industry sponsored anti-smoking ads and adolescent reactance: test of a boomerang effect*, 15 TOBACCO CONTROL 13 (2006); Michael Hyland & James Birrell, *Government Health Warnings and the "Boomerang" Effect*, 44 PSYCH. REP. 643 (1979); see also Sahara Byrne, Daniel Linz & W. James Potter, *A Test of Competing Cognitive Explanations for the Boomerang Effect in Response to the Deliberate Disruption of Media-Induced Aggression*, 12 MEDIA PSYCH. 227 (2009) (violence intervention programs using violent media clips as examples); Brendan Nyhan & Jason Reifer, *When Corrections Fail: The Persistence of Political Misrepresentations*, 32 POL. BEHAVIOR 303 (2010) (news articles including corrections to politicians statements; opposite reaction described as "backfire effect").

114. Sarah E. Gollust, Paula M. Lantz & Peter A. Ubel, *The Polarizing Effect of News Media Messages About the Social Determinants of Health*, 99 AM. J. PUB. HEALTH 2160 (2009); see also James D. King & Jason B. McConnell, *The Effect of Negative Campaign Advertising on Vote Choice: The Mediating Influence of Gender*, 84 SOC. SCI. Q. 843 (2003) (negative political ads produce adverse reactions among women, but only after they are repeatedly exposed to such ads); David L. Paletz, Judith Koon, Elizabeth Whitehead & Richard B. Hagens, *Selective Exposure: The Potential Boomerang Effect*, 22 J. OF COMMUNICATION 48 (1972) (antiwar film produced adverse reaction from audience who members who were against the war before seeing the film); P. Wesley Schultz et al., *The Constructive, Destructive, and Reconstructive Power of Social Norms*, 5 PSYCHOLOGICAL SCI. 429 (2007) (normative messages about home energy conservation produced adverse reactions from those who were already taking such measures).

115. P. Sol Hart & Erik C. Nisbet, *Boomerang Effects in Science Communication: How Motivated Reasoning and Identity Cues Amplify Opinion Polarization About Climate Mitigation Policies*, 39 COMMUNICATION RES. 701 (2012).

negative health effects of continued global warming.¹¹⁶ While the information increased support for climate change mitigation among those subjects who identified themselves as Democrats, it produced a boomerang effect for those who identified themselves as Republicans: their support for mitigation policies decreased.¹¹⁷ The results of this experiment are consistent with more general observations for society as a whole. As Dan Kahan and his colleagues found, to state their conclusions inversely, political conservatives consistently ignore scientific evidence that demonstrates the reality of anthropogenic climate change.¹¹⁸

Outright denial of factual data may be a widespread phenomenon, as the boomerang effect studies indicate, but it requires explanation. Climate change deniers certainly subscribe to the general conservative view that regulatory responses to problems often produce negative consequences. However, this concern, although undoubtedly sincere on other issues, appears to be a post hoc rationalization with respect to climate change. The reason is that it would lead only to a debate about alternative solutions, not to a denial of the problem. This is in fact the position that some conservative elites have adopted;¹¹⁹ whether it is sincere or just

116. *Id.* at 708-11. The experiment was performed in a rural community in upstate New York. The information was written for the experiment, but it was based on factual data.

117. *Id.* at 714. The experiment also tested for the variable of social distance between the subjects and the purported victims, and found that this factor made a difference to Democrats, whose attitudes changed more when the victims were distant from themselves.

118. Dan Kahan et al., *The Polarizing Impact of Science Literacy and Numeracy on Perceived Climate Change Risks*, 2 NATURE CLIMATE CHANGE 732 (2012). The study conclusions disconfirmed the hypothesis that higher levels of education would render people more receptive to scientific data regarding climate change and found that political conservatives at all education levels were willing to ignore the data. *Id.* See also Brulle, Carmichael & Jenkins, *supra* note 10 (scientific information, like weather extremes, have little to no effect on public opinion).

119. It is notable that the two candidates for the Republican presidential nomination who specifically tried to portray themselves as moderates adopted this position, as opposed to the outright denial that the self-declared conservatives espoused, See *supra* note 110.

Chris Christie: "I think global warming is real. I don't think that's deniable. And I do think human activity contributes to it," Christie said at Republican dinner in Keene, New Hampshire in May. "The degree to which it contributes to it is what we need to have a discussion about."

John Kasich: "I happen to believe there is a problem with climate change. I don't want to overreact to it, I can't measure it all, but I respect the creation that the Lord has given us and I want to make sure we protect it."

Id. The Cato Institute, a conservative think tank, but one of the more sophisticated conservative voices in the nation, has also advanced the more moderate position. See Indur M. Goklany, *What to Do About Climate Change*, 609 CATO INSTITUTE POLICY ANALYSIS (Feb. 2008), <http://www.cato.org/sites/cato.org/files/pubs/pdf/pa-609.pdf>; Sallie James, *A Harsh Climate for Trade: How Climate Change Proposals Threaten Global Commerce*, 41 CENTER FOR TRADE POLICY STUDIES (Sep. 2009), <http://www.cato.org/>

a ploy designed to support the more general position of outright denial is difficult to know.¹²⁰ However, a significant number of Americans do not endorse this more moderate position; instead, they are outright deniers.¹²¹ The stance they have adopted is equivalent to saying that there was no financial crisis in 2008 rather than saying that regulatory intervention is an inadvisable or questionable solution. It is a direct and explicit refusal to deal with reality.

Of course, climate change is not the only issue to have produced extreme and emotional reactions in the political arena.¹²² For present purposes, however, the crucial point is that such emotional responses are often generated by intensely held normative positions. In fact, for people at all points on the political spectrum, progressive as well as conservative, emotions and norms are probably impossible to distinguish. While some philosophers and political theorists argue that normative issues in the political realm can be rationally debated,¹²³ recent work on emotions suggests that the distinction may be illusory.¹²⁴ In any event, it is unlikely to be found in ordinary political discourse.

sites/cato.org/files/pubs/pdf/tpa-041.pdf; Patrick J. Michaels, *Global Warming and Climate Change*, in CATO HANDBOOK FOR POLICYMAKERS 475 (David Boaz ed., 7th ed. 2009).

