24. Denialism: organized opposition to climate change action in the United States

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Despite extreme weather events and urgent warnings from the scientific community, action to mitigate carbon emissions is stalled. Following the dramatic Congressional testimony in 1988 of Dr. James E. Hansen (Hansen 1988: 40), climate change emerged as a global issue. Since that time a broad range of actors with divergent interests have entered into the public arena and engaged in a struggle to control public discussion and understanding of climate change, and thus define appropriate policy responses. In this political struggle, efforts to take action on climate change have encountered substantial social inertia in the form of cultural, institutional, and individual resistance (Brulle and Norgaard 2019). There are multiple explanations for this failure to mobilize. One dominant factor in driving social inertia centers on institutionalized efforts to oppose action on climate change.

Starting in 1958, the fossil fuel industry became increasingly aware of the phenomenon of global warming, its connection with the use of fossil fuels, and that their continued use would lead to a change in the earth's climate that would have adverse impacts on society (Franta, 2018). Following on this realization, the oil and gas trade association American Petroleum Institute, along with fossil fuel corporations and utilities, instituted research programs to study climate change (CIEL, 2017, Banerjee et al., 2015; Anderson et al., 2017; Shell Oil 1988). By the mid-1980s, virtually all of the implicated industries and their affiliated trade associations were staging major scientific conferences and had developed extensive in-house expertise on climate change. Despite their knowledge of climate science, a number of corporations and trade associations, acting in coordination with conservative think tanks, foundations, and public relations firms, mounted a long-term effort to oppose action to mitigate carbon emissions (Dunlap and McCright 2015; Plehwe 2014; Young and Coutinho 2013).

In this chapter, I summarize the current literature on how intentional efforts by a number of organizations have created barriers to meaningful climate action. In the first part, I provide an overview of how social science research has developed an overall understanding of public policy conflicts, and how these theoretical perspectives provide a robust explanation of political conflicts over climate change. I then trace the historical development of the different institutional practices that have combined to form the complex institutional relationships that constitute the intentional efforts opposed to climate action. The analysis describes the activities and extent of the efforts conducted by multiple organizations at different time scales. Finally, I summarize the overall impacts of these efforts. The literature reveals that this endeavor is highly sophisticated, operates in different institutional arenas and with multiple time frames, uses a wide variety of tactics, and has successfully influenced cultural perceptions of, and political action on, climate change.

THE STRUGGLE FOR POLITICAL HEGEMONY

The political conflict over climate change can be seen as a symbolic struggle over the dominant cultural understanding of this issue. Seeing social order as regularized patterns of social interaction constituted by acceptance of a common situational definition (Fligstein and McAdam 2012: 9), political conflicts center on the shared cultural definitions "that identify categories of social actors and their appropriate activities or relationships" (Lounsbury, Ventresca and Hirsch 2003: 75).

Applying this approach to public policy centers around how legitimate practices in a specific policy domain are defined. The definitions of these appropriate practices in a specific policy arena are defined as field frames. Field frames are "political constructions that provide order and meaning to fields of activity by creating a status ordering for practices that deem some practices more appropriate than others" (Lounsbury, Ventresca, and Hirsch 2003: 76–77). These ideas define a collective and binding definition in that particular field. Creating and maintaining a particular field frame constitutes the locus of political contests and involves the active creation and maintenance of this frame through the exercise of intellectual leadership, compromise, material incentives and coercion (Gramsci 1971; Levy and Egan 2003). Accordingly, the struggle for social change involves a competition between the dominant worldview upheld by the incumbents, and alternative frames, developed and championed by challengers (Fontana 2004: 96). The maintenance of the status quo and thus a stable social order is in the interests of the incumbents. Thus they seek to maintain or stabilize the field, whereas challengers seek to transform the field frame (Fligstein and McAdam 2012: xx; Levy and Egan 2003: 810). In this contestation, organizations play a critical role in the advocacy of different field frames.

