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Environmental Politics

ISSN: 0964-4016 (Print) 1743-8934 (Online) Journal homepage: https://www.tandfonline.com/loi/fenp20

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To cite this article: Kerry Ard, Nick Garcia & Paige Kelly (2017) Another avenue of action: an examination of climate change countermovement industries' use of PAC donations and their relationship to Congressional voting over time, Environmental Politics, 26:6, 1107-1131, DOI: 10.1080/09644016.2017.1366291

To link to this article: https://doi.org/10.1080/09644016.2017.1366291

Published online: 24 Aug 2017.

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ENVIRONMENTAL POLITICS, 2017
VOL. 26, NO. 6, 1107–1131
https://doi.org/10.1080/09644016.2017.1366291

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Another avenue of action: an examination of climate change countermovement industries' use of PAC donations and their relationship to Congressional voting over time

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ABSTRACT

The political mobilization of American business elites in the 1970s and 1980s has been well studied by political scientists. Environmental sociologists have explored how industries in this elite countermovement have organized to prevent environmental legislation. The literature often focuses on the efforts of this movement to shape public opinion on climate change. However, political scientists argue business elites are running several parallel strategies simultaneously in order to protect their interests. FEC data are utilized in multilevel logit models to examine how donations from industrial Political Action Committees (PACs) relate to Congressional representative's environmental voting behavior over a 20-year period. Industries associated with the environmental countermovement have increasingly used PAC donations over time, and every additional $10,000 a representative received from countermovement industries significantly decreased odds of their taking the pro-environmental stance even when controlling for representatives' demographics, districts, Congressional polarization and time-period.

ARTICLE HISTORY Received 15 December 2016; Accepted 7 August 2017

KEYWORDS Climate change counter movement; climate change denier movement; political action committees; roll-call voting; league of conservation voters

Introduction

Scholars argue the successes of the social and environmental movements of the 1960s and 1970s prompted the political mobilization of the conservative business class (Duffy 2007, Kraft and Kamieniecki 2007, Jacques *et al.* 2008, Dunlap and McCright 2015). Environmental sociologists have designated this movement the climate change denier movement or climate change countermovement (CCCM) (Jacques *et al.* 2008, Brulle 2013, Dunlap and McCright 2015). While the issue of climate change has galvanized this

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group, the fact that it stems from a social movement that situates itself in opposition to environmental groups' interests (Jacques *et al.* 2008, Brulle 2013, Dunlap and McCright 2015) suggests the CCCM isn't just about preventing climate change legislation. Rather the interests of the individuals and organizations that make up the CCCM are best protected when positioned against environmental protection legislation writ large.

The CCCM developed during a time when 'chief executive officers of major corporations began to play a much more personal and direct role in the political arena than ever before' (Blumenthal (2008(1986)), p. 49, Waterhouse 2013). To understand this elite social movement, environmental sociologists have focused largely on how the CCCM has utilized think tanks to attack the science at the foundation of environmental policy with the goal largely to shape public opinion around climate change (Dunlap and McCright 2015). This line of inquiry has led to evidence of a 'framing contest' of environmental issues in which industry-funded think tanks work to undermine the scientific research that threaten CCCM industries' bottom line (Brulle 2013, Dunlap and McCright 2015). This is achieved by creating what Lukes (1974, p. 22) termed a 'false consciousness about real issues.'

While previous work examining the CCCM has focused on public opinion, corporate political action committees (PACs) provide another way to shape environmental policy. During the time the CCCM worked to obtain political purchase in the USA, PACs became a newly potent mechanism through which corporations could subtly infuse money into the political sphere (Waterhouse 2013). Using this strategy, corporate elites have built 'powerful lobbying infrastructures aimed at the levers of power in Congress' (Waterhouse 2013, p. 46). In laying out priorities for future work in the CCCM area, scholars highlight the need for, 'research on patterns of funding for components of the denial countermovement.' In addition, 'no work to date has been sufficiently longitudinal to fully capture the evolution of the structure, dynamics, and tactics of the denial countermovement' (Dunlap and McCright 2015, p. 321). Here, we work to address these gaps by investigating to what extent CCCM industries have put their energies into a relatively new option for political engagement, PACs.

To achieve this, we examine CCCM industries' donations to congressional representatives via PACs, how these donations relate to congressional roll-call votes, and how CCCM industries' donation patterns compare to other special interest groups over the 20-year period (1990–2010) when the CCCM has been shown to have heightened activity (Jacques *et al.* 2008, Brulle 2013, Dunlap and McCright 2015). Federal Election Commission (FEC) data on industrial PAC donations were obtained from the Center for Responsive Politics. House of Representatives' roll-call votes on 304 pieces of environmental legislation were obtained from the League of Conservation (LCV) organization for this time period. Using multilevel logit models, we survey 4,717 House of Representative

members' environmental voting over time to compare how donations from different industrial PACs change the odds that they voted in the pro-environmental direction, while nesting votes within congressional districts and census regions. Our analysis shows the CCCM has been running a little-examined parallel strategy using corporate PACs to fund decision-makers' campaigns.

Background

Environmental policy scholars term the 1970s America's 'environmental decade' (Layzer 2012, Vig and Kraft 2016), due to the broad-reaching, command and control, policies passed in Congress during this time (Kraft 2016). Bipartisan support for these policies was buttressed by rising public concern about environmental issues (Kraft 2016) and anti-business attitudes (Vogel 1989). Congressional passage of these broad regulatory laws represented an unparalleled political defeat for industry. '[N]ot since the New Deal had the American business community felt so politically vulnerable' (Vogel 1989, p. 145). With public sentiment against them, and policy-makers willing to promulgate these concerns, industry had to work collectively to push back to protect business interests.

The corporate political mobilization of the 1970s and 1980s, and the simultaneous rise of neoliberalism, has been widely studied by political scholars (Vogel 1989, Barley 2010, Waterhouse 2013). Barley argues that during the 1970s and 1980s America's business community developed an 'institutional field' of corporate political influence, made up of a network of secondary organizations (think tanks and PACs) funded by corporations to achieve their goal of limiting redistributive and regulatory policies by lobbying on their behalf to influence Congress, citizens, the media, and the administration (Hess 2014). Environmental sociologists examining the strategies through which corporations have mobilized, specifically in terms of environmental policy during an era of climate change politics, have been limited largely to corporations' influence on the media and public opinion. However, there are many more avenues of action in this institutional field that remain unexamined. Here, we examine one such path, the monetary capital CCCM industries invested in PACs.

Strategies

To understand how the conservative countermovement uses PACs to fight environmentally protective legislation, we first need to acknowledge the specific social pressures they are navigating. Specifically, after the 1960s, the US populace was much more apt to give high priority to the environment than ever before (Layzer 2012). During this period, the business community, and their political allies, found themselves unable to directly attack

environmental protection policy (Layzer 2012). To do so would quickly result in stiff opposition by environmentalists, an outraged media, and resulting legislative reluctance (Layzer 2012). In the face of this resistance, conservatives changed their lobbying tactics to implement a more subtle strategy. (Layzer 2012)

While, '[d]efinitions of lobbying vary greatly from user to user' political scientists generally specify two lobbying strategies: direct/inside lobbying or indirect/outside lobbying (Leech 2010, p. 535). Direct or inside lobbying generally refers to direct information exchanges, like face-to-face meetings between interest groups and officials (Duffy 2012). Indirect or outside lobbying typically means mobilization of the public, through such things as waging media campaigns, and creating think tanks (Layzer 2012, p.52). The CCCM literature has focused largely on examining changes in the 'indirect lobbying' strategies of this elite social movement, specifically in regards to shaping public opinion on climate change. For example, Elsasser and Dunlap (2013) examined 203 conservative op-eds between 2007 and 2010, finding a narrative that was dismissive of climate change concerns. Jacques *et al.* (2008, p. 349) analyzed 141 'environmentally skeptical books' finding roughly 90% of them to be linked to conservative think-tanks, and McCright and Dunlap (2000, 2003) analyzed the content on conservative-leaning think tanks' social media platforms from 1990 to 1997, concluding that these groups were disseminating information aimed at constructing the 'non-problematicity' of climate change.