120. Some of the arguments couched in terms of preferable alternatives, even by the most reputable and thoughtful observers, are startling, and they raise serious questions about the sincerity of the argument. See, e.g., Steven Groves, *The 'Kyoto II' Climate Change Treaty: Implications for American Sovereignty*, THE HERITAGE FOUNDATION (2009), <http://www.heritage.org/research/reports/2009/11/the-kyoto-ii-climate-change-treaty-implications-for-american-sovereignty>; Groves takes the position that a multilateral treaty, voluntarily agreed to by the US, and dealing with a situation where our own environment can be destroyed by actions of other nations in the absence of such a treaty, is a violation of American sovereignty. *Id.*

121. See *supra* nn. 3, 4, 9.

122. To focus specifically on conservative thought, two other recent issues that seem to have elicited equivalent responses are abortion and universal health insurance. In both these cases, however, the emotionality seems to derive from normative concerns that can be derived, in their turn, from historical trends in Western society. EDWARD L. RUBIN, SOUL, SELF, AND SOCIETY 205-12 (2015); Edward Rubin, *The Affordable Care Act, The Constitutional Meaning of Statutes, and the Emerging Doctrine of Positive Constitutional Rights*, 53 WM. & MARY L. REV. 1639 (2012).

123. A leading example is Jürgen Habermas. See Jürgen Habermas, BETWEEN FACTS AND NORMS: CONTRIBUTIONS TO A DISCOURSE THEORY OF LAW AND DEMOCRACY (William Rehg trans., 1998) (1996); Jürgen Habermas, THE THEORY OF COMMUNICATIVE ACTION, VOL. 1: REASON AND THE RATIONALIZATION OF SOCIETY (Thomas McCarthy trans., 1984). In general, discourse theories of democracy adopt the position that rational debate about political issues is possible, and in fact provides the basis for the legitimacy of democratic government. See, e.g., JAMES FISHKIN, DEMOCRACY AND DELIBERATION: NEW DIRECTIONS FOR DEMOCRATIC REFORM (1993); AMY GUTMANN & DENNIS THOMPSON, WHY DELIBERATIVE DEMOCRACY (2004).

124. See, e.g., ANTHONY R. DAMASIO, DESCARTES' ERROR: EMOTION, REASON, AND THE HUMAN BRAIN (1994); DANIEL GOLEMAN, EMOTIONAL INTELLIGENCE: WHY IT CAN MATTER MORE THAN IQ (1995).

What is the normative position that would lead to climate change denial? Conservatives are absolutely clear about the norms that motivate their opposition to abortion for example,¹²⁵ and these norms have been in the forefront of political debate about the issue. They have been unable to articulate any similarly deontological positions about climate change. If climate change is in fact occurring, it means that, even by what can only be called the most "conservative" estimates, there is a real chance that the United States will lose tens of thousands of square miles of coastal territory, that six of its top ten metropolitan areas will experience disastrous storm surges,¹²⁶ and that serious draughts will afflict urban populations in the Southwest and agriculture in large portions of the nation.¹²⁷ It is hard to formulate any normative position that would regard these occurrences as a good thing. The only basis for opposing remedial measures of some sort is to assert that the problem itself is illusory.

B. *The Origin of Regulation Phobia*

To describe this rejection of overwhelming evidence as a boomerang effect may be a vivid image, but it does not possess any explanatory power. A boomerang, after all, is an inanimate object; whatever physical forces govern its paradoxical pattern of flight cannot tell us anything about the motivation of human beings. In preference to this somewhat empty description, therefore, it seems better to describe the conservative attitude toward combating climate change through regulation as a kind of collective phobia. It is "an irrational, excessive and persistent fear of some thing or situation."¹²⁸ A characterization of this sort hearkens

125. See JOHN DOMBRINK & DANIEL HILLYARD, SIN NO MORE: FROM ABORTION TO STEM CELLS, UNDERSTANDING CRIME, LAW, AND MORALITY IN AMERICA 53-92 (2007); SEX, MORALITY, AND THE LAW 235-341 (Lori Gruen & George E. Panichas eds., 1996) (essays expressing diverging views); RUBIN, *supra* note 122 at 205-12.

126. See Ben Strauss, Claudia Tebaldi & Remik Zlemliński, *Surging Seas: Sea Level Rise, Storms & Global Warming's Threat to the U.S. Coast*, CLIMATE CENTRAL (Mar. 14, 2012), <http://slr.s3.amazonaws.com/SurgingSeas.pdf>. The ten largest metropolitan areas in the U.S. are New York, Los Angeles, Chicago, Dallas-Fort Worth, Houston, Washington, Philadelphia, Miami, Atlanta, and Boston. Of these, five are essentially at sea level and one more, Los Angeles, is partially at sea level and partially on higher ground.

127. GREGG GARFIN ET AL., ASSESSMENT OF CLIMATE CHANGE IN THE SOUTHWESTERN UNITED STATES 137-38, 227-31 (2013); Glen MacDonald, Water, *Climate Change and Sustainability in the Southwest*, 107 PNAS 21256 (2010); Richard Seager, et al., *Model Projections of an Imminent Transition to a More Arid Climate in Southwestern North America*, 316 SCIENCE 1181 (2007); Connie A. Woodhouse, *A 1,200-year Perspective of 21st Century Drought in Southwestern North America*, 107 PNAS 21,283 (2010).

128. *Phobia*, WEBSTER'S NEW WORLD DICTIONARY (2002). Similarly, The Random House Dictionary of the English Language defines phobia as "a fear or anxiety that exceeds normal

back to Hofstadter's seminal essay, where he describes conspiracy theories as reflecting a "paranoid style."¹²⁹ He is circumspect about using a term derived from individual psychology: "When I speak of the paranoid style, I use the term much as a historian of art might speak of the baroque or the mannerist style."¹³⁰ But it is not necessary to be quite so defensive about this terminology. Most of the words we use to describe collective behavior are derived from individual psychology; we say that Britain was resolute, or the automobile industry was fearful, or that the middle class was optimistic. Terms derived from abnormal psychology are typically pejorative, as Hofstadter concedes,¹³¹ but here again, these terms provide a valuable resource for descriptive purposes. The ideas developed by Freud and other psychologists define our conception of people's internal processes, just as religious terminology defined those processes in prior times. Thus, the conservative reaction to regulations designed to combat climate change can be usefully described as phobic—the crucial question is where this phobia comes from and how it should be treated.

One possible explanation involves the scope and content of the suggested regulations. Combatting climate change seems to demand a major alteration of our society, not a delimited set of government rules governing the activities of a specified group of firms. As the title of Naomi Klein's recent book declares, "this changes everything."¹³² It means that we need to rethink our basic definition of prosperity, the fixed objective that justifies reliance on the private market. Instead of an economic system that can be regarded, no matter how extensive particular regulations are, as a free market with specified exceptions where the market fails, we will have a comprehensively regulated system with specified exceptions where market forces can be safely allowed to persist.

But the response to climate change goes even further; it not only expands the scope of regulation, but demands that these regulations effect a major transformation of our basic economic system and our personal lifestyles. Leading advocates for climate change policy have declared that it requires abandonment of the capitalist system,¹³³ or, and essentially equivalent, the termination of

proportions or that has no basis in reality." *Phobia*, RANDOM HOUSE DICTIONARY (Random House 2d ed. 1987).