To ensure frame stability, the incumbents often found Internal Governance Units (IGUs). IGUs are formal organizations, such as trade associations, that are established to facilitate the functioning of the interactions internal to a field. Organizations based in the alternative or challenging field frame seek to both spread familiarity and acceptance of the alternative discursive frame, and to generate political pressure to implement institutional change based on this new frame (Rochon 1998: 51). These efforts take the form of social movements.

Additionally, the rise of social change efforts also gives rise to attempts to maintain or restore the previously unquestioned field frame in the form of countermovements. Countermovements are

> networks of individuals and organizations that share many of the same objects of concern as the social movements that they oppose. By advocating an alternative discourse and challenging the established field frame, social movements create conditions for mobilization of their opposition. Countermovements originate as the change movement starts to show signs of success by influencing public policy, and threatening established interests. (Meyer and Staggenborg 1996: 1635–1640)

The elite of these interests then respond to this threat by fostering a countermovement to protect their interests by opposing or containing the challenging social movements (Pichardo 1995: 23). As noted by Gale (1986: 207), these countermovements "typically represent economic interests directly challenged by the emergent social movement." The countermovement organizations that emerge take the form of elite driven efforts to mobilize economically impacted populations, or populations that share similar interests or ideologies (Gale 1986: 207; Pichardo 1995). From this viewpoint, social movements are attempts to alter social struc-

tures through the promotion of an alternative field frame, and countermovements are efforts to maintain the currently dominant field frame. Each of these efforts aims to define the cultural orientation of civil society to maintain or change the common sense of society regarding a particular field frame.

Applying this perspective to climate change politics shows that the core of this political conflict is centered on the societal understanding of climate change, and the need for political action to limit carbon emissions. The status quo framing is to ignore carbon emissions in everyday practices. However, as scientific understanding grew, there developed an alternative framing centered on the need to reduce carbon emissions to avoid catastrophic changes in the earth's climate. As the currency of this perspective grew, a countermovement developed to oppose this effort and to maintain the dominant status that informed the status quo. Thus the extent of social inertia in addressing climate change and a sustainability transition at the institutional level is a contingent outcome among competing coalitions (Levy and Egan 2003). Thus the cultural conflict over climate change enables us to view this contest as a political and cultural dispute over the appropriate field that governs climate policy (Knight and Greenberg 2011).

HISTORICAL DEVELOPMENT OF CLIMATE CHANGE OPPOSITION

The organized opposition to climate change action includes corporations, trade associations, conservative think tanks, philanthropic foundations, advocacy groups, lobby groups, and public relations firms, whose position is promulgated through a network of blogs, book publishers and sympathetic media outlets (Dunlap and McCright 2015). These various organizations act in different political and cultural arenas and employ different time horizons to achieve a range of objectives. For these reasons, we cannot refer to the organized efforts to block or delay climate action in monolithic terms. Rather, these efforts stem from an amalgam of loosely coordinated groups that can be understood collectively as a countermovement.

Additionally, the climate countermovement is not simply composed of industries attempting to preserve their market position. There is also a strong component of ideologically motivated action that reflects its historical development. Two main historical threads are woven into the climate countermovement: the ideologically motivated anti-regulatory conservative movement, and the corporate efforts at ensuring profitability and sustaining the industrial sector through the use of integrated public relations campaigns.

The Conservative Movement

The development of the current U.S. conservative movement stemmed from two related efforts: the Wise Use Movement, and the larger Conservative Movement. The Wise Use movement originated during the 1970s in the western United States in response to government regulation of public lands. Stemming from the 19th-century belief in Manifest Destiny (Brulle 2000), territorial expansion and stewardship was seen as "man's" divine right; any threat of control over the unbridled use of natural resources on behalf of economic development was an affront to this central tenet. As noted by Lo (1982: 119), countermovements generally arise to

defend established societal myths. The myth of Manifest Destiny extends throughout a long history of western states' opposition to any form of government regulation of public property.