However, in addition to institutionalizing new 'indirect lobbying' strategies, the environmental countermovement also made changes to their 'direct lobbying' tactics by heavily investing in PACs (Layzer 2012). The political science literature demonstrates that during the 1970s, 'corporate PACs multiplied [...] funded largely through donations by successful businesspeople' (Waterhouse 2013, p. 17). Although the first PAC was created in 1943, their use remained a small part of political campaigns until 1974, when an amendment to the Federal Election Campaign Act allowed, 'a corporation to use treasury money to establish, operate, and solicit contributions to a PAC,' and, solicit donations from 'the corporation's employees as well as its stockholders' (FEC 2007). Disclosure laws during this time period have been ambiguous and not well understood by the public, allowing for discreet donations from industries (Thomas 1998). In addition, PACs have been allowed to spend unlimited funds on 'independent expenditures' which pay for a candidate's election efforts, such as funding television advertisements, mass mailing, and other campaign communications. PACs are a part of a multi-prong electioneering strategy that, 'seeks to frame issues before elections, and to then support candidates who back their positions on those issues' (Duffy (2007, p. 63). Industrial PACs are integral to this strategy by running advertising campaigns whereby they,

'spend unlimited amounts on behalf of issues and candidates they like or against those they dislike' (Duffy 2007, p. 76). This allows industries to influence public perception on an issue, lending their experts and positions credibility, as well as helping to support campaign activity and gain access to policy-makers.

Theories of how donations from interest groups might influence policy-makers often range along a functionalist-conflict perspective continuum, with some arguing that donations from organized interest groups are similar to gifts among friends (Clawson *et al.* 1992), and others contending that donations are used to 'purchase' voting behavior (Levitt 1998). Logistically, political influence can be understood through material and informational means (Austen-Smith 1993). Materially, interest groups provide policy-makers physical and monetary resources (e.g. staffing, buildings), whereas informational influence reflects the fact that it can be challenging for representatives and their staff to become educated about complex legislative issues (Hall and Deardorf 2006). This creates an opportunity for interest groups to strategically frame information by emphasizing, or removing, information that the group prefers policy-makers to consider, or not consider, in their decisions (Austen-Smith and Wright. 1992). Although there has been little support for the argument that campaign donations provide a quid-pro-quo for a representative's policy vote, there is evidence that donations allow for greater access to representatives. For example, policy-makers were 3–4 times more likely to make themselves available to meet with lobbyists when requests randomly included acknowledgment that the special interest group had previously donated to the member's campaign (Kalla and Broockman 2016). Similarly, when a representative steps down from a committee the contributions they received from business PACs whose activities were overseen by that committee were reduced, whereas donations to incoming members increased (Powell and Grimmer 2016).

While scholars continue their efforts to uncover the exact mechanisms through which political donations impact legislative behavior, empirical work demonstrates a robust relationship between donations and roll-call votes that protect donors' interests. A meta-analysis of 30 studies of PAC influence on representative's roll-call voting behavior concluded that one-third of roll-call votes are impacted by campaign contributions (Roscoe and Jenkins 2005). Studies that focus on environmental voting find similar results. For example, an examination into the 2011 House bill that overturned a moratorium on offshore drilling reported that representatives who received more money from PACs that supported the bill were significantly more likely to vote for its passage (Kahane 2016). In a recent analysis of roll-call votes on four cap-and-trade bills, Vandeweerdt *et al.* (2016) found PAC donations from industries most vulnerable to climate legislation were significantly associated with recipient policy-makers voting against these bills.

However, even when accounting for political donations, the strongest predictor of representatives' environmental voting has been shown to be political party affiliation, with Republicans voting consistently against environmental protections and Democrats supporting these measures (Ard and Mohai 2011). This party gap has grown to unprecedented levels in recent decades with a number of theories emerging to explain this trend (Dunlap *et al.* 2016). For example, Shipan and Lowry (2001) argue that because different regions in the USA represent different environmental values, shifting representation of regions within parties could result in divergent party behaviors. Alternatively, they point out, it might be that interest groups are supporting representatives with stronger anti-environment views, giving these factions more power to shape party positions (Shipan and Lowry 2001). Others claim congressional polarization is a response to constituent priorities which have become more polarized over time (Dunlap *et al.* 2016). Some instead contend that ideological elites are shaping public opinion (McCright *et al.* 2014). Thus, Carmichael and Brulle (2017) analyzed 74 separate public opinion surveys on climate change from 2002 to 2013, finding media coverage, which they argue was largely a function of elite cues, was a strong latent predictor of public opinion. The analyses presented here control for polarization in Congress as well as other important confounders, to examine to what extent donations from industrial PACs relate to congressional roll-call votes.

Data and methods

Congressional voting data

Congressional voting data on environmental issues were obtained from the League of Conservation Voters which has been tracking U.S. Congressional votes on environmental policy since 1970 (LCV 2017). Leaders from nearly 20 respected environmental organizations select key votes in Congress and code a representatives' votes as 1 if they voted in the pro-environmental direction, or zero if they did not or were absent for the vote (LCV 2017). One of the ways LCV signifies the importance of a piece of legislation is by counting it twice; explanations why each piece of legislation was chosen by environmentalists are accessible on their website (LCV 2017). In addition to various environmental issues, legislation might represent 'procedural' changes, a strategy used to slow down environmental policy (e.g. Layzer 2012, Kraft 2016). LCV scorecard data have been widely used in analysis of environmental voting for over 40 years (Shipan and Lowery 2001, Brulle *et al.* 2012, Newman *et al.* 2016). Annual voting records for members of the House of Representatives were obtained from 1990 to 2010.

While the LCV are a fair representation of what policies were of most concern to environmental special interest groups in Congress, no measure is perfect. For

example, LCV data only captures roll-call votes and does not reflect sponsorship of a piece of legislation or public support of an issue. Some organizations have developed their own data to rate environmental stances by recording press releases, letters to the editor, or taking part in ribbon cutting ceremonies (Climate Hawks Vote 2017) or compiling lists of legislative proposals (Center for Climate and Energy Solutions 2017). While these data are likely useful for those researchers investigating displays of environmental concern, we are particularly interested in understanding the underlying factors influencing substantive policy actions. Moreover, these alternate data sources are not yet prominent in the literature, and because they were created more recently, often do not encompass earlier years of the CCCM. As we argue, CCCM industries see themselves in opposition to environmental group's interests, the fact that LCV scores represent a consensus of what environmental groups determine are the most important issues makes this a sufficient measure for our analyses.