129. HOFSTADTER, *supra* note 48.

130. HOFSTADTER, *supra* note 48, at 4.

131. *Id.* at 5.

132. KLEIN, *supra* note 85.

133. See e.g., PAUL GILDING, *THE GREAT DISRUPTION: WHY THE CLIMATE CRISIS WILL BRING ON THE END OF SHOPPING AND THE BIRTH OF A NEW WORLD* (2011); KLEIN, *supra* note 85; ANTHROPOCENE OR CAPITALOCENE? NATURE, HISTORY, AND THE CRISIS OF CAPITALISM

economic growth.¹³⁴ Reducing fossil fuel emissions by significant amounts will require us to live in different kinds of homes, drive different cars, eat different food, work in different settings and perhaps at different jobs. Even more basically, it requires us to change our personal patterns of consumption. Just as it demands that we redefine our social goals from growth to well-being and conservation, it demands that we redefine our personal goals from increasing our material resources to increasing our personal satisfaction or self-fulfillment. It favors the Nurturant Parent urging her children to develop their inner feelings, rather than the Strict Father demanding that his children prove their worth through material advancement.¹³⁵ It spells the end of Weber's Protestant Ethic.¹³⁶

To many people, the argument that global warming requires these changes in the scope and content of government regulation and individual behavior feels like a sort of *deus ex machina* in the culture wars. "You prefer pickup trucks to foreign compact cars, big private homes to multiple dwellings, sprawling Sun Belt metropolises over concentrated coastal cities, beef and pork over tofu and sprouts, fur coats and leather jackets over crunchy knitted wear? Well, you lose! We progressives have come up with a new argument, since 1980, that definitively resolves these sensibility conflicts in our favor. Your preferences will lead to disaster, so they are objectively invalid. Welcome to the global warming era of human history." It is not surprising that this news produces an adverse reaction. Instead of saying "okay, we see that we need to make extensive changes, but let's compromise," many people are tempted to say "you've made up a convenient falsehood to win an argument that otherwise could not be resolved, and we're not buying it." In other words, they experience a phobic response to the scientifically based conclusions that they are ready to accept on other matters.

There is a further reason for this phobic response. The fact that regulations combatting climate change have such an extensive scope and such a transformative content may appear to be two independent results; that is, the relationship between them may seem adventitious. The previous phase of environmentalism, after all, did not display this dual effect. For the most part, individuals do not generate either water pollution or air pollution. Combatting

(Jason W. Moore ed., 2016); NORMA ORESKES & ERIK M. CONWAY, *THE COLLAPSE OF WESTERN CIVILIZATION: A VIEW FROM THE FUTURE* 35-49 (2014).

134. HERMAN E. DALY, *BEYOND GROWTH* (1996); TIM JACKSON, *PROSPERITY WITHOUT GROWTH: ECONOMICS FOR A FINITE PLANET* (2009); BILL MCKIBBEN, *DEEP ECONOMY: THE WEALTH OF COMMUNITIES AND THE DURABLE FUTURE* (2008).

135. See LAKOFF, *supra* note 89, at 65.

136. See MAX WEBER, *THE PROTESTANT ETHIC AND THE SPIRIT OF CAPITALISM* (Talcott Parsons trans., Routledge 2005) (1930).

these problems, therefore, did not demand that people change their lifestyles but only demanded changes in the economic system. The exception, of course, is the private automobile, but emission controls require only modest alterations in comparison, for example, with a shift to small cars or mass transit. This leaves only fuel efficiency as a direct link between controlling air pollution and changing people's lifestyles.

The connection between the scope and content of regulations combatting climate change, however, is not adventitious but organic. It involves truly basic features of our culture and our sensibility, and reaches deep into our thought processes. This profound effect accounts for the intensity of regulation phobia, the sense of desperation with which the deniers insist that well-established truths are just not true. To perceive the connection, it is necessary to place the entire set of beliefs and sensibilities that are implicated by the climate change debate in their historical context. That context, of course, is the modern world, or what can be described as High Modernity.¹³⁷ For purposes of this discussion, it can be regarded as having begun with Adam Smith.

Smith is generally viewed by conservatives as an iconic figure¹³⁸ because he in effect discovered and strongly endorsed the way a free, unregulated market would contribute to the "Wealth of Nations," or general prosperity.¹³⁹ The criticisms in his book, however, are not targeted at the sorts of regulations that modern society employs, but rather at then existing mercantilist policies, which were essentially a holdover from the Middle Ages. Mercantilism was a public policy—a royal policy at the time—that involved continued cooperation with the old craft guilds, associations of artisans, and tradespeople in a particular line of business that controlled entry into field, set prices at levels regarded as just, monitored product quality, and resolved consumer disputes.¹⁴⁰ In addition and most distinctively, mercantilism

137. See ANTHONY GIDDENS, MODERNITY AND SELF-IDENTITY 10-34 (1991).

138. The Adam Smith Institute, located in London, is a non-profit research institution ("think tank") that describes itself as working "to promote neoliberal and free market ideas." THE ADAM SMITH INSTITUTE, <http://www.adamsmith.org/> (last visited Nov. 27, 2016). The Adam Smith Society is an American association of MBA students and business people that describes its mission as providing a venue for discussing the ways in which free markets are central to both prosperity and liberty. *Our History*, THE ADAM SMITH SOCIETY, <http://www.adamsmithsociety.com/html/our-history.html> (last visited Nov. 27, 2016). On Smith's influence generally, see ROBERT HEILBRONER, THE WORDLY PHILOSOPHERS; THE LIVES, TIMES, AND IDEAS OF THE GREAT ECONOMIC THINKERS 55-74 (7th ed. 1999) (1961).