Laws passed in the 1960s and 1970s, such as the Endangered Species Act and the National Environmental Policy Act, were designed to protect federal lands. In response, a large-scale social protest emerged between 1979 and 1983, initially known as the Sagebrush Rebellion (Shabecoff 1993: 164). This movement, representing western economic interests (primarily ranchers and miners) attempted to return control of federal lands to local economic groups. The election of a conservative Republican president, Ronald Reagan, in 1980 gave this movement access to power. Reagan appointed James Watt, a leader in the Sagebrush Rebellion, as Secretary of the Interior (he served between 1981 and 1983). This controversial Cabinet appointment signaled the Reagan Administration's intention to dismantle environmental regulations. Importantly, even in the face of several reports on the progression of environmental damage, including two major studies on climate change in 1983 (NRC 1983; Seidel and Keyes 1993), no federal action was taken.

By the late 1980s, the original Sagebrush Rebellion had been reorganized into a more comprehensive movement known as the Wise Use movement (Brulle 2000: 115–131). Helvarg (1994: 9) sees the Wise Use movement as a "counterrevolutionary movement, defining itself in response to the environmental revolution of the past thirty years." The intellectual roots of this movement combine the idea of Manifest Destiny, states' rights, and property rights to call for the reversal of environmental restrictions. Expanding on economist Milton Friedman's (1962) injunction that the free market is best positioned to deal with environmental problems, Wise Use argued that market mechanisms ought to dictate natural resource management. The movement comprised an estimated two hundred member-groups in 1988, expanding to more than fifteen hundred groups nationwide in 1995 (Brulle 2000). The Wise Use movement became a powerful lobby. It also developed a popular legal strategy known as SLAPPs (Strategic Lawsuits Against Public Participation). These lawsuits sought to limit the ability of environmental activists to voice their concerns by burdening them with the costs of legal defense (Canan and Pring 1988).

Many of the original Wise Use groups went on to oppose climate change action, and to form coalitions to increase their lobbying power. Opposition to the Kyoto Protocol (a 1997 international agreement to set binding greenhouse-gas-emission reduction targets), was supported by several national Wise Use organizations, which joined forces with industry-sponsored coalitions (Savitt et al. 1997). In recent years, the Wise Use movement has become integrated in multipurpose American organizations such as the anti-government, populist Tea Party movement and the Koch brothers-funded, right-wing political advocacy group Americans for Prosperity. While its distinct identity has become diffused as a result, this movement generated a nucleus of activists and organizations opposed to climate action who now staff a wide range of conservative organizations.

The larger conservative movement thus absorbed the Wise Use movement and its anti-environmental stance. This movement started following World War II. Founded by the Austrian economist Friedrich von Hayek, the Mont Pelerin Society first met in 1947. It was an intellectual society devoted to advancing a philosophy of market deregulation and low state intervention, partly in opposition to socialism (Crockett 1995: 100–121). The society developed a robust neoliberal perspective that gained powers of expression in the economics department of the University of Chicago, whose members advocated the application of free-market economics to public policy issues and the rollback of the welfare state. This

neoliberal philosophy would come to define the modern conservative movement's approach to politics. The neoliberal position equates democracy with "economic freedom" or "free enterprise" – property rights, contracts, and consumer choice. It rejects the notion of public goods and opposes regulation, taxation, and other state-led intrusions into the market.