Table 1 shows the average Republican across this time period voted along pro-environmental stance 20% of the time, while Democrats voted along pro-environmental stances 77% of the time. On average, representatives in the House voted on 304 important pieces of environmental legislation in this period, an average of 15 per year. The minimum number of environmental policies voted on in a session was eight, and the maximum was 24. The number of environmental bills put to vote from 1990 to 2010 showed no increasing or decreasing trend. The topics, scope, and impact each policy had on the environment varied. However, the titles of polices suggest the majority were related to oil, energy, land and water (LCV 2017). As a sensitivity analysis we ran the following models with only those 23 pieces of legislation that mentioned climate change or global warming in their titles. The results were remarkably similar to those presented below so we chose to utilize the full dataset to better understand the role the CCCM might have in understanding legislative voting on environmental policy writ large. Due to the changing number and subject matter of policies voted on over time, the percentage of pro-environmental votes might not be comparable across Congresses. While some have transformed these scores by calculating members' mean preferences over time (Groseclose *et al.* 1999) others have found that adjusted LCV scores made no practical difference (Newman *et al.* 2016). Our method allows us to side-step this issue by using hierarchical linear models, which nest votes within individuals while controlling for covariates at various levels and time periods. This allows us to calculate the changing odds that a representative took the pro-environmental stance over time. We outline these models below.

Demographic data

Demographic data on representatives' gender, race, year of birth, and education were obtained for each member of the House of Representatives, for the 101st to

Table 1. Descriptive statistics on PAC Donations & sociodemographic variables for all representatives and by party from 1990 to 2010.

	Republicans	Democrats
Average LCV Score	20%	77%
Percentage of time vote is pro-environment		
Biographical		
Mean Year Born	1946	1944
Sex		
Male	2,036	2,089
Female	183	409
Race		
non-Hispanic White	2,170	1,925
African American	7	381
Hispanic	33	157
Asian	9	35
Education		
High School	143	105
Bachelor's or Associate	744	686
Graduate Degree	1,332	1,707
Economic Regions		
1 New England	56	189
2 Middle Atlantic	287	414
3 East North Central	378	414
4 West North Central	172	157
5 South Atlantic	443	392
6 East South Central	143	147
7 West South Central	264	245
8 Mountain	185	92
9 Pacific	291	448
N	2,219	2,498

111th Congresses, from the Congressional Quarterly Press' Congress Collection. Descriptive statistics on these measures are broken down in Table 1. On average, there were twice as many female Democrats as female Republicans. Non-Hispanic whites made up 98% of Republicans and 77% of Democrats. In both parties the majority of representatives held a graduate degree, but in general, Democrats had higher levels of education than Republicans, 68% of Democrats holding degrees, compared to 60% of Republicans. Both parties had a similar average age, with the mean year Republicans were born being 1946 and Democrats 1944. Those representatives who could vote at their own discretion, i.e. Speakers of the House, were dropped from the analysis as they had no recorded LCV votes, resulting in 4,717 congressional representatives included in the results presented below.

Political donations data

Because the rules of PAC spending were significantly altered by the Citizens United case in 2010 (Hansen *et al.* 2015, La Raja and Schaffner 2014), we constrained our analysis of donations to years prior to 2010 to maintain consistency in the motivations and lobbying options open to corporations. This also

allows us to focus on the period when the CCCM grew most readily. Therefore, the results presented below are likely an underestimate of industrial donations today. We use 1990–2010 data from the Center for Responsive Politics which uses information a PAC discloses to the FEC. This data is used to classify the corporation, trade association, union or other entity that controls the PAC into 13 meta-categories, or sectors, which it further breaks down into 92 industries. These categories generally fall within the same groupings as the North American Industry Classification Systems (NAICS) but not exactly, as PACs can also be classified as purely ideological, such as those promoting gun rights or abortion issues. We excluded unrelated ideological PACs, such as those classified for and against abortion, gun rights and gun control, pro-Israel, general liberal and conservative PACS, and leadership PACs. We did, however, include relevant ideological PACs, such as those specified as environmental and human rights organizations.

With the remaining 70 industries we ran pairwise correlations with representatives' LCV scores and discarded those that had no significant relationship with LCV scores at the 0.05 level (Gambling, Civil Servants, Clergy, Construction, Environmental Services/Equipment, Lobbyists, Miscellaneous Agriculture, Communications/Electronics, Live Entertainment, Savings and Loans, Sea Transport, Securities, TV/Movies/Music) For the remaining 61 industries, we classified eight as indicative of the CCCM: Oil and Gas (e.g. American Petroleum Institute), Mining, Electric Utilities, Chemical industry, Steel Production, Waste Management, and Miscellaneous Energy and Manufacturing (e.g. Automobile manufacturers, National Association of Manufacturers). These industries have previously been recognized as part of the countermovement working against environmental interests (Vandeweerdt *et al.* 2016, Brulle 2013, sup; Layzer 2012).

We grouped the remaining 53 industries significantly correlated with LCV according to their industrial sectors, which we confirmed were generally related to the directionality of their relationship with LCV scores. This resulted in the following industrial sectors included in our analyses: Agriculture, Retail Business (e.g. Chamber of Commerce), Construction, Defense, Health, Ideological, Labor, Communications/Electronics, Finance, Insurance and Real Estate, Lawyers, Natural Resources, Non-Profits and Transportation (e.g. railroads). While some PACs classified under labor unions (e.g. Coal Miners Union) might indeed share some motivations with the industries represented in our CCCM classification, we kept them separate as we expect these groups have a more diverse set of motivations based around their members' health rather than the primary economic incentives that likely motivate the other PACs we 8 group under the CCCM. Similarly, we chose to keep transportation interests separate from those in the CCCM as this industrial sector was largely supportive of biofuels (Herrera 2006), as were environmental groups, and thus have a softer position on environmental issues than the other industries identified. See Table 2 for a complete breakdown of which industries were grouped in each sector, a full

Table 2. Political action committee industry/sector breakdown from 1990 to 2010.

Sector	CCCM Industries*	Agribusiness	Retail Business	Communications/ Electronics	Construction	Defense	Finance, Insurance & Real Estate
Industry	**Oil & Gas** **Mining** **Electric Utilities** **Misc Energy** **Steel Production** **Misc Manufacturing** **Chemical & Related** **Waste Management**	Crop Production Dairy Food Processing Livestock Poultry & Eggs Agricultural Services Tobacco Forestry & Forest Products	Beer, Wine & Liquor Retail Sales Food & Beverage Business Associations Lodging/ Tourism Misc Business Misc Services Textiles Business Services	Computers/Internet Printing & Publishing Telephone Utilities Telecom Services & Equipment Electronics Mfg & Services	General Contractors Special Trade Contractors Home Builders Building Materials & Equipment	Defense Aerospace Defense Electronics Misc Defense	Accountants Insurance Commercial Banks Finance/Credit Companies Real Estate Credit Unions Misc Finance
Sector	**Health**	**Ideological/Single-Issue**	**Labor**	**Lawyers**	**Natural Resources**	**Non-Profits**	**Transportation**
Industry	Hospitals/Nursing Homes Health Services/HMOs Health Professionals Misc Health Pharmaceuticals/Health Products	Environment Human Rights	Industrial Unions Misc Unions Public Sector Unions Transportation Unions Building Trade Unions	Lawyers/Law Firms	Fisheries & Wildlife	Retired Education Non-Profits	Air Transport Trucking Railroads Automotive Misc Transport

list of the corporate PACs listed under each industry is available on the center's website.

In all our analyses, the amount of donations from PACs was adjusted for inflation in order to make them equivalent to 2010 donations and then divided by 10,000 for ease of interpretation in our statistical models. Table 3 breaks down the average amount given by industrial PACs by party. Across all industries, Republicans received $634 less on average than Democrats. Primarily, this is due to the large amounts of money given by labor unions to Democrats. Excluding labor unions, Republicans received $3,628 dollars more on average from PACs than Democrats. In general, Republicans received $2,746 more on average than Democrats from CCCM industries.