139. See SMITH, *supra* note 102.

140. On mercantilism generally, see ELI F. HECKSCHER, MERCANTILISM (Mendel Shapiro trans., 1994) (1931); IMMANUEL WALLERSTEIN, THE MODERN WORLD-SYSTEM, VOL. II: MERCANTILISM AND THE CONSOLIDATION OF THE EUROPEAN WORLD-ECONOMY, 1600-1750 (1980).

expanded the equally medieval practice of royal charters into the increasingly commercial and international economy of the seventeenth and eighteenth centuries.¹⁴¹ It was the dominant policy by which European nations managed the economic affairs of their expanding colonial empires and treaty relationships, but it also involved an intensification of conscious public policy for internal economic matters.¹⁴²

The alternative approach that Smith proposed was built on satirical observations by Bernard de Mandeville about half a century earlier.¹⁴³ Mandeville's *Fable of the Bees*, subtitled *Private Vices, Public Benefits*, observed that the Christian virtues such as modesty, honesty, frugality, and self-sacrifice would produce an impoverished society. In contrast, the selfishness, vanity, pride, and desire for fame of his metaphorical bees produced a prosperous and thriving hive: "Thus every Part was full of Vice, Yet the whole Mass a Paradise."¹⁴⁴ The book was taken as an attack on morality and created a scandal.¹⁴⁵ It is easy to see it as one of the early salvos in the Enlightenment's assault on organized religion,¹⁴⁶ but what was truly path-breaking about the book was that it severed private behavior from public behavior. The standard view, well-established since the Middle Ages,¹⁴⁷ was that the behavior of individuals and

141. See HECKSCHER, *supra* note 140, at 326-455; DAVID ORMROD, *THE RISE OF COMMERCIAL EMPIRES: ENGLAND AND THE NETHERLANDS IN THE AGE OF MERCANTILISM, 1650-1770* (2003); Thomas Nachbar, *Monopoly, Mercantilism, and the Politics of Regulation*, 91 VA. L. REV. 1313 (2005). See also Robert A. Friedlander, *Autonomy and the Thirteen Colonies: Was the American Revolution Really Necessary?*, 18 DUQ. L. REV. 507 (1979) (British mercantilist system of royal charters was in decline by the 1770s). For an argument that this approach to economic development did not disappear because of Adam Smith or the growth of the market economy, see THOMAS H. STANTON, *GOVERNMENT-SPONSORED ENTERPRISES: MERCANTILIST COMPANIES IN THE MODERN WORLD* (2002).

142. LARS MAGNUSSON, *MERCANTILISM: THE SHAPING OF AN ECONOMIC LANGUAGE* 116-46 (1994) (mercantilism was a consciously designed approach to economic development); WALLERSTEIN, *supra* note 140.

143. BERNARD DE MANDEVILLE, *THE FABLE OF THE BEES, OR PRIVATE VICIES, PUBLIC BENEFITS* (Liberty Classics 1988) (1705).

144. *Id.* at 24.

145. See W. A. Speck, *Bernard Mandeville and the Middlesex Grand Jury*, 11 EIGHTEENTH CENTURY STUD. 362 (1978).

146. See PETER GAY, *THE ENLIGHTENMENT: AN INTERPRETATION; THE RISE OF MODERN PAGANISM* (1st ed. 1966); ANTHONY PAGDEN, *THE ENLIGHTENMENT AND WHY IT STILL MATTERS* 149-99 (2013) ("science of man" provided naturalistic alternative to theistic explanations). Mandeville's book did so, moreover, by a kind of intellectual trick, that is, substituting the mercantilist goal of national prosperity for the more traditional goals and national glory, internal peace, and the advancement of the Christian religion.

147. See ANTONY BLACK, *POLITICAL THOUGHT IN EUROPE 1250-1450* 14-28, 152-56 (1992); JOSEPH CANNING, *A HISTORY OF MEDIEVAL POLITICAL THOUGHT 300-1450* 162-73 (1996); FICHTENAU, *supra* note 30, at 4-10, 50-58; Jeannine Quillet, *Government, Community, Counsel and Representation*, in *THE CAMBRIDGE HISTORY OF MEDIEVAL POLITICAL THOUGHT* C. 350-C.1450, 538-44 (J.H. Burns, ed., 1988). In fact, this view reaches back to the beginnings of political thought in the Western world. It is the reason that both Plato and Aristotle, in their political writings, place so much emphasis on education, a topic that rarely appears in

of society as a whole should mirror or reiterate each other, a view so intuitively appealing and so deeply embedded in our thought processes that it still controls our unconscious attitudes, as Lakoff describes.¹⁴⁸ Mandeville's insight was that the relationship between individual behavior and collective behavior was not reiterative but causal; that is, individual actions caused or produced collective results by complex processes that made these results look different from the actions that produced them. It was this insight that Smith employed when he advanced the theory that when people were allowed to behave selfishly, considering only their individual interests, their action would result, as if guided by "an invisible hand," in the prosperity of the nation as a whole.¹⁴⁹

This mode of thought serves as the basis of modern social science, and shapes the way we think about public policy formation. Unlike Medieval people, we do not try to achieve collective goals by inculcating these goals in individuals. Rather, we begin with the collective result we want to achieve, and then explore the incentives and sanctions that we believe that we will need to impose in order to alter individual behavior to achieve the goal. In other words, we see individual behavior and collective action—the famous macro-micro problem of sociology and political science¹⁵⁰—as different in character, and connected by complex causal relationships that determine how the actions of individuals combine to produce the general result. Conservatives tend to be more insistent on maintaining this distinction than progressives. They generally view market forces as more powerful, and argue that human nature, including people's motivation to maximize their material self-interest, is difficult to alter. Their tendency, then, is to subscribe, in Isaiah Berlin's terminology, to policies that advance only negative rights and to avoid more aspirational efforts that rely on changes in the attitudes of individuals.¹⁵¹ But modern people, of all political persuasions, tend to think of public policy in terms of changing people's incentives through external inducements or pressures, not by transforming their internal attitudes.

modern theories of the state. See ARISTOTLE, *THE POLITICS BOOK VIII* (T.A. Sinclair trans., 1962); PLATO, *THE REPUBLIC* 376c*-540b* (Allan Bloom trans. 1968).

148. See LAKOFF, *supra* note 89, at 65-140 (views about organization of society are modeled on experience of organizing family life).

149. For a discussion of Mandeville's influence on Smith, see generally M. M. Goldsmith, *Regulating Anew the Moral and Political Sentiments of Mankind: Bernard Mandeville and the Scottish Enlightenment*, 49 J. HIST. OF IDEAS 587 (1988); Harry Landreth, *The economic thought of Bernard Mandeville*, 7 HIST. POL. ECON. 193 (1975).

150. See *THE MICRO-MACRO LINK* (Jeffrey C. Alexander et al. eds., 1987); Coleman, *supra* note 40, at 769-84.

151. Isaiah Berlin, *Two Concepts of Liberty*, in *FOUR ESSAYS ON LIBERTY* 118 (1969).

From this perspective, climate change presents an almost unique problem in modern public policy terms. Individuals, in the course of their private, quotidian lives, contribute enormously to the problem and, by changing their individual behavior, can contribute enormously to the solution. In other words, the scope of the required regulatory response is so great that it necessarily implicates everyday behavior. We cannot effectively combat climate change unless individuals change their lifestyles. Capturing carbon from power plants, switching from coal to natural gas, and increasing fuel efficiency standards for automobiles will not be enough. It will also be necessary to individuals to change their carbon footprint, a pedestrian image that implies a different mode of being in the world.