This movement gained momentum when the corporate lawyer Lewis Powell wrote a now-infamous memo warning about the social and political threat to the American free enterprise system, arguing that corporations and industry must wrest control of the economy from those with leftist inclinations (Powell 1971). "Conservatives must capture public opinion by exerting influence over the institutions that shape it: academia, media, church, courts," he wrote (Mayer 2016: 75; Powell 1971). Powell would go on to become a Supreme Court Justice with considerable influence over such institutions. Meanwhile, neoconservative and religious organizations joined business interests to campaign against social liberalism and the welfare state and to promote a free-market ideology. The emergence during this time of a network of conservative think tanks and foundations lent material and symbolic support to calls for deregulation, privatization, welfare reduction, and decreased taxation to revive corporate profits and economic growth (Stefancic and Delgado 1996). This network consolidated its access to political power via the aforementioned election of Ronald Reagan. In subsequent decades, this neoliberal network sought to weaken the environmental regulations and oversight agencies created in the U.S. in the 1970s and to blunt the environmental movement's ongoing efforts to extend this oversight.

The perceived threats that climate change action posed intensified this opposition. For many conservatives, climate change is an issue that provides license for wholesale government intervention into the economy and is thus a major threat to economic liberty. The discrediting of climate science began in earnest in 1989, when the George C. Marshall Institute issued the first report in its "Climate Change Policy" program, a program designed to promote uncertainty over mainstream scientific consensus that the global climate is changing (Oreskes and Conway 2010: 186). Funded by a number of conservative philanthropies and corporations affiliated with fossil fuel use (Brulle 2014), other conservative think tanks followed the Marshall Institute's lead, aiming to delegitimize climate science and limit public and political action. As Jacques et al. (2008) noted, conservative think tanks were at least partly responsible for 92 percent of all books published between 1972 and 2005 that expressed skepticism toward climate science.

As the U.S. conservative movement expanded, opposition to climate change action became a critical component of its political program. What emerged was a well-developed effort spearheaded by a number of conservative foundations connected to nearly one hundred conservative think tanks (Brulle 2014) that took on opposition to climate change action as part of their mission. Coordinated by meetings of funders such as the annual Koch brothers' summits (Hertel-Fernandez et al. 2018), their conservative network of institutions has become one of the core components of institutionalized opposition to climate action.

Expansion of Public Relations Activities

Two related activities also led to the development of integrated opposition to climate change action – first, the development of the product-defense industry, and second, the large-scale utilization of integrated public-relations campaigns. The product-defense industry originated in the efforts to conceal the adverse health effects of lead. In the early part of the 20th century,

scientific studies made clear the toxic impacts of lead exposure on humans. To counter this threat to the lead industry, the Lead Industries Association led a campaign to obscure the health dangers associated with lead. This effort included sponsorship of research to demonstrate the safety of lead, challenging of reported incidents of lead poisoning, and intimidation of scientists whose research demonstrated the dangers of lead exposure Additionally, commencing in 1918, the lead industry embarked on a 35-year campaign to convince the public of the safety of lead (Markowitz and Rosner 2002: 36–53). Due to these efforts, the adverse health consequences of lead exposure were minimized for decades. It was not until the 1970s that this effort was overcome by the passage of national legislation to address lead paint exposures.

The practice of challenging the science that threatened commercial interests matured in the defense of tobacco. Building on the expertise it developed in defending lead in the 1950s, the advertising firm Hill and Knowlton initiated a several-decades-long defense of tobacco products (Michaels 2008: 45–59). This practice involved attacking scientists and scientific studies that pointed out the links between smoking and cancer, sponsoring research on other factors that cause cancer to deflect from these links, and promulgating this material through scientific front organizations and media outreach efforts (Proctor and Schiebinger 2008; Christensen 2008). At the same time, the chemical industry initiated many of the same practices. Responding to the publication of Rachel Carson's book *Silent Spring* (Carson 1962), the Chemical Manufacturers Association, along with a number of leading chemical manufacturing companies, developed an aggressive campaign to discredit the book's scientific argument, utilizing select "expert" scientists and attacking the author personally (Aronczyk 2018; Otto 2011) – an effort that gave rise to the label "junk science." The industry also engaged in media outreach, placing editorials and letters to the editor in major news outlets, as well as publishing an "alternative" to *Silent Spring*, 'The Desolate Year' (Monsanto 1962).