Analytic strategy

Congressional roll-call votes represent repeated observations on an individual over time; therefore, we used mixed model logistic regression (SAS PROC GLIMMIX) to estimate the probability of a representative's pro-environmental vote. Each observation is a vote on an environmental issue by a representative. Predictor variables included fixed effects for a representative's race, sex, education, party and which of the nine census regions their district was located in. We also included a fixed-effect interaction variable between party and congress to control for political polarization and covariates for industrial PAC donations. Finally, a random effect for each

Table 3. Average amount from PAC per representative from 1990 to 2010.

	Republicans	Democrats
CCCM Industry		
Oil & Gas	$13,894.81	$5,346.37
Mining	$3,035.74	$1,011.30
Electric Utilities	$14,085.40	$10,742.55
Misc Energy	$1,335.87	$1,079.57
Steel Production	$752.47	$654.91
Misc Manufacturing	$6,239.71	$3,468.82
Chemical & Related	$4,290.64	$2,107.54
Waste Management	$692.36	$607.45
Sector		
Agribusiness	$28,337.27	$19,178.88
Retail Business	$27,792.92	$13,763.69
Communications/Electronics	$11,741.50	$8,483.55
Construction	$12,055.41	$5,146.31
Defense	$12,488.89	$9,809.60
Finance, Insurance & Real Estate	$53,284.51	$38,902.95z
Health	$40,329.49	$33,988.57
Ideological	$629.45	$3,243.74
Labor	$13,743.06	$103,894.20
Lawyers	$8,634.58	$15,602.57
Natural Resources	$425.23	$110.79
Non-Profits	$396.72	$625.90
Transportation	$20,905.08	$11,244.33

person, nested within race, sex, education and region, was included to control for repeated votes by the same subject. We ran sensitivity analyses including a fixed effect for age, as well as the year the representative started in Congress. Neither variable was significant and results were virtually identical to those presented below. In addition, we ran LCV as a lagged variable to see if donations from the previous year impacted future LCV; the results were substantially the same.

Results

One of the major questions we seek to answer is whether those industries that benefit from the CCCM have increased their utilization of PAC donations to take part in the political system. Figure 1 shows the average annual change in PAC donations by industrial sector from 1990 to 2010 in inflation-adjusted dollars. We can see that for every industrial sector examined, the total amount of money donated increased. Results showed that PACs representing the health sector increased the most, averaging $5,568.60 dollars more every year, followed by finance, unions, and CCCM. CCCM PACs average annual donation increased a little over $3,100 a year from 1990 to 2010. However, we can see from Figure 2 that these donations were not equally spread across political parties. Labor unions were the most polarized in their donations, giving on average $91,381.49 more to Democrats than Republicans. The second most polarized PAC donations were by CCCM industries who donated on average $18,664.54 more to Republicans than to Democrats.

To examine the relationship between these donations and environmental voting over time, we present 6 models (see Table 4) . Models 1–3 show results with CCCM averaged across the eight industries identified as most benefiting from the CCCM. Models 4–6 are useful in order to break down what specific industries within the CCCM group are leading the trends we see in the first three models. All models control for Congress and political polarization; however, while significant, these estimates are not shown, so as to keep the Table uncluttered and focused on the variables of interest. Models 1 and 4 are both run on the full dataset, with all parties included. The odds that a Democrat voted the pro-environmental position were 13 times the odds that a Republican took this position. African-American representatives voted pro-environment 51% more often than white representatives, Hispanics representatives 71% more often than whites representatives, and the odds of an Asian representative voting in the pro-environmental direction were 40% higher than white representatives. Interpreting African-Americans in the Republican-only models (Models 2 and 5) is problematic as there were only 7 African-American members across all Congresses. However, there were sufficient numbers of Hispanic

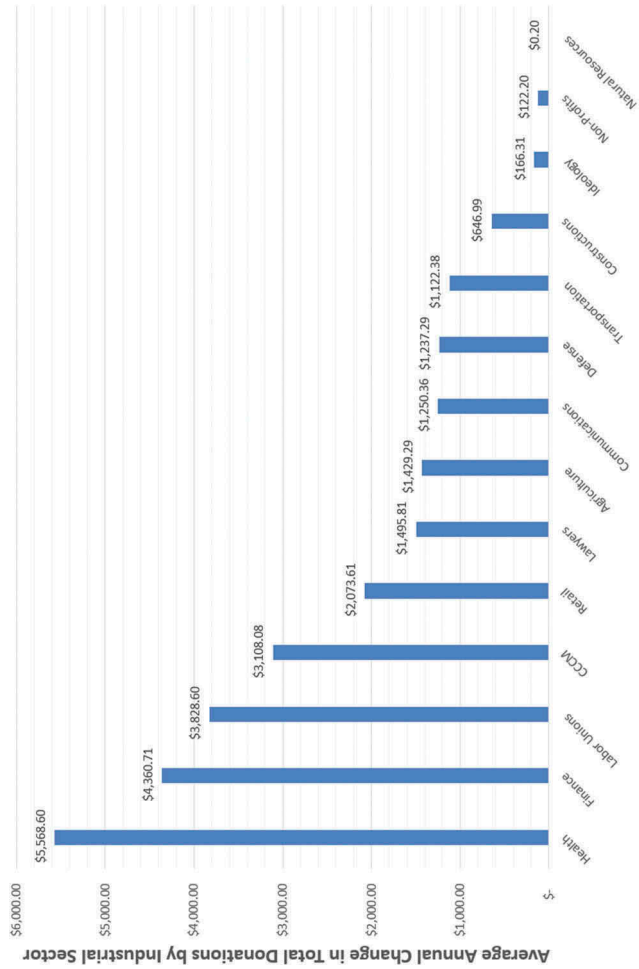

Figure 1. Average annual change in total PAC donations by industrial sector from 1990-2010.

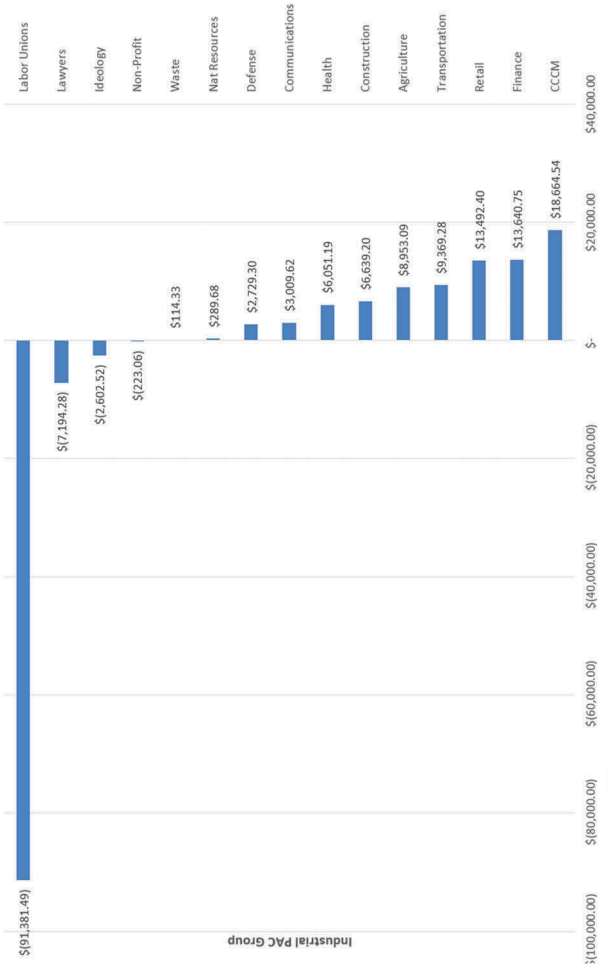

Figure 2. Average difference in PAC donations given to Republican members of the House of Representatives compared to Democrats from 1990-2010.

