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Elite networks for environmental philanthropy: shaping environmental agendas in the twenty-first century

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ABSTRACT

Examining all donations of one-million dollars or more to environmental and animal-related causes from 2000–10 in the U.S., this paper employs network methodologies to identify structural patterns in elite philanthropy. Employing k-plex algorithms, analysis demonstrates robust, overlapping donor-recipient ties forming meaningful subcomponents within the larger network. In addition to donor-recipient subgroups that partition along major environmental and animal-related issues, we find politically polarized subcomponents among organizations engaged in energy and climate change. Here it is argued that these observed substructures in the network reflect an intra-elite fracture that mirrors ideological differences of donors and a larger partisan polarization on these issues in the U.S. These findings substantiate a critical theory of foundations and elite philanthropy that accounts for their role in establishing, maintaining, and at times contesting forms of political hegemony favorable to their factional interests.

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Introduction

In July 2014, the Republican-led U.S. Senate Committee on Environment and Public Works released a report detailing the environmental philanthropy of a left-wing 'Billionaire's Club.' The report details how this club of liberal elites 'funnels their fortunes through private foundations to execute their personal political agenda' related to energy, resources, and broad environmental concerns (Senate Committee on Environment and Public Works 2014:iv). Contending that environmental philanthropy is unique to 'far-left' elites, the report argues that environmental giving under the Obama administration was executed surreptitiously and along ideological lines. The 'Billionaire's Club' report illustrates a deep partisan divide on energy, the environment and climate change (Dunlap, McCright, and Yarosh 2016), and the affinity of Republican politicians' ideological and policy positions with fossil fuel preferences (Brulle 2018).[1]

Elite philanthropy is not, however, bound to a single ideology. Corporate conservatives engage in aggressive philanthropic strategies as evidenced in numerous scholarly accounts and most recently seen in the twenty-year span of fossil fuel funding for climate denialism (Brulle 2014, 2018; Farrell 2016a).[2] The sociological study of corporate and elite funding of environmental issues remains an important issue for reasons relating to the autonomy of civil society and the integrity of environmental advocacy (Brulle 2000; Brulle and Craig 2005; Faber and Deborah 2003; Craig et al. 2017). This study offers a network examination of the contours of elite philanthropy for environment and animal-related organizations in the U.S. while exploring several theoretical tenets about the role of elite resources in moderating social and environmental change.

Classic works in sociology argue that in general, corporate and elite foundations often aim to temper social change by moderating issues and movements in a manner that preserve larger, hegemonic relations in the society (Fischer 1983; Himmelstein 1997; Karl and Katz 1987; Roelofs 2003). We thus begin with an assumption that contemporary environmental issues are in part defined within a milieu where elite funders actively use their vast resources to guide and direct social change in directions they consider low risk (Berman 1983; Brulle and Craig 2005; Jenkins 1989, 1998; Ostrander 1984; Roelofs 2003). Such a motivation is clear in instances where a course of social change threatens powerful economic interests, as in the case of the fossil fuel industry's persistent opposition to mitigating climate change. This assumption need not, however, imply that elite funders *only* support initiatives that reduce risks of change that might impinge on their profits or wealth (Ostrander 1984). Instead, theory and evidence suggest a nuanced range of factors that influence elite giving, but these factors culminate toward a more general conservatizing tendency on the part of foundations and elite giving (Roelofs 2003; Craig et al. 2017).

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Examining all donations of one-million dollars or more given to environmental and animal-related causes from 2000–2010 in the U.S., this paper investigates the network formed by elite donors and the organizations that receive large, agenda-shaping donations of a million dollars or more. Our approach employs a k-plex algorithm to identify similarly clustered subsets of donors and recipients in this large network. In the following section, we offer a review of the literature of foundations in shaping modern environmental and animal-related discourses and policy in the twenty-first century. We develop a set of propositions that pivot around a more general question originating from the channeling thesis concerning how elites direct resources to impact the pace of social change and channel it to more moderate or conservative outcomes.

Foundation support and opposition to environmental and animal-related causes

Corporate and family foundations play a role in shaping socio-political priorities in a society (Domhoff 2014; Roelofs 2015). In this project, we adopt the framework of power structure research (see Domhoff 2014), which highlights the manner through which formal and informal social networks operate to concentrate and institutionalize power. Domhoff's (2014) scholarship locates upper-class corporate and family foundations in the policy planning network where those foundations play an initial role in the policy planning process by funneling wealth from the corporate rich to outwardly nonpartisan, non-profit organizations that formulate and participate in public policy discourse, helping set agendas and shape public opinion. For over fifty years, Domhoff has noted that the strategic differences among major foundations remain consistent with general class interests while simultaneously operating along larger ideological fissures among the corporate rich, providing the basis for partisan distinctions in American politics. A power structure perspective thus identifies strategic, policy-oriented philanthropy that defines key partisan divides among think-tanks, taskforces, and commissions whose actions obstruct or enable policies in accordance with the general interests of their donors.

While foundation support impacts an array of issues and institutions – from healthcare services to the arts – in this research we look specifically at how foundations interact with environmental and animal causes. For over a century, elites have channeled large sums of money through foundations to both support and oppose environmental causes (Brulle 2000; Dowie 1995, 2001; Faber and Deborah 2003; Gonzalez 2005; Gottlieb 1993; Taylor 2016). This poses a quandary for theorizing the impact of elite financial support for environmental advocacy. Generally, social theory points to the conservatizing impact of foundation giving on social movements (Berman 1983; Jenkins 1998; Roelofs 2003): historical research suggests that big foundations, over time, have contributed to a more cautious and less contentious environmental movement (Brulle 2000; Dowie 1995; Dreiling and Wolf 2001; Gottlieb 1993). This broad perspective supports two strands of theory regarding foundations and social movements, one critical of philanthropic aims and one somewhat sympathetic. In this section, we focus mainly on describing the critical perspective of philanthropy and provide a short description of the sympathetic perspective.