These initial PR efforts were united in the practice of product defense (Michaels 2006, 2008; McGariety and Wagner 2008). The purpose of such efforts is to manage the scientific process and thus "manipulate research in ways that would promote their [industry's] products, or create doubt about the deleterious health effects of their products and manufacturing processes – thereby enhancing their credibility and profits, and shielding them against unwanted regulation or legal liability" (White and Bero 2010: 105–106).

This process involves (1) shaping the direction of research efforts into non-threatening areas; (2) concealing information about the harmful aspects of a corporate product; (3) attacking scientific findings and the scientists who produce research that threatens corporate interests; (4) packaging their carefully constructed interpretation in high legitimacy efforts; and (5) aggressive efforts at spinning the media to promulgate favorable press (McGarity and Wagner 2008). This practice has been employed in defending numerous industrial products implicated in causing adverse health and environmental consequences, including asbestos, DDT, vinyl chloride, beryllium, and – in the case of air pollution and climate change – fossil fuels. In the 1950s, for example, the American Petroleum Institute's Smoke and Fumes Committee sponsored ongoing research into air pollution in the wake of growing public alarm. The American Petroleum Institute (API) drew on industry-friendly findings by the Stanford Research Institute that questioned the link between oil refineries and air pollution (Jenkins 1954). According to Conley (2006: 23), by the mid-1950s "the Smoke and Fumes Committee was sponsoring ten ongoing projects" to study industrial pollutants in order to cast doubt on the connection between air pollution and oil products. Such practices to "institutionaliz[e] delay" (Brulle 2014) – selectively interpreting research or commissioning studies to develop

more industry-positive findings – are an important part of the history of organized opposition to climate action.

Throughout the 20th century, the use of public relations techniques to support corporate interests in the political sphere has expanded and matured into a robust practice centering on the use of integrated public relations campaigns. This practice forms the second component of corporate political strategies to address the adverse environmental and health consequences of their products. These campaigns, led by PR firms, aim to influence the political decision-making process to protect the interests of their clients of the public relations firm. The application of public relations techniques and public-opinion management to the political sphere originated with the press agent Ivy Lee before World War I. Lee's most infamous work was for John D. Rockefeller's Colorado Fuel and Iron Company, the largest coalmine operator in the region. Lee was called in to manage public perceptions of the company and industry following the "Ludlow Massacre," a labor strike in 1913 that led to intense violence. Lee applied the same public-relations techniques to burnish the image of Standard Oil and Socony-Vacuum Oil (also Rockefeller properties) as well as the steel industry and a variety of corporate clients (Miller and Dinan 2008; Cutlip 1994).

Edward Bernays, the nephew of Sigmund Freud, further developed the use of public relations on behalf of corporate entities including General Electric and the American Tobacco Company. He founded the first professional political consulting firm in 1933. Called Campaigns, Inc., the firm pioneered the use of indirect lobbying (also known as grassroots lobbying) as a political campaign tactic (Walker 2014: 53–55; Lepore 2012). These efforts became more sophisticated after World War II, as many PR and ad men who had helped develop large-scale propaganda campaigns for the war effort returned to public life. In 1946, the API instituted a two-million-dollar public relations campaign to promote goodwill among local residents. The campaign included the development of "field operations" (opening and staffing 13 units across the country), extensive magazine advertising campaigns, and a week-long "Oil Progress Week" to educate communities about the benefits of oil to their lives (Potter 1990: Chapter 6).