Table 4. Results from multilevel ordered logistic regression models predicting pro-environmental voting from 1990 to 2010.

		Model 1				Model 2				Model 3				Model 4				Model 5				Model 6			
		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence	
						Republicans Only				*Democrats Only*								*Republicans Only*				*Democrats Only*			
	Party																								
	Democrat	13.30	***	11.72	15.09									13.27	***	11.70	15.05								
	Race																								
	Non-Hispanic White	Ref				Ref				Ref				Ref				Ref				Ref			
	African American	1.51	***	1.20	1.90	0.70		0.18	2.76	1.39	*	1.12	1.72	1.52	***	1.21	1.91	0.69		0.18	2.73	1.39	**	1.12	1.72
	Hispanic	1.72	**	1.38	4.25	2.37	*	1.05	5.35	1.32	*	0.96	1.83	1.70	**	1.23	2.36	2.39	*	1.06	5.39	1.29		0.93	1.79
	Asian	2.42	**	1.24	2.38	2.45	*	1.03	5.81	1.87	**	0.93	3.75	2.42	**	1.38	4.24	2.39	*	1.01	5.69	1.87		0.93	3.76
	Sex																								
	Male	Ref				Ref				Ref				Ref				Ref				Ref			
CCCM	Female	1.59	***	1.33	1.90	1.27		0.93	1.72	1.52	***	1.24	1.86	1.58	***	1.32	1.89	1.22		0.90	1.66	1.51	***	1.23	1.85
	Education																								
	Graduate	Ref				Ref				Ref				Ref				Ref				Ref			
	Bachelors/ Associates	0.75	***	0.45	0.73	0.81	*	0.67	0.99	0.76	**	0.65	0.89	0.75	***	0.66	0.85	0.83	*	0.68	1.00	0.76	**	0.65	0.89
	High School	0.57	***	0.66	0.85	0.63	*	0.45	0.90	0.66	*	0.48	0.90	0.58	***	0.45	0.74	0.64	*	0.45	0.91	0.66	**	0.48	0.90
	Region																								
	1 New England	3.48	***	2.58	4.68	8.03	***	4.77	13.52	1.85	***	1.32	2.61	3.54	***	2.64	4.75	8.59	***	5.19	14.23	1.80	***	1.28	2.53
	2 Middle Atlantic	1.73	***	1.39	2.15	3.22	***	2.30	4.52	0.94		0.72	1.23	1.71	***	1.37	2.12	3.25	***	2.32	4.54	0.92		0.70	1.21
	3 East North Central	0.99		0.80	1.22	1.62	**	1.17	2.24	0.65	**	0.50	0.84	0.96		0.78	1.19	1.65	**	1.19	2.27	0.62	***	0.48	0.80
	4 West North Central	0.71	**	0.55	0.92	1.19		0.82	1.74	0.49	***	0.35	0.69	0.70	**	0.54	0.91	1.20		0.82	1.74	0.48	***	0.35	0.68
	5 South Atlantic	0.76	*	0.62	0.94	1.29		0.94	1.77	0.50	***	0.38	0.65	0.76	**	0.62	0.94	1.33		0.97	1.82	0.49	***	0.37	0.63

(*Continued*)

Table 4. (Continued).

		Model 1				Model 2				Model 3				Model 4				Model 5				Model 6			
		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence		Odds-Ratio		95% Confidence	
	6 East South Central	0.36	***	0.27	0.47	0.63	*	0.41	0.97	0.24	***	0.17	0.33	0.36	***	0.27	0.47	0.62	*	0.41	0.95	0.23	***	0.17	0.33
	7 West South Central	0.31	***	0.24	0.39	0.50	***	0.35	0.72	0.22	***	0.16	0.29	0.33	***	0.26	0.41	0.49	***	0.35	0.71	0.23	***	0.18	0.31
	8 Mountain	0.55	***	0.42	0.71	0.70		0.48	1.02	0.57	*	0.40	0.83	0.57	***	0.43	0.75	0.66	*	0.45	0.96	0.61	**	0.42	0.88
	9 Pacific	Ref				Ref				Ref				Ref				Ref				Ref			
	PAC Industry/Sector																								
	CCCM	0.98	***	0.97	0.99	0.99		0.97	1.00	0.97	***	0.95	0.98												
CCCM	Oil Gas													0.96	**	0.93	0.98	1.00		0.96	1.04	0.93	***	0.89	0.97
	Mining													0.97		0.89	1.04	1.05		0.94	1.17	0.86	**	0.76	0.96
	Utilities													0.97	*	0.95	1.00	0.95	**	0.92	0.99	0.99		0.96	1.02
	Energy													0.97		0.87	1.08	1.00		0.84	1.19	0.94		0.82	1.08
	Manufacturing													1.02		0.97	1.08	0.99		0.92	1.05	1.03		0.95	1.12
	Chemical Manufacturing													1.13	***	1.06	1.20	1.12	*	1.02	1.23	1.10	*	1.01	1.21
	Steel Production													0.90		0.79	1.01	0.83	*	0.70	1.00	0.97		0.81	1.15
	Waste Management													0.90		0.78	1.03	0.94		0.76	1.17	0.84		0.70	1.00
	Finance	1.00		0.99	1.01	1.00		0.99	1.01	1.00		0.99	1.01	1.00		0.99	1.01	1.00		0.99	1.01	1.00		0.99	1.01
	Natural Resources	0.80		0.62	1.03	0.92		0.68	1.24	0.47	**	0.29	0.77	0.81		0.63	1.04	0.87		0.64	1.17	0.48	**	0.29	0.79
	Ideological	1.12	**	1.04	1.21	1.48	***	1.25	1.75	1.05		0.96	1.14	1.12	**	1.04	1.21	1.48	***	1.25	1.76	1.06		0.97	1.15
	Lawyers	1.03		1.00	1.06	0.99		0.93	1.04	1.06	*	1.01	1.10	1.02		0.99	1.06	0.99		0.93	1.05	1.05	*	1.00	1.09
	Defense	1.02		1.00	1.04	1.03		1.00	1.06	1.01		0.99	1.04	1.02	*	1.00	1.04	1.03		1.00	1.06	1.01		0.99	1.04
	Agriculture	0.98	***	0.97	0.99	0.98	*	0.96	1.00	0.98	**	0.97	0.99	0.98	***	0.97	0.99	0.98	**	0.96	0.99	0.98	**	0.97	0.99
	Construction	1.02		0.98	1.06	1.03		0.98	1.09	0.94		0.88	1.00	1.01		0.97	1.06	1.02		0.97	1.08	0.94		0.88	1.00
	Transportation	0.98		0.96	1.01	0.94	**	0.91	0.98	1.01		0.97	1.04	0.98		0.96	1.00	0.94	***	0.91	0.97	1.01		0.98	1.05
	Labor Unions	1.01	***	1.01	1.02	1.07	***	1.05	1.09	1.01	**	1.00	1.02	1.01	***	1.01	1.02	1.07	***	1.05	1.10	1.01	**	1.00	1.02
	Communications	1.02		0.99	1.04	0.99		0.95	1.02	1.05	*	1.01	1.09	1.01		0.98	1.04	0.98		0.95	1.02	1.03		0.99	1.07
	Health	1.01	***	1.01	1.02	1.01		1.00	1.02	1.02	***	1.01	1.03	1.01	**	1.00	1.02	1.01		1.00	1.02	1.02	**	1.01	1.03
	Non-Profit	0.94		0.81	1.10	0.87		0.66	1.15	0.93		0.78	1.13	0.95		0.82	1.11	0.88		0.67	1.16	0.92		0.77	1.12
	Retail	1.01		0.99	1.03	1.03	*	1.01	1.06	0.97	*	0.94	1.00	1.00		0.98	1.02	1.03	*	1.00	1.06	0.97		0.94	1.00