The more critical channeling thesis, developed by Jenkins and colleagues (Jenkins and Eckert 1986; Jenkins 1998; Jenkins and Halcli 1999) argues that elite foundations channel resources to movement organizations and nonprofits in ways that encourage professionalization, centralization, and the moderation of tactics. It is not just a result of channeling of resources, but, as Bosso (1995) argues, the early environmental movement succeeded in part because of the role of elite patronage networks in shaping agendas and social capital. Also, within this critical perspective, we find research that shows foundations acting explicitly to de-radicalize and co-opt social movement issues and agendas (Haines 1984; McAdam 1999; Roelofs 2003).[3]

The most thorough sociological study of foundation support for the environmental movement was published in 2017. In this study, Craig et al. (2017) examined systematic data on grants to environmental groups, 1961–2000, and concluded that foundation funding favors older environmental organizations, more conservative variants of environmental discourse, and groups less likely to engage in protest. Their study is consistent with case studies and smaller-n studies that show foundation support is associated with the adoption of more conservative forms of environmental advocacy (Brulle and Craig 2005; Dowie 1995; Dreiling and Wolf 2001; Roelofs 2003). As groups seek foundation support, they must appeal to institutionalized forms of advocacy and develop professionalized internal operations. These organizational developments inhibit more contentious action and focus goal-achievement toward conventional institutional channels. These conclusions support a theoretical view that regards foundation grants as reactive, often aiming to curtail significant social or political changes that might threaten elite interests. Several histories of U.S. environmentalism reach similar conclusions (Gottlieb 1993; Taylor 2016).

Research also finds that certain forms of foundation support from select sources can improve movement outcomes via added credibility, resource capacity, and improved organization (Faber and Deborah 2005; Jenkins and Perrow 1977; McCarthy 2004). McCarthy

(2004) found that activists and allies could work with selective funders and foundation staff to advance environmental justice agendas within communities and the larger environmental movement. In this work, McCarthy (2004) shows how environmental justice groups relied on smaller, progressive foundations for funding as the larger foundation network was not accessible. At the other end of the environmental movement spectrum, conservation and preservation (land, water, wildlife) causes have been the largest and most consistent beneficiaries of major foundation support. Large-scale wildlife and land conservation initiatives depend heavily on elite backing (Taylor 2016). Finally, Du (2015) reports robust findings that elite and corporate motives for environmental philanthropy can be as direct as brand management, improving value on donations, and maintaining standing within the community.

As we present in the data below, and as suggested in this literature, there are major differences between foundations; some have supported dozens of groups openly hostile to environmentalism, environmental policy, and environmental science (Mayer 2016; Leonard 2019) while many moderate and liberal-leaning foundations play a major role in supporting land trusts (domestically and internationally), wildlife preservation, water protection initiatives and a host of what Brulle (2000) refers to as reform environmental organizations. Thus, the ideological differences among elite philanthropists likely determine, in part, the kind of environmental causes they will support or oppose. Combined, research underlines significant variation among major foundations in the issues they support and the funding strategies they embrace.

Social network analysis and environmental issues

Network-based methods of analysis allow researchers to examine how subgroups emerge from a complete network, highlighting patterns of relations among social and organizational actors (Wasserman and Faust 1994). Recent research on climate-related issues has drawn extensively on network methods to examine a variety of topics including climate discourse (Broadbent et al. 2016), network position and stakeholder perspectives on climate policy (Tindall, Stoddart, and Howe 2020), and the climate change policy planning network (Brulle 2014; Farrell 2016a, 2016b; Sapinski 2016). With respect to research on elite activism and climate change, we find that these network-related studies have identified patterns of elite and foundation activities that are consistent with expectations in the wider literature on climate politics (Brulle 2014; Farrell 2020; Sapinski 2016). Scholarship by McCright and Dunlap (2010), Brulle (2014, 2018), and Farrell (2016b) focuses on the countermovement funding networks that ignited the mobilization of climate skeptics, denialists, and anti-environmental sympathies across wide swathes of the American public. Conceptualizing this process in terms of an elite mobilization (McCright and Dunlap 2010; Brulle 2014) exposed the contentious context in which fossil fuel and other conservative foundations sought to deny and delay local, national, and international policy initiatives aimed at educating the public on the risks of climate change and the need to reduce greenhouse gas (GHG) emissions.

Brulle (2014) provides an analysis of the financial and network mobilization of the 'climate change counter movement,' which was able to 'institutionalize delay' by raising obstacles to ecologically rational energy policy through the collective power of key energy corporations, their foundations, sponsored think tanks, and politicians. Farrell's (2016a, 2016b) analyses expand on Brulle's and identify 'network power' – as opposed to 'sheer financial power' – as the driver of influence on 'semantic similarity' between climate contrarian organizations and news media. Ideological polarization is further reinforced by political elites who utilize corporate-funded agendas in policy decisions (Fisher, Waggle, and Leifeld 2013). In contrast to research on the conservative corporate foundations, few studies have explored an elite rift, or the role played by liberal leaning and moderate elite foundations that advocate *for* climate policy and climate science.[4] Our research thus utilizes network methods to ascertain rifts or differences in elite foundation giving and, in particular, to explore how any observed features of the large philanthropic network may match expectations found in the literature.

In summary and based upon this review of the literature, we present four propositions about our data. Because our data-analytic tools are largely inductive, heuristic, and descriptive, formal hypothesis testing is not considered. In general, we expect to find support for the channeling thesis, that conservative, moderate, and liberal donors, direct resources toward environmental agendas and discourses. Second, we recognize the need to better specify the significant variations in elite support for environmental and animal-related causes, especially as those differences align with elite interests and ideological orientations.

In the analysis below, this paper encourages more theoretical and conceptual sensitivity to the modest heterogeneity among elites, as these differences may substantially alter the course of social and environmental movements. Results support the incorporation of power structure research into further theorization of the channeling thesis so that differences among elites are better documented and explained. Finally, the empirical results also reveal the independent role that network-structural similarities in donor-recipient

relations can play in explaining patterns in elite giving. Our four propositions are listed below:

Proposition 1: In accordance with the channeling thesis, million-dollar plus gifts to environmental and animal related organizations will flow toward more moderate organizations, that is, entities that temper rather than accelerate social change.

Proposition 2: There are large transformational donations that support liberal or progressive environmental causes in the U.S., but these remain overshadowed by the scale of donations flowing to more moderate leaning environmental and animal-related organizations. Thus, more liberal foundations will support more liberal Environment and Animal causes.

Proposition 3: Network communities or subcomponents that reflect nested patterns of donor-recipient relations will form an interorganizational milieu of similarly linked donors and advocacy organizations.

Proposition 4: There are significant differences in philanthropic activity among elite foundations related to the environment, and those differences will be reflected around contested environmental issues, especially climate change and energy.