Thus, the demand is for a partial revival of the pre-modern idea that individual behavior should reiterate public policy, that people should live their lives to achieve the same result, on a personal basis, that society must achieve on a collective basis—a major reduction in fossil fuel consumption. There is an undeniable appeal to this idea. It recaptures some of the conceptual and symbolic unity of earlier times, a direct bond between individuals and their society that Smith and modern social science sundered. It means that individuals, in structuring and pursuing their personal lives, can contribute to the public good in a direct and visceral way. Some people may find reassurance in the idea that the effort to maximize one's individual self-interest is contributing, through a complex causal chain, to the general prosperity of society, but this has the intuitive feel of a post hoc rationalization. It is quite different to behave in a way that incrementally contributes to the social good, to believe that each decision to reduce one's fossil fuel consumption contributes incrementally to the general policy on which our society depends for its survival. Once more, as in earlier times, we can feel ennobled by the thought that public benefit is achieved by private virtue.

In order to derive psychological benefit from this renewed reiteration of private and public action, however, one must be comfortable with, and perhaps enthusiastic about, the public action. In other words, one must endorse a comprehensive regulatory approach to combatting climate change, and economic regulation in general. For conservatives, who are uncomfortable, and often hostile, to such policies, the demand that they reiterate public policy in their private lives, that they structure their everyday existence around an extensive regulatory strategy, is offensive and oppressive. It represents the invasion of their personal lives by a government that they dislike, both in general and in particular when it acts in the economic and environmental

arena. The one other public policy that has this same character is toleration for members of racial, religious, and sexually based minorities, and demands in those areas, often characterized as "political correctness" generate similarly emotional reactions.

Moreover, like toleration, the internalization of the regulatory approach to climate change is defined as a matter of personal morality. That is, in essence, the nature of morality; as opposed to law, which is externally imposed, morality is a set of behaviors that individuals are expected to internalize, or follow on their own. What is generally called the "culture war,"¹⁵² that is, the debate about political and social values, can be understood as a conflict between two systems of morality. The traditional system defined morality in terms of higher purposes—personal salvation and service to the nation. The new morality that has been steadily replacing it for the past two centuries is centered on individual self-fulfillment, an ethos that demands that each person have the opportunity to define his or her own life-path.¹⁵³ This new morality is organically linked to the modern administrative state, which does not seek its own aggrandizement but is structured to provide services to its citizens.

Environmental policy does not fit readily within either model of morality. This is hardly surprising, since the entire issue is a relatively recent one. But it becomes a matter of morality when it demands that individuals adopt behaviors that reiterate the environmental policies of the administrative state. In essence, this demand means that those policies are not only being defined as beneficial but as moral—a standard that individuals are expected to follow in their personal behavior. Indirectly but insistently, the expectation that people internalize regulatory policy implies that they accept modern morality, that they recognize the model of individual self-fulfillment, which is embodied in the concept of a regulatory state that serves its citizens, as the correct approach. It thus implies that an individual's refusal to alter one's personal behavior in a direction traced out by progressive politics is wrongful action, or in other words immoral. This is, of course, a charge that conservatives have regularly leveled against their progressive opponents, and they are unlikely to welcome the idea that it applies to themselves instead.

To summarize, the phobic reaction that many conservatives display toward regulations addressing climate change—an outright refusal to accept the reality that the problem exists at all—is the result of both the scope and content of the necessary regulations,

152. See JAMES DAVIDSON HUNTER, *CULTURE WARS: THE STRUGGLE TO DEFINE AMERICA* (1991).

153. See RUBIN, *supra* note 122.

and more specifically, of the way that these two factors interact. The regulatory response essentially demands that individuals internalize the policies of the modern administrative state. It demands that they reiterate the effort to reduce fossil fuel consumption, just as society in general must reduce that consumption. For progressives, who view the economic and environmental policies that characterize modern administrative government with approval, the demand, along with the sacrifices it entails, offers the compensating virtue of a sense of solidarity with the society. Within the causal framework established by Smith's insight and the social science analysis of society that followed, it partially revives the pre-modern sense that individual life is a moral arena, a place where individuals can demonstrate their virtuous commitment to a general goal. For conservatives, this possibility is an assault upon their basic sensibility. It asks them to embrace, at the most immediate and personal level, policies that they reject in the more distant realm of politics, and it brands their refusal to do as personal immorality.¹⁵⁴

IV. SOME POSSIBILITIES FOR CIRCUMVENTING REGULATION PHOBIA

Phobias are difficult to cure. The only cure for the social phobia of climate change denial might be to wait for the next generation. Attitudes on this issue are gradually changing, and it seems likely that the moral commitment to reducing fossil fuel consumption will become increasingly internalized as time goes on. The problem, of course, is that every year that passes without addressing the problem in a serious way makes that problem itself more severe, more difficult to resolve. The contrast with discrimination, another matter of attitude internalization that reiterates social policy in general, is worth noting. Delaying action on this problem hurts people who are alive at the time, but probably does not make the problem any more difficult to resolve in the future. In contrast, delaying action on global warming has only a limited impact on those alive today, but will render the problem more severe, and perhaps intractable, once it is finally addressed.

Analysis of the motivations behind climate change denial suggests some possible strategies for dealing with the problem at the present time, and without waiting for generational replacement of the population. Of course, some strategies involve matters such as the way we generate electric power or regulate industrial enterprises that do not depend on changing individual behavior. But

154. For further explication, see RUBIN, *supra* note 122, at 283-93.

as Michael Vandenbergh and others point out, we cannot afford to ignore the extent to which individual consumption patterns contribute to the problem.¹⁵⁵

One way to affect individual behavior is by indirect means, more specifically, regulatory approaches that would raise the price of goods in proportion to the amount of greenhouse gas that is generated by their production. The economic argument for this approach is that it compels the producers, and ultimately consumers, to internalize the true cost of the relevant products.¹⁵⁶ A carbon tax, if computed correctly, achieves this result by imposing the otherwise externalized cost on the producer.¹⁵⁷ Cap-and-trade proposals are a variation on this approach, requiring producers to buy rights to consume fossil fuel, and thus internalize these costs.¹⁵⁸ Because they operate so broadly, both approaches engender widespread opposition from industry, and secondarily from political leaders aligned with industry, such as the Republican Party.¹⁵⁹ Despite their indirect effect on individuals, moreover, elite opponents do not seem to have experienced much difficulty in communicating the idea that these approaches would constitute the sort of comprehensive assault of people's existing lifestyle

155. See Michael P. Vandenbergh, Jack Barkenbus & Jonathan Gilligan, *Individual Carbon Emissions: The Low-Hanging Fruit*, 55 UCLA L. REV. 1701 (2008); Michael P. Vandenbergh & Anne C. Steinemann, *The Carbon-Neutral Individual*, 82 N.Y.U. L. REV. 1673 (2007); see generally Hope M. Babcock, *Assuming Personal Responsibility for Improving the Environment: Moving Toward a New Environmental Norm*, 33 HARV. ENVTL. L. REV. 117 (2009); Katrina Fischer Kuh, *Using Local Knowledge to Shrink the Individual Carbon Footprint*, 37 HOFSTRA L. REV. 923 (2009); Albert C. Lin, *Evangelizing Climate Change*, 17 N.Y.U. ENVTL. L. J. 1135 (2009).