***$p < 0.001$; **$p < 0.01$; * $p < 0.05$

Republican representatives for interpretation; those 33 Hispanic Republicans voted pro-environmental 2.4 times more often than white Republicans. As the Democratic Party was much more racially diverse we can have more confidence in the results of models 3 and 6 which are only run on Democrats. These models demonstrate that African-American Democrats vote the pro-environmental position 39%, Hispanic Democrats 30%, and Asian Democrats 87% more often than white Democrats. These latter two groups lost significance in Model 6, raising the question of whether there might be interesting funding patterns by race that could be further explored in a future paper.

In the full models, and those with only Democrats, the odds a women representative took the pro-environmental stance were significantly higher than their male colleagues. In the full models, women took the pro-environmental position approximately 59% more often than men, and in the Democrat-only models women took the pro-environmental position 52% more often than men. Interestingly, the 183 female Republican representatives did not seem to vote significantly differently than their male counterparts. Somewhat surprisingly, these models showed educational background explained a significant amount of variation in environmental voting. In the full models, Models 1 and 4, representatives with a bachelors/associates degree voted the pro-environmental position 25% less often than those with a graduate degree, and representatives with a high school diploma 43% less often than those with a graduate degree. This was relatively consistent in the party-only models. Republicans with a high school diploma voted 37% less pro-environmentally than Republicans with a graduate degree, and Democrats with just a high school diploma voting pro-environmentally 34% less often than Democrats with a graduate degree. There was a slightly significant difference between the environmental voting of those Republicans with a Bachelors or Associate degree and those with a graduate education, such that those with a Bachelors or Associate degree voted for the pro-environmental position 18% less than those with a higher degree. This difference was also significant in the Democrat-only models, Models 3 and 6, where representatives with a Bachelors or Associate degree voted for the pro-environmental position 24% less often than those with a graduate degree.

Census regions were a significant explanatory variable of environmental voting, with representatives from New England voting the most pro-environmental, typically voting pro-environment 3.5 times more often than representatives from the Pacific Region. This effect was even stronger for Republicans from New England, who voted the pro-environmental position 8 times more often than Republicans representing the Pacific Region. One unexpected finding was that Republicans representing states in the East North Central Region (i.e. Indiana, Illinois, Michigan, Ohio and

Wisconsin), voted pro-environment over 60% more often than Republicans from the Pacific region. This however was not the case for Democrats from this census region who voted pro-environment 39% less often than Democrats from the Pacific Region (Alaska, California, Hawaii, Oregon, and Washington).

Our estimates for PAC donations present some interesting findings. First, when examining Model 1, which includes all parties and estimates the effect of the average donation across the eight CCCM industries, we see that for every additional $10,000 donation an individual received from a CCCM PAC their probability of voting against the pro-environmental position decreased by 2%. This relationship was marginally significant in the Republican-only model, Model 2, which showed that a Republican representative's likelihood of voting pro-environment decreased by 1% with every additional $10,000 donation from a CCCM industry. However, the effect was strongly significant for Democrats, whose probability of a pro-environmental vote decreased by 3% for every extra $10,000 donation they received from a CCCM PAC.

When we break the CCCM group down into its component industries in Models 3–6, we can see which industries are the drivers for these patterns. In the full party model, Model 4, every additional $10,000 donation an individual received from an Oil and Gas PAC decreased their probability of voting for the pro-environmental position by 4%. Similarly, for every additional $10,000 donation from a Utilities PAC the probability of a pro-environmental vote decreased by 3%. These relationships are strikingly different when parties are separated and compared in Models 5 and 6. Oil and gas donations were not a significant predictor of Republican's environmental voting; the odds that Republicans who received more money from Oil and Gas PACs voted against environmental legislation were not greater than those who received less donation money. Results for Democrats, on the other hand, showed that for every additional $10,000 donation received from Oil and Gas PACs a representative's probability of voting in the pro-environmental position decreased by 7%. Donations from mining were not significantly related to environmental voting in the full model or the model with Republicans, Models 4 and 5, but for every additional $10,000 donation a Democrat received from mining PACs the probability they would vote pro-environment decreased by 14%. On the other hand, a significant predictor of Republican voting, but not Democrat voting, was donations from Steel Producers; every additional $10,000 donation to a Republican representative decreased the probability they would take the pro-environmental position by 17%.

One of the most illuminating findings from these analyses is the predictors of pro-environmental voting. Ideological groups, comprising human rights and environmental groups, increased the probability that

Republicans would chose a pro-environmental position by 48%, but these PAC groups had no effect on Democrats. A predictor with a significant and similar effect on voting across party lines was donations from Labor Union PACs. For example, every additional $10,000 donation increased the probability of a Republican taking the pro-environmental position by 7%, but only increased the probability by 1% in the full model (Model 4), and by 1% in the Democrat only model (Model 6). One of the more unexpected relationships to pro-environmental voting can be seen with Chemical Manufacturing PACs. Every additional $10,000 donation a representative received increased the propensity for a pro-environmental vote by 13% in the full model (Model 4). This relationship was found to be a stronger indicator of Republicans' environmental voting than Democrats, increasing the probability of a pro- environmental vote from a Republican by 12% but only % for Democrats, where it lost much of its significance. This relationship is likely due to this group's interest in increasing the use of biofuels (Herrera 2006) which was the pro-environmental position of several LCV bills.

Most directions of the relationship between PAC donations and voting bolstered voting in the direction of the party platform. For example, increased donations from the transportation industry was associated with a 6% decrease in the propensity of a Republican to vote pro-environment on an issue. Similarly, donations from Lawyer and Communication PACs had a slightly positive relationship to pro-environmental voting for Democrats, with every additional $10,000 donation increasing the propensity of a pro-environmental vote by approximately 5%. Donations from Health PACs was a relatively strong predictor for Democrats' pro-environmental voting, with every additional $10,000 increasing their propensity to vote in the pro-environmental direction by approximately 2%. Donations from Defense PACs, largely funded by aerospace and electronic interests, were also associated with pro-environmental voting. However, this relationship was only marginally significant and only in the 12 full model, such that overall every additional $10,000 donation from Defense PACs increased the likelihood of pro-environmental voting by 2%.

Two types of PACs were related with party members voting in the opposite direction of the expected relationship based on the broader political parties' position. Natural resource PACs, fisheries and wildlife groups, significantly predicted environmental voting for Democrats, such that every additional $10,000 donation decreased their probability of a pro-environmental vote by 52%. However, these PACs had no significant relationship with Republicans' voting. Similarly, every additional $10,000 donation from a Retail PAC to a Republican increased the likelihood of voting pro-environment by 3%, but had the opposite effect on Democrats, every additional $10,000 donation decreasing the likelihood of a pro-

environmental vote by 3%. The industries that made up Retail PACs' interests were the most varied, ranging from lodging and tourism to textiles, and these results should be interpreted with caution. On the other hand, agriculture had the most consistent effect across models, showing that every additional $10,000 donation received was associated with a 2% decrease in the chances that a representative from either party took the pro-environmental position.