Data and methods

Data and coding schema

This paper utilizes data from the Million Dollar List, 2000–2010 (The Center on Philanthropy 2014). Descriptions and methodological details of this list are available at the Indiana University Lilly Family School of Philanthropy (IULFSP; formerly known as The Center on Philanthropy) Million Dollar List website. The data codes the name of the donating individual, foundation, or corporation and the organization receiving the gift. Data were cleaned to assure that all unique organizations were not coded as separate entities due to different spellings. In addition, each recipient organization is coded by the two-digit National Taxonomy of Exempt Entities Core Codes (NTEE) listed in the first two columns of Table 1.

Because we are interested in the relatively understudied area of elite philanthropy as related to the environment, we conducted analyses to examine how donations to environment and animal organizations relate to all other areas of giving. Donations to groups with NTEE codes for 'Environment' and 'Animals' (C00 and D00, respectively), represent 3.84% of all million-dollar or more U.S. donations from 2000–2010. Factor analyses of amounts donated to each NTEE category produced highly correlated factor scores between C00 and D00 organizations (Table 1), a finding which is congruent with the categorical reporting scheme used by all publications generated by IULFSP wherein 'environment/animals' is reported as a single category. Based upon our analysis and the precedent set by IULFSP, we believe these two NTEE codes are best represented as a single factor, Environment and Animals (Column 4, 'Factor 2').

As a result of this factor analysis, we combined the donor and recipient data for C00 and D00 and removed data from all other NTEE categories for the analyses that follow. Within the C00 and D00 codes there is considerable variation in how elite philanthropy is directed to various causes relating to animals and the environment. Furthermore, the NTEE codes did not provide meaningful details on the different types of environment and animal-related organizations. Consequently, we coded all environmental and animal recipient organizations according to Brulle's (2000) schema, bringing a more granular picture to the array of organizations receiving major elite contributions.

With respect to donors, we code their potential ideological orientations by examining all donor contributions across all NTEE codes, specifically sorting instances when donors to environmental or animal-related organizations also contributed to distinctly liberal or distinctly conservative organizations in the W20 category 'Public, Society Benefit.' Donors giving one million dollars or more to one of six organizations (Center on Budget and Policy Priorities, Brookings Institute, NARAL, National Council of La Raza, Children's Defense Fund, ACLU) were coded as '-1' or

Table 1. Rotated factor scores for National Taxonomy of Exempt Entities (NTEE) organizational codes by amount donated.

NTEE Code		Factor1	Factor2	Factor3	Factor4	Factor5
A00	Arts, Culture, and Humanities	0.07124	0.12237	0.12302	**0.26359**	0.06756
B00	Education	**0.8897**	0.01228	0.1993	0.10233	0.08307
B40	Higher Education	0.29875	0.07432	**0.21902**	0.15458	0.11548
C00	Environment	0.03932	**0.39624**	0.06459	0.05963	0.05924
D00	Animal-Related	0.00388	**0.39501**	0.01594	0.12543	0.01566
E00	Health	**0.67525**	0.06091	0.00933	0.14438	0.2149
P00	Human Services	0.11697	0.1655	0.10372	**0.28687**	0.02588
Q00	International	**0.87466**	0.06865	0.06327	0.08898	−0.01479
Q33	Overseas	**0.9504**	0.01074	−0.01483	0.09052	0.02946
T00	Foundations	0.00769	−0.00092	−0.0011	0.00632	−0.00338
W00	Government	0.19297	0.13393	0.10686	0.12005	0.27082
W20	Public, Society Benefit	0.46006	0.18639	**0.35334**	0.13516	0.17323
X00	Religious Organizations	0.02137	0.0311	**0.26862**	0.07837	0.0202

'lean liberal.' Donors giving one million dollars or more to at least one of six conservative groups, (Heritage Foundation, State Policy Network, Americans for Prosperity, Hudson Institute, Judicial Watch, Media Research Center) were coded as '1' or 'lean conservative.' Less than 10% of donors to the environment and animal categories also donated to ideologically distinct 'Public, Society Benefit' W20 organizations. Consequently, most donor foundations that gave to organizations in the C00 and D00 categories did not have an easily discernible socio-political leaning and therefore remained coded as 0.[5] This is an important fact in itself, revealing that most large donors to environmental and animal causes are not also large contributors to the NTEE classified 'Public, Society Benefit' W20 organizations.

Identifying subgroups: k-plex analysis

In addition to summarizing patterns of elite giving, we use network methods to identify communities of similarly oriented donors within the larger network. There are several methods for detecting subgroups or communities in a network. We are interested in inductive data analytic approaches that find subgroups based on node-similarity as a feature of the data. A classic approach is to identify cliques, or maximally complete subgraphs, in which all vertices within a subgraph are connected to one another. While assumptions of total vertex connectivity in the clique approach lend to the detection of completely cohesive subgroups, this is an overly restrictive manner of group definition that limits the observation of overlap among network actors (Pattillo, Youssef, and Butenko 2012).

We utilize the k-plex method, a relaxed clique model, which draws out 'overlapping social circles' and highlights the centralization of certain network actors (Hanneman and Riddle 2005). Like other forms of clique identification, k-plex analysis is a heuristic method that allows for data reduction while rendering meaningful substructures from a larger network. Introduced by Seidman and Foster (1978) as an alternative to the more restrictive clique approach for identifying cohesive subgroups, the k-plex method has since been widely employed with variations on the k-plex algorithm applied to a variety of research areas including large-scale data mining (Wu and Pei 2007), epidemiology (Cunningham et al. 2004), and social networks (Pattillo, Youssef, and Butenko 2012). The k-plex approach identifies co-presence within a clique (not complete cohesion), with each k-plex defined by a vertex that is connected to at least *n-k* other vertices. A k-plex analysis allows for vertices to be members of a clique as long as they have ties to all but *k* other members (Hanneman and Riddle 2005). Using UCINET 6, a k-plex analysis finds maximal subgraphs, or k-plexes within the larger network. The UCINET algorithm also generates a partition and overlap matrix. The data structure of the overlap matrix summarizes a complex feature of the network, giving the number of times each pair of actors are in the same k-plex.

Based upon our project description and the materials provided, upon review by Research Compliance Services (RCS) at the University of Oregon, RCS determined that our research activities do not meet the definition of research with human subjects according to Title 45 CFR 46. That review also authorized our research to be conducted as described without oversight by RCS or the University of Oregon Institutional Review Board. The project received the IRB Protocol number: 05072021.001.