156. See generally EBAN S. GOODSTEIN, *ECONOMICS AND THE ENVIRONMENT* 34-52 (Wiley 6th ed. 2011).

157. See IMPLEMENTING A US CARBON TAX: CHALLENGES AND DEBATES (Ian Parry et al., eds., 2015); SHI-LING HSU, *THE CASE FOR A CARBON TAX: GETTING PAST OUR HANG-UPS TO EFFECTIVE CLIMATE POLICY* (2011); Reuven S. Avi-Yonah & David M. Uhlmann, *Combating Global Climate Change: Why a Carbon Tax is a Better Response to Global Warming than Cap and Trade*, 28 STAN. ENVTL. L.J. 3 (2009); Gilbert E. Metcalf & David Weisbach, *The Design of a Carbon Tax*, 33 HARV. ENVTL. L. REV. 499 (2009); Gilbert E. Metcalf, *Designing a Carbon Tax to Reduce U.S. Greenhouse Gas Emissions*, 3 REV. ENVTL. ECON. AND POL'Y 63 (2009); David Pearce, *The Role of Carbon Taxes in Adjusting to Global Warming*, 101 ECON. J. 938 (1991).

158. See, e.g., A. DENNY ELLERMAN ET AL., *PRICING CARBON: THE EUROPEAN UNION EMISSIONS TRADING SCHEME* (2010); KLEIN, *supra* note 85, at 199-229; Michelle Betsill & Matthew J. Hoffmann, *The Contours of "Cap and Trade": The Evolution of Emissions Trading Systems for Greenhouse Gasses*, 28 REV. POLICY RESEARCH 83 (2011); Nathaniel O. Keohane, *Cap and Trade, Rehabilitated: Using Tradable Permits to Control U.S. Greenhouse Gases*, 3 REV. ENVTL. ECON. AND POLICY 42 (2009); Robert N. Stavins, *Addressing climate change with a comprehensive US cap-and-trade system*, 24 OXFORD REV. ECON. POLICY 298 (2008).

159. See *supra* note 110 (citing sources for Republican Party opposition).

that generates a phobic reaction.¹⁶⁰ Inhofe, for example, spends a large part of his book attacking cap and trade proposals.¹⁶¹

Many specific proposals to alter individual behavior may also produce a phobic response, as described above.¹⁶² Regulations that would induce or compel people to live in smaller houses, drive smaller cars, or consume less meat, tend to be perceived as similar assaults on their lifestyle, and assertions that their current behavior is morally reprehensible. The question, then, is whether there are specific approaches that could be adopted in the near future, would not be perceived in this manner, and could thus be adopted in a political setting where large numbers of people remain determined to deny the reality of climate change. Three approaches that may meet these criteria will be considered here: mass transit, intelligent homes, and local food production. These are offered as examples; there are certainly others that could serve the same purpose.

The average American consumes about 9,540 watts, or about 313 million BTU per year.¹⁶³ In contrast, the average in France is 5,370 watts or 166 million BTU, in the United Kingdom, 4,330 watts or 134 million BTU, and in Japan, 5,190 watts or 164 million BTU.¹⁶⁴ These other nations are roughly equal to the United States in wealth, and they have relatively similar climates. One explanation for the dramatic difference in their energy consumption is their greater reliance on mass transit.¹⁶⁵ Further evidence for this explanation is provided by differences within the U.S. population. Studies conducted at various times during the past several decades reveal that residents of Manhattan use about 90 gallons of gasoline per capita per year, as compared to nearly 400 gallons for Americans in general.¹⁶⁶ Again, the difference does not appear to be either

160. In his assessment of the reasons why carbon taxes are difficult to enact, Shi-Ling Hsu writes: "All the behavioral effects that work against carbon taxes and in favor of other instruments stem from the transparency of carbon taxes." Hsu, *supra* note 157, at 180.

161. See INHOFE, *supra* note 3, at 105-18, 147-73.

162. See *supra* Section III.B.

163. *International Energy Statistics*, U.S. ENERGY INFO. ADMIN., <http://www.eia.gov/cfapps/ipdbproject/iedindex3.cfm?tid=44&pid=45&aid=2&cid=regions&syid=2007&eyid=2011&unit=QBTU> (last visited Nov. 27, 2016); *Energy Use (kg of oil equivalent per capita)*, THE WORLD BANK, <http://data.worldbank.org/indicator/EG.USE.PCAP.KG.OE> (last visited Nov. 27, 2016).

164. *Id.*

165. See, e.g., PETER DERRICK, *TUNNELING TO THE FUTURE: THE STORY OF THE GREAT SUBWAY EXPANSION THAT SAVED NEW YORK* (N.Y. Univ. Press paperback ed., 2002) (describing the formation of the New York City subway system).

166. MICHAEL HOUGH, *CITIES AND NATURAL PROCESS: A BASIS FOR SUSTAINABILITY 205-06* (Routledge 2d ed. 2004) (1995); RONALD VOGEL, *HANDBOOK OF RESEARCH ON URBAN POLITICS AND POLICY IN THE UNITED STATES* 400 (1997); Peter W. G. Newman & Jeffrey R. Kenworthy, *Gasoline Consumption and Cities: A Comparison of U.S. Cities with a Global Survey*, 55 J. AM. PLANNING ASSOC. 24 (1989); David Owen, *Green Manhattan*, THE NEW

wealth or climate, but rather the fact nearly everyone in Manhattan travels to work by public transit.

To be sure, many of our nation's suburbs and some of our cities in their entirety may not be sufficiently dense to make mass transit systems self-supporting.¹⁶⁷ But this economic calculation ignores the externality of global warming that automobile commuting creates. In other words, there is an economic justification for subsidizing mass transit systems, that is, building them without expecting that they will be able to generate the necessary revenue to recoup their construction costs or even operate at the break-even point. To be sure, the difference must be provided by taxation, which no one likes, and the justification for the tax depends in part on recognizing the reality of global warming. But other justifications can be offered as well, such as decreasing commuting times and reducing air pollution.¹⁶⁸ Moreover, once a mass transit system is built, business and residences are likely to be located in proximity to the stations, thereby making the system useful to increasing numbers of people.¹⁶⁹ The present configuration of our cities, after all, is not a naturally occurring phenomenon; it is, at least in part, the product of our ill-advised enthusiasm for building superhighways and urban ring roads. These do not pay for themselves either; they are financed by taxes and offered to the public for free. To some extent, therefore, an investment in mass transit represents no more than a shift in the beneficiary of an existing public subsidy.