Conclusions

Research on the CCCM has attempted to capture the increasing political involvement of the American business community in the realm of environmental policy-making (Jacques *et al.* 2008, Brulle 2013, Dunlap and McCright 2015). However, this literature has largely focused on the strategy to shape public opinion via the media and overlooked other avenues of corporate influence. We identify the dramatic increase in the use of PACs as one of these under-examined forms of political influence (Waterhouse 2013). Our results show that CCCM have significantly increased their donations over the period examined, by on average an additional $3,108.08 annually to each Congressional member. While this pattern was consistent with patterns of increasing donations across all 13 industrial groups examined, CCCM PACs were among the top groups to increase their giving. Those PACs with the largest increase in donations were associated with Health, followed by Finance and Labor Unions, and then CCCM industries. After Labor Unions, CCCM industries' donations were the most politically polarized, benefiting Republicans on average $18,664.54 more annually than Democrats. Results from our multilevel logit models demonstrate that for every extra $10,000 received from CCCM industries (Oil and Gas, Mining, Electric Utilities, Chemical industry, Steel Production, Waste Management, and Miscellaneous Energy, and Miscellaneous Manufacturing), the chances the representative would cast a pro-environmental vote decreased significantly. Importantly, when models were run separately by political party, we saw that donations from CCCM industries were only a significant predictor of Democrats' environmental voting and not Republicans'. These results support the idea that CCCM did indeed make greater use of lobbying after the 1980s and that these donations were significantly associated with Democrats voting against their party's pro-environmental platform.

Our results are also interesting on the effects of other, less examined PACs. The strongest PAC predictor of pro-environmental voting for Republicans was donations from environmental or human rights groups. For every extra $10,000 a Republican representative received from these groups the likelihood they voted in the pro-environmental direction

increased by 48%. A similar powerful predictor of a representative going against their party platform was seen with donations from Natural Resources PACs (Fisheries and Wildlife groups), where every extra $10,000 was associated with a 52% decrease in the odds a Democrat would cast a pro-environmental vote. The large effect of donations from this PAC was striking due to the fact that Natural Resources PACs do not typically donate large amounts, and when they do donate, they are more likely to donate to Republicans. In contrast, Labor Unions donated by far the most money of all PACs. The effect of these donations was consistent across political parties, with a $10,000 increase in donations from Labor Unions associated with a 7% increase in the odds a Republican voted pro-environment, and a 1% increase for Democrats. A similarly consistent relationship, but in the opposite direction, was seen with donations from Agricultural PACs, which decreased the chance of a pro-environmental vote by 2% for both Democrats and Republicans. Of the 14 industrial groups we examined only five were significant predictors of environmental voting in the full model: CCCM, Agriculture, Ideological Groups, Labor Unions and Health. Across all parties in Model 1, we see that of those 14 industrial sectors that were significantly predictive of environmental voting, donations from CCCM and agriculture were associated with decreased odds in voting pro-environment and the others associated with increased odds.

In addition to showing the relationship between PAC donations and environmental voting in Congress, we also provide insights into the demographics of representatives that are related to pro-environmental voting. The educational attainment of policy-makers was consistently significant across parties, those holding higher educational degrees being more likely to vote for pro-environmental legislation than those with lower educational achievement. In addition, we found racial differences in that representatives from more marginalized racial and ethnic groups were more inclined to take the pro-environmental position than non-Hispanic whites. Interestingly, the odds of Democratic women voting pro-environment were significantly greater than Democratic men, yet female Republicans showed no significant difference compared to their male counterparts. Women may be more concerned about environmental issues than men because they have different value systems (Xiao and McCright 2012). Perhaps women's value system is more encompassed by the Democratic Party and, once this is controlled for, the gender difference is no longer significant. Future work should examine the changing environmental voting of women in Congress as previous work has shown that women representatives are more likely to take the pro-environmental stance regardless of party (Ard and Mohai 2011, Newman *et al.* 2016).

Future work should also endeavor to overcome the limitations of our study. The results presented here evolved from our interest in understanding how the CCCM might have utilized donations to PACs during a period – the 1990s and 2000s – when their political activity has been most studied. However, the fact that our results were the same whether or not we used lagged donations suggests that these donations represent an ongoing relationship that is not subject to cyclic patterns. Researchers should go back to the earliest time PAC donation data are available to determine where these relationships began and how they might have come to crystalize over time. This is a particularly interesting question in light of the increased polarization in environmental voting in Congress from 1970 onward (Dunlap *et al.* 2016). While we include a measure of polarization in our models, future work should examine how the context of polarization, in both Congress and public opinion, might impact the specific motivations and consequences of lobbying. Specifically work should aim to better measure the environmental concern within a district, as well as examine other constituent characteristics like business interests represented in these areas, and the cost of electricity (Sautter and Sautter 2010). In addition, while our sensitivity analysis showed that those bills directly related to climate change and global warming were related to PAC donations in substantively the same way as the results presented here, future research should aim to systematically evaluate the contents of each bill to relate them to the specific issue positions of various industries.

The growing use of PACs by the business class to influence policymakers has been established in previous work (Duffy 2007, Waterhouse 2013) but there has been little examination of how industries that position themselves in opposition to environmental legislation have utilized PACs. The analyses we present here provide evidence that those industries that benefit most from the climate change countermovement have increasingly used PACs and donations from these industries are significantly related to congressional members voting against environmental protections. As the environmental countermovement cultivates secondary organizations to promote their interests (Barley 2010), environmental sociologists need to work to understand all the avenues through which industry might attempt to influence environmental policy.

Disclosure statement

No potential conflict of interest was reported by the authors.

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References

Ard, K. and Mohai, P., 2011. Hispanics and environmental voting in the US Congress. *Environmental Practice*, 13 (4), 302–313. doi:10.1017/S1466046611000330

Austen-Smith, D., 1993. Information and influence: lobbying for agendas and votes. *American Journal of Political Science*, 37 (3), 799. doi:10.2307/2111575

Austen-Smith, D. and Wright., J., 1992. Competitive lobbying for a legislator's vote. *Social Choice and Welfare*, 9 (3), 29–257. doi:10.1007/BF00192880

Barley, S.R., 2010. Building an institutional field to corral a government: a case to set an agenda for organization studies. *Organization Studies*, 31 (6), 777–805–5. doi:10.1177/0170840610372572

Blumenthal, S., 2008(1986). *The rise of the counter-establishment*. New York: Times Books.

Brulle, R.J., 2013. Institutionalizing delay: foundation funding and the creation of U.S. climate change counter-movement organizations. *Climatic Change*, 122 (4), 681–694. doi:10.1007/s10584-013-1018-7

Brulle, R.J., Carmichael, J., and Jenkins, J.C., 2012. Shifting public opinion on climate change: an empirical assessment of factors influencing concern over climate change in the U.S., 2002-2010. *Climatic Change*, 114 (2), 169–188. doi:10.1007/s10584-012-0403-y

Carmichael, J. and Brulle, R., 2017. Elite cues, media coverage, and public concern: an integrated path analysis of public opinion on climate change, 2001–2013. *Environmental Politics*, 26 (2), 232–252. doi:10.1080/09644016.2016.1263433

Center for Climate and Energy Solutions. 'Climate and energy action in congress' [online]. Accessed June 1, 2017. https://www.c2es.org/federal/congress

Clawson, D., Neustadtl, A., and Scott, D., 1992. *Money talks: corporate PACs and political influence*. New York: Basic Books.