Study limitations

Due to factors of availability and completeness, giving data are limited to the years between 2000 and 2010. Though our initial dataset included donations beyond 2010, later years were not complete at the time we accessed the data. To date, the dataset does not appear complete beyond the year 2014. Because this data requires substantial cleaning, and because the historical window 2000–2010 is significant in its own right, we use only the 2000–2010 data. Moreover, while the million-dollar donation demarcation does not represent the entire landscape of giving it does highlight large-gift donors, which are likely to influence agenda setting activities. While true that a 900,000 USD gift would also be considered large and agenda shaping for most recipients, these data are not readily available. The strengths and weaknesses of the million-dollar demarcation are discussed in reports available through IULFSP.

Our analytical limitations open this research for further study: while k-plex analysis results highlight overlapping donor and recipient circles, we do not have the network data to examine the degree of person-level interconnections among members of those circles. Moreover, these data do not offer any robust method for measuring the impact of donations; findings suggest the presence of ideological cohesion in environment and animal-related giving, which warrants further study on how social movements and advocacy efforts are shaped across the spectrum of elite advocacy and philanthropy.

Analyses

Figure 1 summarizes the million-dollar-plus donations to organizations classified under Environment and Animal NTEE codes, 2000–10. During this period, over ten billion dollars ($10,147,225,462) in million-plus donations were granted to recipient organizations with these NTEE codes. Figure 1 breaks down the

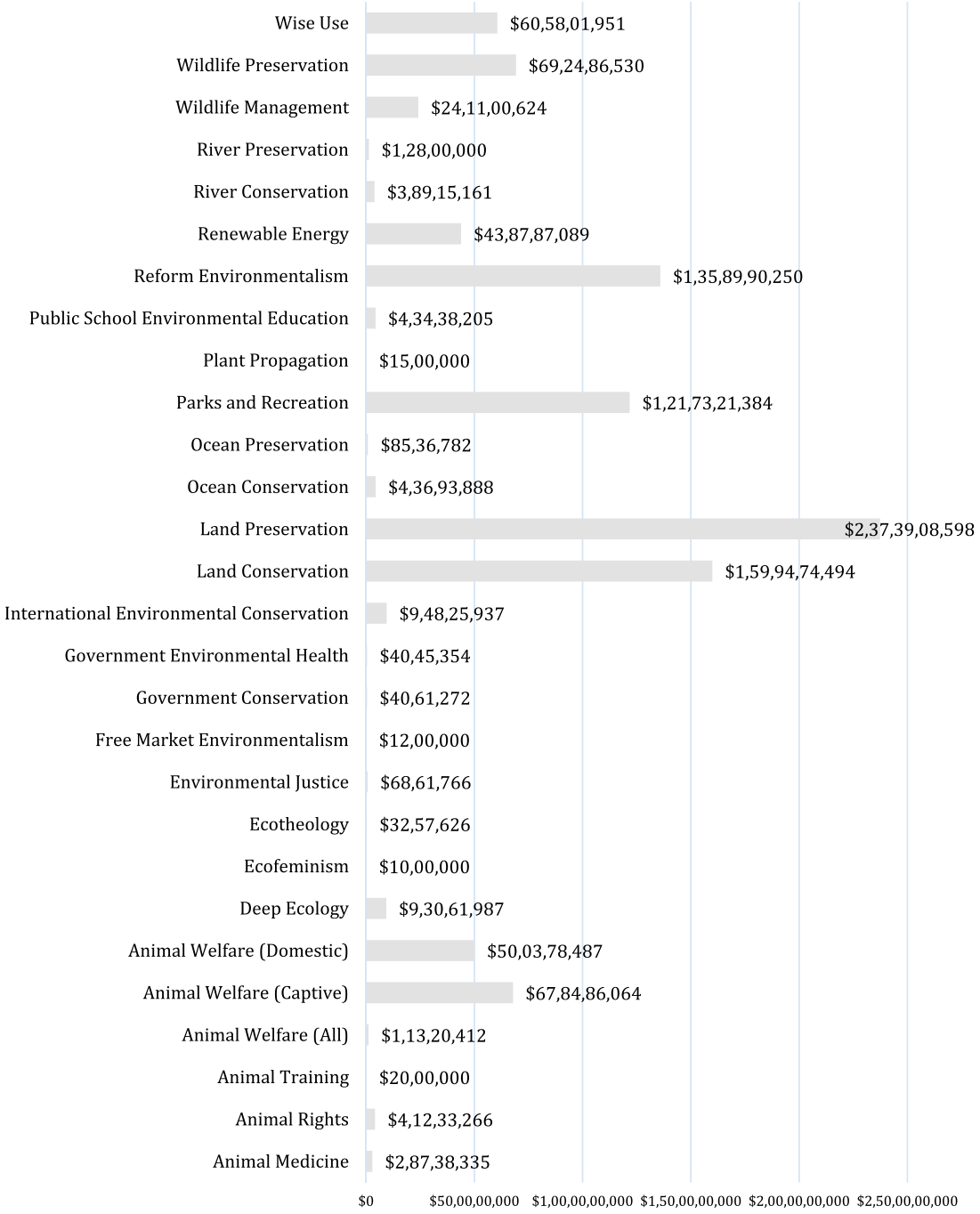

Figure 1. All donations by environment and animal sub-categories, 2000–2010.

amounts received by each organizational subcategory. Gifts directed to land and water preservation and conservation dominated the philanthropic activity in this period. Over 41% of all million-dollar plus gifts went to river, ocean and land conservation or preservation. This is not a trend unique to this time period as previous research shows that land conservation is a favored approach by elite donors (Brulle and Craig 2005; Craig et al. 2017). Some donors also maintain multi-million dollar recurring annual grants to large conservation and preservation campaigns. For example, the largest single donor to all environmental causes was the Gordon and Betty Moore Foundation, giving over 1 USD billion in million-plus donations during this time, 922,038,882 USD of which went to conservation and preservation initiatives.

Donations to conservation and preservation organizations are arguably the most highly pragmatic philanthropic activities large donors can make for the environment and animals. Very specific environmental and animal preservation benefits are obtained by buying large tracts of protected forest or wetland without complicated engagements in public policy and politics, with potentially lucrative property value benefits to the already wealthy (see Farrell 2020). In support of our Proposition 1, when we aggregate all preservation

and conservation gifts to include land, water and wildlife, we find that indeed, large donors prefer this type of environmental giving, with 54% of all dollars going to organizations whose primary activities are centered on environmental and animal preservation and conservation.