As discussed earlier, the development of the specialized industry of environmental public relations would emerge in the 1970s, ten years after the public outcry following the publication of government scientist Rachel Carson's research on the toxic legacy of chemical pesticides. Though ultimately unsuccessful in stemming the tide of change in public and political attitudes evoked by *Silent Spring*, this PR campaign taught industrialists that managing public perceptions and political decision making around environmental issues was not only a worthwhile but a necessary investment. Over time, the U.S. corporate community has integrated public relations and lobbying into its business strategy. Between the 1970s and the 1990s, corporate PR agents and firms built advocacy structures to anticipate and manage public policy issues. These advocacy structures include public–private sector partnerships, events and sponsorships; industry benchmarking and reporting; awards/certification programs; media training seminars; and international technology transfer systems (Aronczyk 2018). These advocacy structures work in an integrative manner to actively shape public policy decisions in ways favorable to overall corporate interests (Barley 2010). Their techniques included emulation of the grassroots advocacy that led to the success of the citizens' and environmental movements in the 1960s. They also included engaging law firms to facilitate legal action (such as the SLAPP libel lawsuits discussed above) and creating corporate foundations, which in turn funded ideologically motivated think tanks. Trade associations grew stronger and became major political

actors, and the rise of political action committees in turn facilitated corporate political activities. All of these efforts have evolved into a complex organizational field that focuses on the development and promulgation of a uniform ideological message. This organizational strategy simulates a unified front on climate change action as there appear to be multiple diverse voices simultaneously advocating for a uniform position. The field enforces this perception by using various communication channels including academic journals, policy papers, briefings, media coverage, and advertising to reach targeted audiences (Manheim 2011).

THE INSTITUTIONAL STRUCTURE OF CLIMATE POLITICS IN THE U.S.

A key element in the struggle for cultural and political hegemony is the institutional capacity of organizations to develop and conduct advocacy efforts. A number of authors (Brulle 2014, 2018; Dunlap and McCright 2011; Farrell 2016a, 2016b; Barley 2010; and Covington 1997) have examined these organizations and their relationships. These organizations include corporations, trade associations, conservative think tanks, philanthropic foundations (Brulle 2014), advocacy groups, lobbying organizations (Brulle 2018), and public relations firms (Oreskes and Conway 2011; Dunlap and McCright 2015). This integrated network of organizational relationships (sometimes termed the "denial machine") exists to influence the public, media, and political arenas to slow or stop climate action. This countermovement is highly sophisticated, operates in multiple institutional arenas, and pursues a wide variety of coordinated tactics. These activities also operate in three distinct time frames: long term, intermediate term, and short term (Covington 1997). Figure 24.1 provides an overview of these organizational activities. As there are some variations in the activities of corporations and the conservative movement, that division has been noted in the figure.

Long-Term Activities

The first set of activities focus on long-term efforts that range from five years to decades in duration. Their goal is to build and maintain a cultural and intellectual infrastructure of organizations that supports the development of ideas and policies favorable to conservative or industry viewpoints. One aspect of this effort is creating and maintaining academic programs at institutions of higher education, endowing academic chairs, and providing educational support for students in these programs (Mayer 2016). Both corporations and the conservative movement engage in such efforts. We can see their outcome in the proliferation of programs in economics and law that advocate Chicago School theories of neoliberal economics (Teles 2008). Additionally, as exemplified by the circulation of a misleading academic book by the Heartland Institute distributed to secondary schools, both fossil fuel corporations and conservative think tanks attempt to promulgate conservative ideas and support for fossil fuels in elementary and high schools (Washburn 2010; Goozner and Gable 2008).

Another set of activities corporations and affiliated trade associations engage in is the development and enactment of corporate or industry-sector corporate promotion campaigns to enhance their cultural legitimacy and thus offset potential regulation. These campaigns include the sponsorship of cultural events and forums. One the best-known examples is Mobil Oil's decades-long sponsorship of Masterpiece Theatre, the dramatic television series on the