The advantage of building mass transit, as opposed to more direct ways of regulating climate change, is that it may circumvent the climate deniers' phobic response to regulatory measures. Driving to work in one's private car or, quite often, pickup truck or sport utility vehicle may be regarded by some people as part of their lifestyle, but it is more likely to be seen instrumental terms. It can be enjoyable to travel in one's own space, of course, but as our

YORKER, Oct. 18, 2004, at 111. Residents of Houston, a sprawling city with minimal mass transit, use an average of 567 gallons of gasoline. See HOUGH, *supra* note 166, at 206.

167. See JARRETT WALKER, HUMAN TRANSIT: HOW CLEARER THINKING ABOUT PUBLIC TRANSIT CAN ENRICH OUR COMMUNITIES AND OUR LIVES 109-15 (2012) (discussing extent to which relatively low urban densities affect mass transit decision making).

168. See, e.g., DERRICK, *supra* note 165 (describing the decision making process the created the New York subway system as a response to problems of inner city residential congestion); ETHAN N. ELKIND, RAILTOWN: THE FIGHT FOR THE LOS ANGELES METRO RAILROAD AND THE FUTURE OF THE CITY (2014) (describing the decision making process that created Los Angeles Metro Rail as a response to problems of commute time and pollution). Los Angeles' issues are more relevant to contemporary America, of course; many cities, particularly in the Sun Belt, face the same issues. The older issue that motivated decision makers in New York is less common in the U.S., although highly relevant to the developing world. The basic point, however, is that a strong case can be made for mass transit independent of the global warming issue.

169. See WALKER, *supra* note 167, at 59-71.

highways become increasingly congested, and people find themselves caught in long lines of stop-and-go traffic rather than whisking down the road, these pleasures tend to pale. The important point, however, is that no one is forced to take mass transit. It is simply an available option and people can reach their own decisions about whether it is a preferable way to commute. In other words, mass transit is a service rather than a regulation. The goal would be to induce people to change their behavior by building transit systems that are sufficiently effective and attractive. Politically, these systems can be endorsed on their own terms, with their effect on climate change being treated as a supplementary benefit.

Intelligent homes are currently being developed by the market,¹⁷⁰ and rapid advances in the relevant technologies are almost a certainty. The possibilities for energy conservation are well-recognized,¹⁷¹ but in this case, regulation is necessary if significant reductions in fossil fuel consumption are to be achieved.¹⁷² No new home should be built in this nation without electronic mechanisms to regulate its energy consumption.¹⁷³ In addition, inducements should be offered to install solar panels; this would be akin to mass transit, in the sense that it would be an option that people would be free to reject, but that might become increasingly attractive over time. The self-regulating features of the house should be required, however. Private residence construction is, at present, highly regulated; there are numerous rules, imposed by all levels of government, addressing the materials used, the method of construction and, in most places, the size and appearance

170. See Frances K. Aldrich, *Smart Homes: Past, Present and Future*, in *INSIDE THE SMART HOME* 17 (Richard Harper ed., 2003) ("The full-blown concept of the smart home is the acme of domestic technology we can envisage at present. The concept, at one time only encountered in science fiction, has moved closer to realisation over the last ten years."); Peter Tolmie et al., *Towards the Unremarkable Computer: Making Technology at Home in Domestic Routines*, in *INSIDE THE SMART HOME* 183 (Richard Harper ed., 2003).

171. See, e.g., Tuan Anh Nguyen & Marco Aiello, *Energy Intelligent Buildings Based on User Activity: A Survey*, 56 *ENERGY & BUILDINGS* 244 (2013); G. Wood & M. Newborough, *Energy-Use Transfer Information for Intelligent Homes: Enabling Energy Conservation with General and Local Displays*, 39 *ENERGY & BUILDINGS* 495 (2007).

172. Much of the impetus for intelligent homes has come from the needs of elderly homeowners, for whom the technology is of immediate benefit, perhaps a matter of survival. See Marie Chan et al., *A review of smart homes—present state and future challenges*, 91 *COMPUTER METHODS & PROGRAMS IN BIOMEDICINE* 55 (2008); Jessica Lapointe et al., *Smart Homes for People with Alzheimer's Disease: Adapting Promoting Strategies to the Patient's Cognitive Profile*, *PETRA* (2012); Elena Torta, et al., *Evaluation of a Small Socially-Assistive Humanoid Robot in Intelligent Homes for the Care of the Elderly*, 76 *J. OF INTELLIGENT & ROBOTIC SYSTEMS* 57 (2014). The technology is fully applicable to energy conservation, but the sense of urgency for this issue—that is, the survival of humanity in general—has been lacking thus far.

173. See James Barlow & Tim Venables, *Smart Homes, Dumb Suppliers? The Future of Smart Homes Markets*, in *INSIDE THE SMART HOME* 247 (Richard Harper ed., 2003) (technology of smart homes has outpaced the market's ability to provide them for consumers).

of the completed structure. Intelligent home requirements would simply take their place among these other regulations.

These requirements, of course, would add to the price of each new house, and thus represent a subsidy from the purchaser for the purpose of combatting climate change. But given the current state of electronics, and its continued development, the cost will generally be minor. Moreover, unlike some mass transit systems, the self-regulating features will rapidly recoup their cost as a result of decreased energy costs. To be sure, people could achieve similar savings on their own, but the electronics will be somewhat more efficient and reliable. Once it becomes a norm, people will also have an incentive to retro-fit existing homes with intelligent controls, and once that becomes common and sufficiently inexpensive, it may be politically possible to require retro-fitting.