Wildlife-specific preservation and conservation gifts totaled 1,298,288,481, USD or about 13% of the total gifts. It should be noted that gifts to wildlife organizations in the NTEE codes of C00 are distinct from those given to animal-related organizations, designated in the D00 codes. All contributions to the Animal category totaled 1,262,156,564.00 USD or about 12.4% of all donations recorded in our dataset. Figure 1 breaks that value down by subcategories. It is apparent that most of these gifts went to groups like the Humane Society (under Animal-Related, domestic) and various zoological societies (under Animal-Related, captive).

Given previous research, we propose, at the most general level that million-dollar-plus gifts to environmental and animal-related organizations would tend to flow in directions that temper social change rather than accelerate it. Further, it is also proposed [Proposition 2] based on previous research that any large donations directed at social movement-oriented organizations would tend to channel movement energies toward moderate rather than radical change (Jenkins 1998; Jenkins and Eckert 1986; Craig et al. 2017; McAdam 1999; Piven and Cloward 1977). To test Proposition 2 – that more conservative donors give to more conservative wings of animal and environment organizations – we classified all environment and animal categories on a spectrum of politically liberal to politically conservative, 1 being most liberal and 5 being most conservative (see column one of Table 2), based upon our reading of the history of the environmental movement (author; Dowie 1995). We found a positive bivariate correlation of .14, significant at the $p < .001$ level.

Gifts over 1 USD million to groups that might be considered movement-, or social change-oriented, fall mostly in the categories of Reform Environmentalism, Environmental Justice, Deep Ecology, and Ecofeminism. Contributions to organizations in these subcategories totaled 1.46 USD billion (about 14% of the total) over ten years. This is a substantial sum directed to organizations many of which actively promote movement-oriented environmental causes. Such a pattern is consistent with research showing some liberal leaning foundations do indeed support *movement* causes, as explored by Faber and Deborah (2005). We consider this further below. In general, the basic descriptive observations suggest that most large-scale philanthropic donations to animal and environmental causes went to organizations that are unlikely to disrupt the status quo and are best characterized as politically moderate.

Table 2 reports the number of k-plexes found in each subcategory of environmental and animal organizations by the ideological leaning of the donor foundation. In this context, a k-plex within a specific subcategory of environmental issues indicate the presence of clique-like sub-groups, or *overlapping social circles* among the donor-recipients in that category. There are 1,411 organizations (donors or recipients) that form 2,907 donor-recipient pairs and a total of 732 k-plexes with a minimum of four members who must also be tied (as a donor or recipient) to at least two other members of the k-plex subgroup. The bulk of these k-plexes are found in the subcategories of environmental preservation and conservation, mirroring the pattern in total donations that are found in Figure 1.

Consistent with Proposition 3, the most immediate interpretation is that similar organizations align with one another. This type of homophily in inter-organizational donor-recipient subgroups is further studied by examining the number of k-plexes grouped

Table 2. K-plexes by donor ideological leaning and recipient category.

Recipient Political Characterization	Recipient Category	Liberal Donor	Conservative Donor	Moderate Donor
3	Animal Welfare	11	10	190
4	Conservation (Land, River, Ocean)	36	13	227
1	Deep Ecology	6	0	7
1	Ecofeminism	1	0	0
2	Ecotheology	0	0	3
3	Environmental Education	0	1	1
1	Environmental Justice	1	0	1
5	Free Market Environmentalism	0	0	1
3	Government Conservation	1	0	2
3	Government Environmental Health	0	0	2
3	International Conservation	6	1	6
3	Parks and Recreation	7	5	123
3	Plant Propagation	0	0	1
3	Preservation (Land, River, Ocean)	21	18	219
2	Reform Environmentalism	42	6	73
2	Renewable Energy	8	0	10
4	Wildlife Management	13	5	29
3	Wildlife Preservation	29	5	69
2	Wise Use	27	5	63
	Total	209	69	1,027

Environment and animal categories are characterized on a spectrum of politically liberal (1) to politically conservative (5).

by the ideological leaning of the donor, coded as liberal, conservative or moderate/neutral. Examining the total number of k-plexes in each ideological group reveal that by far most k-plexes (1085) involve donors that were coded as moderate or unknown.[6] Across almost every category, moderate leaning donors form clique-like subgroups among recipients. Many large donors maintain lasting relationships with organizations that their donations support, cementing their legacy and conducting long-term philanthropic goals. Year to year donations that support a conservation or preservation project are not uncommon and are the cause for many of the k-plex subgroupings found among subgroups in this network.

In Table 2 liberal leaning donors appear in 209 k-plexes while conservative leaning donors appear in 69 k-plexes. This is not surprising: elite foundations that support socially liberal causes are much more involved in environmental causes. But these liberal foundations also disproportionately participate in k-plexes within social change-oriented environmentalism (deep ecology, environmental justice), international conservation and reform environmentalism. A full fifth (20%) of all k-plex subgroups involving liberal-leaning donors are found in k-plexes where recipient organizations were in the reform environmentalism category. Recipient organizations that are found in these k-plexes benefit from the overlapping relationships that make it possible to benefit from the status of their multiple ties to major donors. Certainly, the largest mainstream reform environmental groups benefit from this propensity among select elite donors. The Environmental Defense Fund, World Wildlife Fund, and the Natural Resources Defense Council are frequent recipients found in these k-plexes, indicating their high stature among liberal-leaning foundations and their capacity to dominate fundraising networks. Yet we also find within this liberal-leaning elite subnetwork environmental groups and campaigns like the Global Campaign for Climate Action (a now-defunct progressive coalition mobilized for the 2009 Copenhagen UN climate meetings) and EarthJustice (an aggressive environmental litigation group) that pressed more progressive environmental agendas than the Big Green groups. This is an important observation and adds new perspective to existing literature. While these donations represent a smaller fraction of overall total foundation activity, we see here an active subset of elite foundations engaged in a variety of social change-oriented environmental groups, consistent with our Proposition 2 . This structural pattern supports the analyses of alternative foundations raised by Faber and Deborah (2005). Foundations supporting this kind of social change may increase the capacity of select movement organizations and their responses to political opportunities.