Organized Efforts Opposed to Climate Action

Time Frame	Objectives	Activities	Conservative Movement Institutions Involved	Corporate Institutions Involved	Example
Long Term 5 Years to 20 Years	**Develop/Promulgate Specific Worldview**	Provision of Elementary/Secondary School Curriculum	Foundations Think Tanks	Corporations Trade Associations Public Relations Firms	Heartland Institute Publication Circulation
	Steering of Academic Activities	Creation/Funding of Academic Curriculum and Research Programs	Foundations	Corporations Corporate Foundations	Building of neoliberal academic programs
		Corporate & Industry Image Promotion		Corporate Public Relations Department Public Relations Firms	API "Fueling it Forward" Campaign
Intermediate Term 1 Year to 5 Years	**Circulate Proposals & Specific Worldviews in Media**	Develop/Promote Specific Worldview & Policy Actions	Think Tanks Advocacy Organizations	Corporate Public Relations Department	ExxonMobil proposed carbon tax
	Foster Desired Government Actions	Delegitimate Opposing Worldviews and Policy Proposals	Think Tanks Advocacy Organizations		Climategate Effort
Short Term 6 Months to 1 Year	**Carry Out Political Action to Influence Government** - Elections - Legislation	Lobbying		Lobbying Firms Corporations Trade Associations	$8.6 Million ExxonMobil Spent on Lobbying 2018
		Legislative Issue Advertising		Trade Associations Public Relations Firms	ACCCE "Cold in the Dark" Campaign
		Citizen Mobilization	Conservative Political Groups	Public Relations Firms Front Groups	Americans for Prosperity
		Campaign Contributions	Political Action Committees	Political Action Committees	Freedom Partners Action Fund

Figure 24.1   Organized efforts opposed to climate action

Public Broadcasting Service (Kerr 2005). This approach is known as "affinity of purpose" advertising, and seeks to improve the corporate public image by association with scientific and cultural achievements (Schmertz 1986). Mobil also developed an aggressive public relations campaign. In 1970, the company began buying space on the Op-Ed page of the *New York Times* (Kerr 2005; Schmertz 1977; Brown and Waltzer 2005; see also St John 2014). Its over-arching viewpoint was to emphasize the need for growth in oil use (energy) and the economy (Mobil Oil 1982). Additionally, corporations engage in extended corporate promotional advertising campaigns. To establish and enhance their legitimacy, companies attempt to promote themselves as representing norms of rationality, progress, and appropriate conduct. Excellent examples of these sorts of campaigns are the API's current "Fueling it Forward" campaign or BP's "Beyond Petroleum" campaign. All of the major oil companies now have ongoing major corporate promotion campaigns of this type.

Medium-Term Activities

The second set of activities focuses on the intermediate time horizon of one to five years. This stage involves the translation and promulgation of academic ideas into concrete policy proposals. One key example is the Exxon Carbon Tax proposal, which would place a small tax on carbon while indemnifying fossil fuel companies from civil suits related to their culpability for climate change. In such campaigns, a wide range of distribution channels are employed, from mass media to published books, and testimony provided in Congressional hearings. The major institutional actors in this time frame are think tanks, advocacy organizations and public relations firms, which recruit credible third-party spokespersons to boost the legitimacy of these policy arguments. Public relations firms play a further role during this stage by developing and promulgating materials that support policy objectives and by securing media contacts.

Additionally, these same organizations seek to undermine the science of climate change by attacking the veracity of climate science, as well as high-profile climate scientists. An example of this is the 2009 "Climategate" affair, which involved attacks on a number of climate scientists based on misinterpretations of stolen emails.

Short-Term Activities

The third set of activities focuses on short-term political outcomes such as elections or pending issue legislation. Considerable effort is put into influencing public opinion around climate change. One style of public opinion management is to promote positive perceptions of fossil fuel corporations through the extensive use of advertising campaigns. A second tactic, as mentioned above, involves citizen mobilization and/or the creation of front groups to demonstrate popular support for a political position. A third approach involves lobbying activities, either directly (by corporations or trade associations), or indirectly (through employing public affairs firms to influence legislative outcomes). Such an effort was notable in the high levels of spending by fossil fuel companies on efforts to defeat the Waxman-Markey climate bill in 2009 and 2010 (Brulle 2018).