Climate Hawks Vote. 2017. 'Scorecard'. [online]. Available at: http://climatehawksvote.com/.

Duffy, R., 2007. Business, elections and the environment. *In*: M.E. Kraft and S. Kamieniecki, eds. *Business and environmental policy: corporate interests in the American political system*. Cambridge, MA: MIT Pres, 61–90.

Duffy, R.J., 2012. Organized interests and environmental policy. *In*: M.E. Kraft. and S. Kamieniecki, eds. *The oxford handbook of U.S. Environmental policy*. Oxford, UK: Oxford University Press, 1–23.

Dunlap, R.E. and McCright, A.M., 2015. Challenging climate change: the denial countermovement. *In*: R. Dunlap and R. Brulle, eds. *Climate change and Society: sociological perspectives*. New York, NY: Oxford University Press, 300–333.

Dunlap, R.E., McCright, A.M., and Yarosh, J.H., 2016. The political divide on climate change: partisan polarization widens in the U.S. *Environment: Science and Policy for Sustainable Development*, 58 (5), 4–23.

Elsasser, S.W. and Dunlap, R.E., 2013. Leading voices in the denier choir: conservative columnists' dismissal of global warming and denigration of climate science. *American Behavioral Scientist*, 57 (6), 754–776. doi:10.1177/0002764212469800

Federal Election Commission (FEC), 2007. *Corporations and labor organizations* [online]. Washington, DC: Federal Election Commission. Available from: http://classic.fec.gov/pdf/colagui.pdf [Accessed 17 Aug 2017].

Groseclose, T., Levitt, S.D., and Snyder, J.M., 1999. Comparing interest group scores across time and chambers: adjusted ADA scores for the U.S. Congress. *The American Political Science Review*, 93 (1), 33–50. doi:10.2307/2585759

Hall, R.L. and Deardorff, A.V., 2006. Lobbying as legislative subsidy. *American Political Science Review*, 100 (1), 69–84. doi:10.1017/S0003055406062010

Hansen, W.L., Rocca, M.S., and Ortiz, B.L., 2015. The effects of citizens united on corporate spending in the 2012 presidential election. *The Journal of Politics*, 77 (2), 535–545. doi:10.1086/680077

Herrera, S., 2006. Bonkers about biofuels. *Nature Biotechnology*, 24 (7), 755–760. doi:10.1038/nbt0706-755

Hess, D., 2014. when green became blue: epistemic rift and the corralling of climate science. *In*: J. Go, ed. *Fields of knowledge: science, politics and publics in the neoliberal age*. Bingley, UK: Emerald.

Jacques, P.J., Dunlap, R.E., and Freeman, M., 2008. The organisation of denial: conservative think tanks and environmental scepticism. *Environmental Politics*, 17 (3), 349–385. doi:10.1080/09644010802055576

Kahane, L.H., 2016. The house vote to overturn the moratorium on offshore drilling: jobs, PACs, Ideology, and Spills. *Eastern Economic Journal*, 42, 46–62. doi:10.1057/eej.2014.36

Kalla, J.L. and Broockman, D.E., 2016. Campaign contributions facilitate access to congressional officials: a randomized field experiment. *American Journal of Political Science*, 60 (3), 545–558. doi:10.1111/ajps.2016.60.issue-3

Kraft, M. and Kamieniecki, S., 2007. Analyzing the role of business in environmental policy. *In*: M. Kraft and S. Kamieniecki, eds. *Business and environmental policy: corporate interests in the American Political System*. Cambridge, MA: MIT Press, 3–33.

Kraft, M., 2016. Environmental policy in congress. *In*: N. Vig and M. Kraft, eds. *Environmental policy*. Thousand Oaks, CA: CQ Press, 103–127.

La Raja, R., and Schaffner, B., 2014. The effects of campaign finance spending bans on electoral outcomes: evidence from the states about the potential impact of citizens united v. FEC. *Electoral Studies*, 33, 102–114. doi:10.1016/j.electstud.2013.08.002

Layzer, J., 2012. *Open for business: conservatives' opposition to environmental regulation*. Cambridge, MA: MIT Press.

League of Conservation Voters (LCV). 2017. 'Methodology'. [online]. Available at: http://scorecard.lcv.org/methodology

Leech, B., 2010. Lobbying and Influence. *In*: J. Berry and S. Maisel, eds. *The oxford handbook of American Political Parties and Interest Groups*. Oxford: Oxford University Press.

Levitt, S., 1998. Are PACs trying to influence politicians or voters? *Economics & Politics*, 10 (1), 19–35. doi:10.1111/1468-0343.00036

Lukes, S., 1974. *Power: a radical view*. New York, NY: Palgrave Macmillan.

McCright, A.M. and Dunlap, R.E., 2000. Challenging global warming as a social problem: an analysis of the conservative movement's counter-claims. *Social Problems*, 47 (4), 499–522. doi:10.2307/3097132

McCright, A.M. and Dunlap, R.E., 2003. Defeating Kyoto: the conservative movement's impact on U.S. Climate. *Social Problems*, 50 (3), 348–373. doi:10.1525/sp.2003.50.3.348

McCright, A.M., Xiao, C., and Dunlap, R.E., 2014. Political polarization on support for government spending on environmental protection in the USA, 1974 – 2012. *Social Science Research*, 48, 251–260. doi:10.1016/j.ssresearch.2014.06.008

Newman, B., *et al.*, 2016. Religion and environmental politics in the US House of representatives. *Environmental Politics*, 25 (2), 289–314. doi:10.1080/09644016.2015.1099184

Powell, E.N. and Grimmer, J., 2016. Money in exile: campaign contributions and committee access. *The Journal of Politics*, 78 (4), 974–988. doi:10.1086/686615

Roscoe, D.D. and Jenkins, S., 2005. A meta-analysis of campaign contributions' impact on roll call voting. *Social Science Quarterly*, 86 (1), 52–68. doi:10.1111/ssqu.2005.86.issue-1

Sautter, J.A. and Sautter, C.A., 2010. Price, carbon and generation profiles: how partisan differences make the future of climate change uncertain. *The Electricity Journal*, 23 (2), 71–75. doi:10.1016/j.tej.2010.02.005

Shipan, C.R. and Lowry, W.R., 2001. Environmental policy and party divergence in congress. *Political Research Quarterly*, 54 (2), 245–263. doi:10.1177/106591290105400201

Thomas, C.S., 1998. Interest group regulation across the United States: rationale, development and consequences. *Parliamentary Affairs*, 51 (4), 500–515. doi:10.1093/pa/51.4.500

Vandeweerdt, C., Kerremans, B., and Cohn, A., 2016. Climate voting in the US Congress: the power of public concern. *Environmental Politics*, 25 (2), 268–288. doi:10.1080/09644016.2016.1116651

Vig, N. and Kraft, M., 2016. *Environmental policy*. Thousand Oaks, CA: CQ Press.

Vogel, D., 1989. *Fluctuating fortunes: the political power of business in America*. New York, NY: Basic Books.

Waterhouse, B.C., 2013. *Lobbying America: the politics of business from Nixon to NAFTA*. Princeton, New Jersey: Princeton University Press.

Xiao, C. and McCright, A., 2012. A test of the biographical availability argument for gender differences in environmental behaviors. *Environment and Behavior*, 46 (2), 241–263. doi:10.1177/0013916512453991