Ideologically inflected environmental philanthropy

Expanding on Table 2, how do differences in the donor-recipient network among ideologically moderate, liberal, and conservative donors appear in the larger structure of environmental giving? Plotting the million-dollar-plus donor-recipient network, Figure 2 reveals an analytically meaningful visualization of donors and recipients spatially distributed by their proximity to groups with whom they share k-plexes. The network plot highlights a core-periphery structure split by a bi-modal structure that reflects a polarized field of organizations that also mirror conflicting dynamics over environmental, energy, and climate politics in society. Figure 2 plots the connections formed among organizations that share k-plexes, with size of the vertices weighted by their centrality. This network plot displays all organizations that are part of at least one k-plex, (n = 1411). In the figure, we label select donors and recipients who are immersed in k-plexes. Organizations that are members of a larger number of k-plexes are more central in the network and thus are presented with a proportionately larger node size. Using UCINET 6, we plot each vertex using the coordinates from a multidimensional scaling of the k-plex co-membership matrix. This methodology is a widely employed practice for spatially representing similarities and differences among organizations because similarly situated nodes in the field of network relations are plotted closer in proximity while those with greater differences are plotted further apart. This method is also intended to help identify sub-communities within the network by presenting large-n, complex relationships in a meaningful visualization. The figure shows how k-plex affiliations signify contrasting substructures within the large network. Minor adjustments to the plot were made to improve visibility.

At the center of the network, colored periwinkle and clustered on the right side of the plot are the largest donor and recipient organizations. All liberal-leaning and most moderate foundations are found in this large network component. Unique among these organizations is The Nature Conservancy. By multiple measures, it is the most central organization in the network. There are nearly two-hundred small environmental organizations and several other large donors who share k-plex associations through the Nature Conservancy, and these are visible as a tight cluster of small nodes in the center of the network. Their proximity indicates a close partnership between donors and recipients within a cross-section of environmental and animal-related organizations. As both the largest donor and the largest recipient of million-

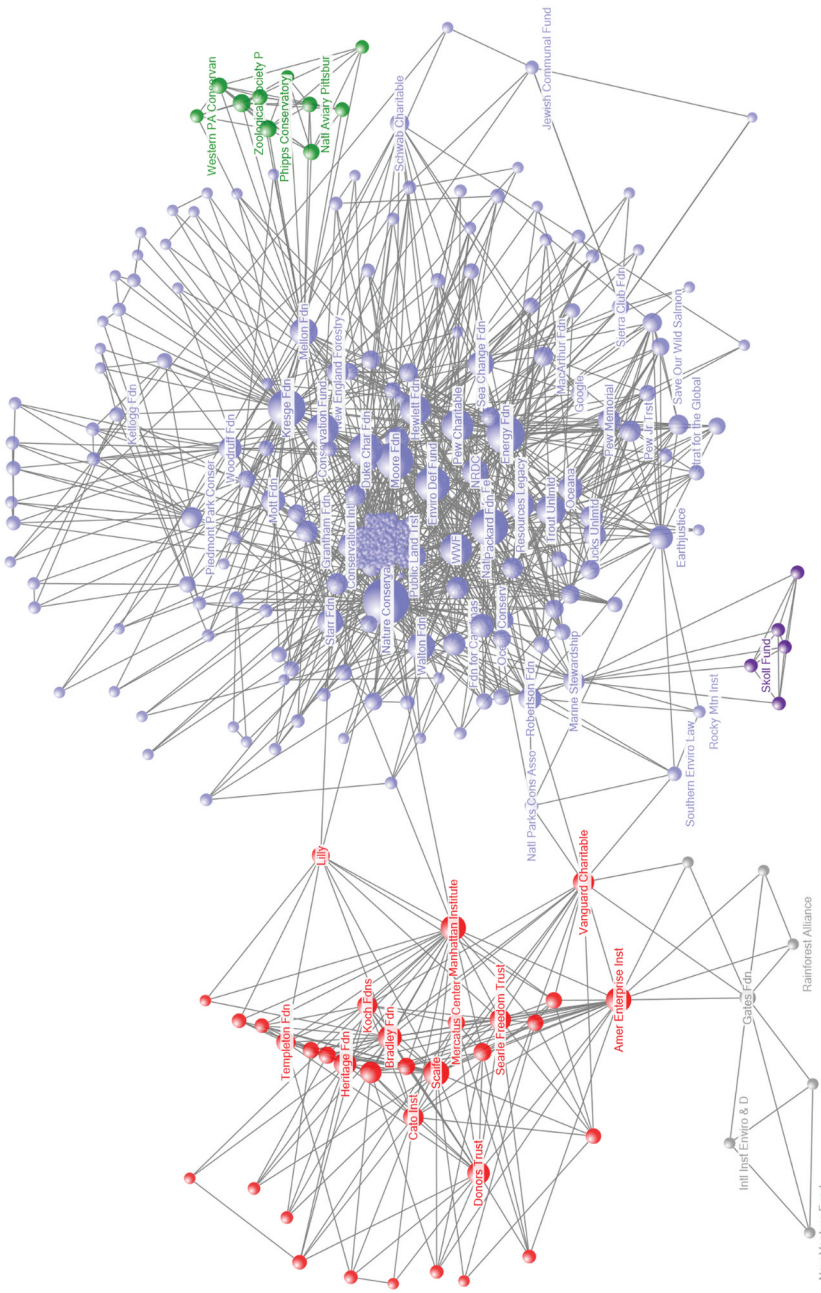

Figure 2. Donor-recipient k-plex network plotted with coordinates from multidimensional scaling and nodes sized by centrality of node.

dollar-plus giving, The Nature Conservancy is networked into 186 k-plexes, having multiple overlapping donor-recipient ties to many other, mostly smaller organizations. This is in part a function of how the organization was founded and developed. Founded in 1951, the Conservancy has pursued conservation projects worldwide, partnering with other international organizations, governments, indigenous communities, and corporations. Since its formation, it has established a network of programs and auxiliary organizations aimed at projects such as debt-for-nature swaps, ecosystem preservation, forestland protection, and policy formation. In recent years, the Conservancy has started working on climate change mitigation. Exemplifying the moderating effect posited by the channeling thesis (Jenkins 1998), The Nature Conservancy's approach to climate change is based upon the support of a Republican-drawn statute to build a market-based carbon pricing system (i.e. cap and trade regulation).

The other largest recipient organizations, such as the World Wildlife Fund, the Environmental Defense Fund, and Conservation International also cluster close to one another. They share donors and receive repeated contributions from the largest donor foundations, also plotted centrally and in proximity to these groups. At the center of the figure, we see these large nodes representing the large donors, like the Moore, Packard, and Duke foundations. As noted, moderate foundations play a central role in funding conservation and preservation efforts within American environmentalism. Among the largest of these foundations, for example, is the Gordon and Betty Moore Foundation, a Silicon Valley newcomer to the universe of elite philanthropy. Created in 2000 with an endowment over 5 USD billion, the foundation quickly became one of the most important funders for environmental causes in the U.S. It is now responsible for significant and sustained funding of popular environmental groups like the World Wildlife Fund and Conservation International. In the 10-year window we observed, the Moore Foundation donated 1,017,296,052 USD in million-dollar-plus donations. Their mission statement explicitly aims to support scientific discovery and environmental conservation. Gordon Moore established the foundation with principles largely consistent with his values as a scientist-entrepreneur, co-founder of Intel, and a long-time resident of the San Francisco Bay Area.