There is also the use of information and influence campaigns, which straddle the medium- and short-term time frames. Manheim (2011: 18) defines them as "systemic, sequential and multifaceted effort[s] to promote information that orients the political decision-making process toward a desired outcome," either through direct persuasion or persuading other parties to bring pressure on decision makers. As media outlets have proliferated, the bases of a common public opinion have fragmented. Greenberg et al. (2011: 69) noted: "It can no longer be assumed that there is any unity of reason acting as the point of departure and destination for public discourse. Public discourse is fragmented structurally and culturally as different, incommensurable forms of interest come into competitive play." In this situation, organizations have powerful incentives to engage in activities to set the terms of the debate to favor their preferred policy outcomes (Cooper and Nownes 2004: 564). Information and influence campaigns are highly sophisticated and coordinated actions that have now become a routine component of the political process. They are comprehensive, well designed efforts that start with an analysis of the factors that impinge on the decision-making process and then bring pressure to bear to shift that decision in the desired direction. These campaigns involve communication, action and relationship objectives, all designed to manage the outcome to the advantage of the protagonist (client).

COUNTERMOVEMENT IMPACTS

The existing literature has focused on three key impacts of the climate-change countermovement's institutionalized efforts. The first impact is shaping media coverage and the nature of public discourse on the subject of climate change. A major objective of this effort is to create the impression that climate science is uncertain and in dispute, despite an overwhelming scientific consensus concerning the reality of human-caused global warming, thereby promoting debate and delaying action. Strategies involve amplification of outlier viewpoints (Boykoff, 2011), manipulation of norms and conventions of journalism (Boykoff, 2013) and of culture and politics (Carmichael and Brulle, 2017; Tesler, 2018) to distort public understanding of

climate change. To realize this objective, the countermovement organizations focus on 'influencing the influencers'' – the prestige press and opinion leaders. These media efforts serve as a conduit for shaping the nature of climate change coverage, which in turn shapes how the public understands climate change (Brulle et al., 2012; Farrell, 2016a, 2016b).

A second impact of misinformation campaigns can be discerned in public perceptions of climate change, particularly in the U.S.A. but also in several other nations. The most notable effect is that climate change has become one of the most politically polarized issues in the U.S.A., with Republicans and conservatives expressing highly skeptical views because of their receptivity to the misinformation promoted by conservative media and political elites (Bolin and Hamilton 2018). While this polarization is most stark in the U.S.A., it can be discerned in a number of other Western nations where misinformation has been promoted (McCright, Dunlap and Marquart-Pyatt 2016). This politicization of climate change hampers efforts to build public support for climate change policies.

An intimately related third key impact has been the polarization of political elites, with conservative politicians in the U.S.A. and several other nations (most notably Australia, Canada and the UK) endorsing climate change skepticism due to ideological predispositions and funding by fossil fuel interests (Farstad 2018). These elites in turn give off "cues" that signal to lay party members that climate change is a "liberal" issue promoted as a means of increasing governmental regulations (Tesler 2018). The result is that conservative politicians and their followers mutually reinforce one another's skepticism by endorsing climate change misinformation, forming a major barrier to dealing with climate change.

CONCLUSION

Opposition to climate action in particular, and environmental protection in general, is maintained by a comprehensive set of institutional mechanisms that work integrally to develop, promulgate, and advocate for a series of conservative policies across political and cultural arenas. While there are many avenues for climate action in the United States, the political and cultural arenas are critical components. Without success in these areas, other actions will be partial and limited. After decades of inaction, it is clear that the political barriers to climate action have not been overcome. Further targeted research, as discussed above, can help provide the basis for discussion and development of more efficacious strategies and approaches that can inform both funding priorities by foundations and the actions of engaged organizations.

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