The reason that the intelligent home, even when required by regulation, might circumvent the anti-regulatory phobia of the deniers is that it does not represent a significant change in people's lifestyles. The whole point of the controls is to save energy without intruding on the behavior patterns of the residents. Lights go off only when people leave the room, and they go on as soon as they reenter, as quickly or more quickly than they can be turned on by a manual light switch. Heating is adjusted to the residents' presence or absence, and to their preferences. If the residents object to such benign controls, they will be able to turn off the various components of the system. They would be free to keep the lights to be burning when they are absent from the room, or the heat or air conditioning running at full blast all day, instead of having it drop or rise toward the ambient temperature and readjust to the desired temperature half an hour before the residents return (having learned their schedule). Over time, most people will cease to value such trivial and self-defeating liberties. That is what happened with seat belts, after all. When they were first introduced, many people objected vociferously to any mechanism, such as the ignition interlock,¹⁷⁴ that interfered with their freedom to get their heads smashed

174. See Motor Vehicle and Schoolbus Safety Amendments of 1974, Pub. L. No. 93-492, 88 Stat. 1470, 1482, 15 U.S.C. § 1410B (agency may not require the interlock, which prevents the car from starting unless the occupants are wearing seat belts). The legislation was designed to overturn a regulation adopted by the National Highway Traffic Safety Administration; Congress received an enormous amount of mail opposing this regulation than it had ever received on any issue. See JERRY L. MASHAW & DAVID L. HARFST, *THE STRUGGLE FOR AUTO SAFETY* 131-40 (1990). Forty years later, seatbelt safety denial is virtually non-existent. *Seat Belt Use in 2015—Overall Results*, U.S. DEP'T OF TRANSP. (Feb. 2016), <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812243> (seat belt use has increased to 88.5% of observed drivers).

against the dashboard. Now, nearly all people put their seatbelts on without further thought when they get into a car.

A third way to change individual behavior without triggering a phobic reaction to regulation might be to place a tariff on certain food products that can be produced locally but are now imported from outside the nation. In many cases, food is grown in one overseas location, shipped to a second overseas location and only then shipped to the U.S. for consumption.¹⁷⁵ The reason for this seemingly circuitous trajectory is to take advantage of lower production costs. Ordinarily, this would be efficient, and most economists favor free generally on efficiency grounds.¹⁷⁶ The problem, once again, is that food producers are paying for, and thus internalizing, the cost of the fuel required to ship their products back and forth and to store in the various stops along the way, but they are externalizing the cost that the consumption of this food imposes on the planet's climate.¹⁷⁷ These costs are not a major element in the carbon usage of all foods, but they contribute significantly to many, particularly ones that require less energy to produce, like vegetables, fruits and legumes.¹⁷⁸ Placing a tariff on the importation of these items would be a way of forcing overseas producers to internalize this environmental cost, and would thus make locally grown food competitive.

A tariff is a tax, of course, and thus the same sort of indirect device as a more general carbon tax. For products that can only be grown outside the U.S., like mangos or bananas, it is mainly a revenue raising measure; for those that can be grown within the U.S., but only in limited locations, such as oranges and grapefruits, the tariff, in addition to raising revenue, protects American producers from foreign competition, a result that most economists regard as inefficient.¹⁷⁹ But for crops that can be grown close to nearly all our nation's major population centers, a tariff, by protecting domestic producers, would also favor local production, thus reducing

175. See Wayne Wakeland et al., *Food transportation issues and reducing carbon footprint*, in GREEN TECHNOLOGIES IN FOOD PRODUCTION AND PROCESSING 211 (Joyce I. Boye & Yves Arcand eds., 2012); Christopher L. Weber & H. Scott Mathews, *Food-Miles and the Relative Climate Impacts of Food Choices in the United States*, 42 ENV. SCI. TECH. 3508 (2008).

176. See Paul S. Krugman, *Is Free Trade Passé?*, 1 ECON. PERSPECTIVES 133, 133 (1987) ("If there were an Economist's Creed, it would surely contain the affirmations 'I understand the Principle of Comparative Advantage' and 'I advocate Free Trade.'").

177. See Rich S. Pirog et al., *Food, Fuel, and Freeways: An Iowa perspective on how far food travels, fuel usage, and greenhouse gas emissions*, LEOPOLD CENTER PUBS AND PAPERS, Paper 3 (2001), http://lib.dr.iastate.edu/leopold_pubspaper/3.

178. See Wakeland et al., *supra* note 175.

179. See Krugman, *supra* note 176.

transportation costs.¹⁸⁰ The compensating advantage for consumers, apart from the long-term benefit to the climate, is that they would be receiving fresher food products.

Here again, this means reducing fuel consumption might well avoid the deniers' phobia. Encouraging local production could be justified on many grounds apart from environmental protection, such as aiding local farmers and building communities, as well as providing fresher, more lightly processed products. Politically, it might build an alliance between small farmers and environmentalists, two groups that tend to be linked to opposite political parties. In addition, local production is the traditional way that food was produced in our nation; it is as American as apple pie, and thus likely to carry emotive connotations that appeal to conservatives. As with mass transit, encouraging local food production does not represent a compelled change in people's lifestyle. No one would be compelled to be a locavore. People could continue to go to supermarkets and buy food that has been transported halfway across the world and stored at various stages of the process.

V. CONCLUSION

Climate change denial among the American populace poses a serious problem for the entire world, immediately in some cases and universally for future generations. It is therefore crucial to understand its sources. The most striking feature of this attitude, and one that distinguishes it from positions taken in most other policy debates, is that it represents a direct rejection of a scientific consensus. There is thus a tendency to treat it as a rejection of scientific explanation itself. But there is little evidence of a general hostility toward science in the United States, aside from the religiously-based resistance to Darwinian evolution. Climate change rejection has certain resemblances to conspiracy theories, but these theories are not anti-science; rather they use science in support of positions that they adopt for independent reasons.

The real source of climate change denial is a phobic reaction to the sorts of regulatory initiatives that will be necessary to address the problem. Many people see these initiatives, in some cases

180. Christopher L. Weber & H. Scott Mathews, *Food-Miles and the Relative Climate Impacts of Food Choices in the United States*, 42 ENV. SCI. TECH. 3508 (2008) (conclude that shifting people's food choices from red meat and dairy to poultry and vegetables would have more beneficial results for the climate than encouraging local production). But that sort of shift in basic lifestyle, however desirable to committed environmentalists, is the sort of recommendation that engenders resistance, particularly if it were to be implemented by government regulation.

quite correctly, as an assault on their lifestyle. Even more basically, these initiatives represent an attack on many people's basic ideas of morality and relationship to government. They demand that individuals reiterate, in their own lives, public policies characteristic of the modern administrative state. For those who favor this mode of governance, the demand may be welcome, despite its inconveniences, as a revival of the pre-modern connection between the individual and the community. For those who dislike modern regulatory government, the demand is perceived as an intrusion of their lives and an attack on their beliefs.

In the long run, negative attitudes toward modern government, and the willingness to reject an increasingly established scientific truth, is likely to fade. There is an urgency to the global warming problem, however, that counsels against waiting for the somewhat leisurely process of attitude change to take its course. Identifying climate change denial as a phobic reaction to regulation suggests a variety of immediate measures that might be politically acceptable at the present time, and at least provides some progress toward the essential goal of reducing greenhouse gas emissions before our planet chokes on them.