Four of the five most k-plex connected foundations are moderate leaning, though one leans liberal. These are also the most consistently pro environmental foundations in the United States. Their collective contributions over ten years approach three billion dollars. These elite foundations are also notable for their involvement in promoting climate science, renewable energy and climate change advocacy and education. Among them, the Packard Foundation is the only decidedly liberal-leaning foundation. The Packard Foundation aligns closely with other liberal leaning donors, such as the Hewlett and Sea Change foundations who contribute to similar organizations, forming multiple overlapping organizational networks devoted to addressing the climate crisis. These patterns of association are evident in their recurring involvement across dozens of shared k-plexes. Exploring the Packard Foundation further, we see that it forms similar donor-recipient bonds with several large environmental organizations and other elite foundations. Here is a small sample of just five k-plexes that include the foundation:

(1) Packard Fdn; Moore Fdn; Ocean Conservancy; World Wildlife Fund
(2) Packard Fdn; Google; Energy Fdn; World Wildlife Fund
(3) Packard Fdn; Grantham Fdn; Fdn ft Prot ot Enviro; Enviro Defense Fund; World Wildlife Fund;
(4) Packard Fdn; MacArthur Fdn; Energy Fdn; World Resources Institute
(5) Packard Fdn; Pew Jr Char Trust; Energy Fdn; National Environmental Trust

It is apparent from both Figure 2 and the list above that the philanthropic activity of the Packard Foundation overlaps with other major moderate and liberal-leaning foundations on a range of environmental causes. On climate and renewable energy issues, the foundation leads funding efforts. In the section below, their overlap with the Hewlett Foundation, the Grantham Foundation, the Energy Foundation and other groups active in promoting climate advocacy will be explored further.

The k-plex affiliations of major donors and recipients clearly demonstrate that they cannot be cast as a unified community – there is evidence of some stark division among elite donors on these matters, indicated by a second, smaller component in Figure 2 colored red. The smaller cluster of donors and recipients on the left side of the figure corresponds to a much more conservative-leaning group of foundations and recipient organizations. Among the top fifteen-ranked major donors in terms of k-plexes we find three conservative foundations: the Scaife affiliated foundations, the Bradley Foundation, and Donors Trust. Since the mid-1960s, the Scaife affiliated foundations – products of the Mellon industrial empires in oil, coal, aluminum, and media – have been key forces in funding conservative movement goals. According to Mayer (2016), Scaife, in an unpublished memoir, "describes how he and a handful of other influential conservatives … faced an existential threat from progressivism [and] began meeting … to plot against the

country's liberal drift … " (p. 74). Both the Bradley Foundation and Donors Trust are closely connected with the Koch affiliated foundations. Allen Bradley and Fred Koch (founder of Koch Industries) were both co-founders of the John Birch Society in 1958. Since then, their industrial empires, foundations, and children have made the respective foundations an integral part of conservative think tanks, political campaigns, and opinion shaping initiatives in the United States (Mayer 2016).

Each of these donors are major funders for a larger climate denial network, as identified by McCright and Dunlap (2010) and Brulle (2014, 2018). These conservative corporate foundations share multiple k-plexes over several years and repeatedly make major donations to organizations associated with climate denialism. This is one of the reasons that some of the recipient organizations that may have environment-friendly names are instead regarded as anti-environmental organizations (see Deal, Carl, and Greenpeace USA 2002). A group like the Environmental Literacy Council or the Center for the Study of CO2 may seem innocuous, but both of these organizations receive large sums of money from the conservative foundations described above and actively participate in a larger cluster of organizations that question the value of environmental regulations or raise doubts about climate science findings concerning carbon emissions and climate change.

We also find foundations that serve as network bridges in Figure 2. Several large and somewhat moderate foundations share k-plexes with more conservative foundations and consequently link the main components (red and periwinkle) in the network. Some of these are notable and occur when two or more donors commonly contribute to another two or more organizations. This results in them sharing a k-plex. For example, multiple donors across the political spectrum gave to the Indianapolis Zoo. Because of region-specific contributions to an animal-related organization, the Lilly Endowment, which also shares several k-plexes with more conservative foundations as well as a k-plex with the Nature Conservancy and the Starr Foundation (a large moderate-conservative donor founded by an insurance mogul), we find a bridge between the two major network components. In this way, animal-related organizations may be more tempered forms of regionally focused charity that link disparate ideological donors. We observe a similar dynamic with think tanks like the Manhattan Institute or the American Enterprise Institute. Moderate-conservative foundations like the Gates Foundation share a k-plex with the AEI and Vanguard Charitable, connecting the small gray subcomponent on the lower left of Figure 2 to the larger red component above it. The Gates and Buffet foundations did not make many large donations to environment or animal causes, relative to the size of their foundations. They do, however, share multiple k-plex connections, evident in the figure.

On the right-side of the figure, we note a small subcomponent, colored in green, that is formed by a group of donors and animal and environment recipient organizations exclusive to Pennsylvania. Donors include the Mellon Foundation, Heinz Endowments, McCune Foundation, Eden Hall Foundation, and the Colcom Foundation. Collectively, this set of donors and recipients engage in the support of a range of region-specific environmental and animal causes, from rivers to zoos. Other region- and issue-specific k-plex connections are visible in the network, though none as pronounced as this one. The dark purple cluster in the lower center of the figure is comprised of several organizations supported by the Skoll Foundation (started by E-Bay co-founder Jeff Skoll) centered around Amazon protection, marine stewardship, and climate protection.

Consistent with the channeling thesis we see that the most connected foundations are devoted to environmental conservation and preservation causes, e.g. The Nature Conservancy or the Moore Foundation. Among them are a few foundations that are also heavily committed to renewable energy development and climate science advocacy. This latter group advances a form of climate capitalism, an approach that attempts to mitigate the carbon crisis through capitalist market innovations in energy technologies and environmental policy initiatives, both nationally and internationally (Sapinski 2016). Also among these highly connected donors is a subset that appear in overlapping k-plexes with the conservative think tanks that are vocal climate skeptics or denialists. Consistent with expectations stated in Proposition 4, Figure 2 reveals that the latter donors and recipients form a distinct network subset, suggesting a profound class-factional divide among American elite on energy and the environment, one that warrants further study.

Intra-elite conflict on climate change and energy

Farrell (2016a, 2016b) shows that over a 20-year period conservative foundations and fossil fuel economic interests sponsored climate denialism through numerous opinion-shaping channels. These efforts had a discernible impact on media framing and public opinion. As explained by Farrell (2016a), climate denial organizations that receive corporate and foundation money are more central in the network of the climate countermovement and are more effective in promoting their messages via a larger media echo chamber (see also McCright and Dunlap 2010; Brulle 2014). Based on this extensive body of work, we know that societal polarization on climate change is shaped by

the mobilization of climate contrarian and climate minimalizing campaigns, largely funded by corporate and specifically fossil fuel interests. These industries stand to gain by delaying or diluting climate change mitigation policies. Farrell (2016a, 97) acknowledges that 'what is less understood are the complex organizational and financial systems that affect the creation of ideological polarization in the first place.' Cory, Lerner, and Osgood (2020) solve some of this mystery by tracing the role of carbon-emitting industries up and down the economic supply chain to understand the broad, inter-industry opposition to decarbonizing the U.S. economy. Their examination of lobbying activity more generally is an important recent addition to understanding inter-elite differences on climate change.

Figure 3 plots the contributions from conservative donors to various organizations. These direct contributions form the basis for the shared k-plexes that are seen in the smaller partition on the left side of Figure 2. Donors Trust is widely acknowledged as a major conduit for right-wing dark money (Mayer 2016). Donors Trust is also recognized as a major recipient of fossil fuel money, notably major donations from the foundations of David and Charles Koch, Scaife affiliated foundations, Exxon-Mobil, and the Bradley Foundation (Mayer 2016). The organization appears as an important conduit for channeling resources toward groups like Responsible Resources, the Heartland Institute, and the Center for Study of CO2 and Global Change. Consistent with expectations from Farrell (2016a) and Brulle (2014), we also find that Koch affiliated, Exxon Mobil, Scaife, Bradley, and Searle foundations are integral to the sponsorship of organizations also involved in climate denialism or skepticism.

Figure 4 is presented as a contrast to the network of climate denialism and reflects the important role played by liberal-leaning and moderate elites in promoting renewable energy and education about climate science. Figure 4 portrays the donor-recipient ties among some of the more active foundations seeking to mitigate greenhouse gas emissions and support a renewable energy future. Since the early 2000s, elite foundations that already supported environmental organizations began to directly fund efforts to amplify the scientific consensus on climate change and promote a business-friendly policy to mitigate climate change and advance renewable energy. This stands in contrast to the conservative foundation support for climate denialist think tanks, denialist book publishing, and other media efforts to promote climate science skepticism (Jacques Peter, Dunlap, and Freeman 2008; Dunlap and Jacques 2013). On the side of climate science and renewable energy we see in Figure 4 a group of donors and foundations that, by 2008, became heavily involved in advocacy for climate change mitigation and science and technology education initiatives. The Energy Foundation is plotted at the

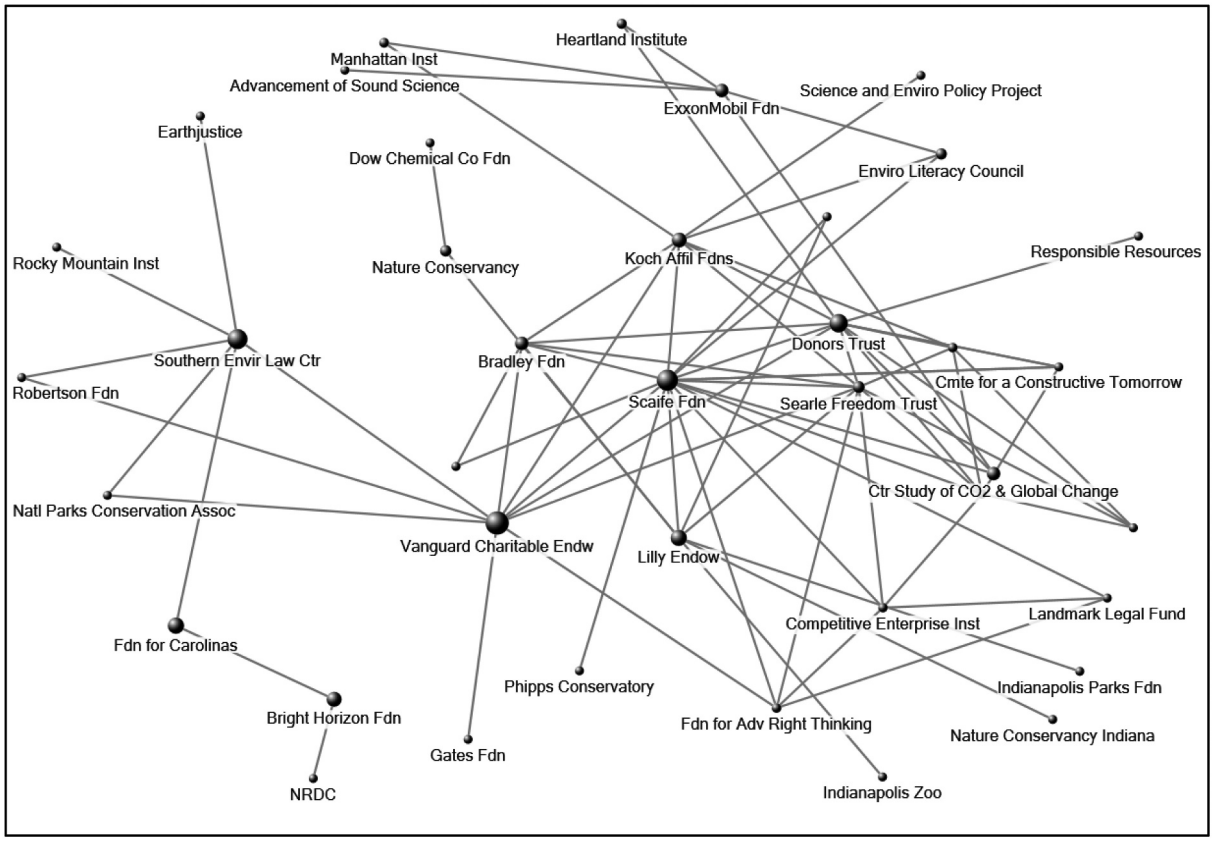

Figure 3. Overlapping donor-recipient network involving conservative elite foundations.

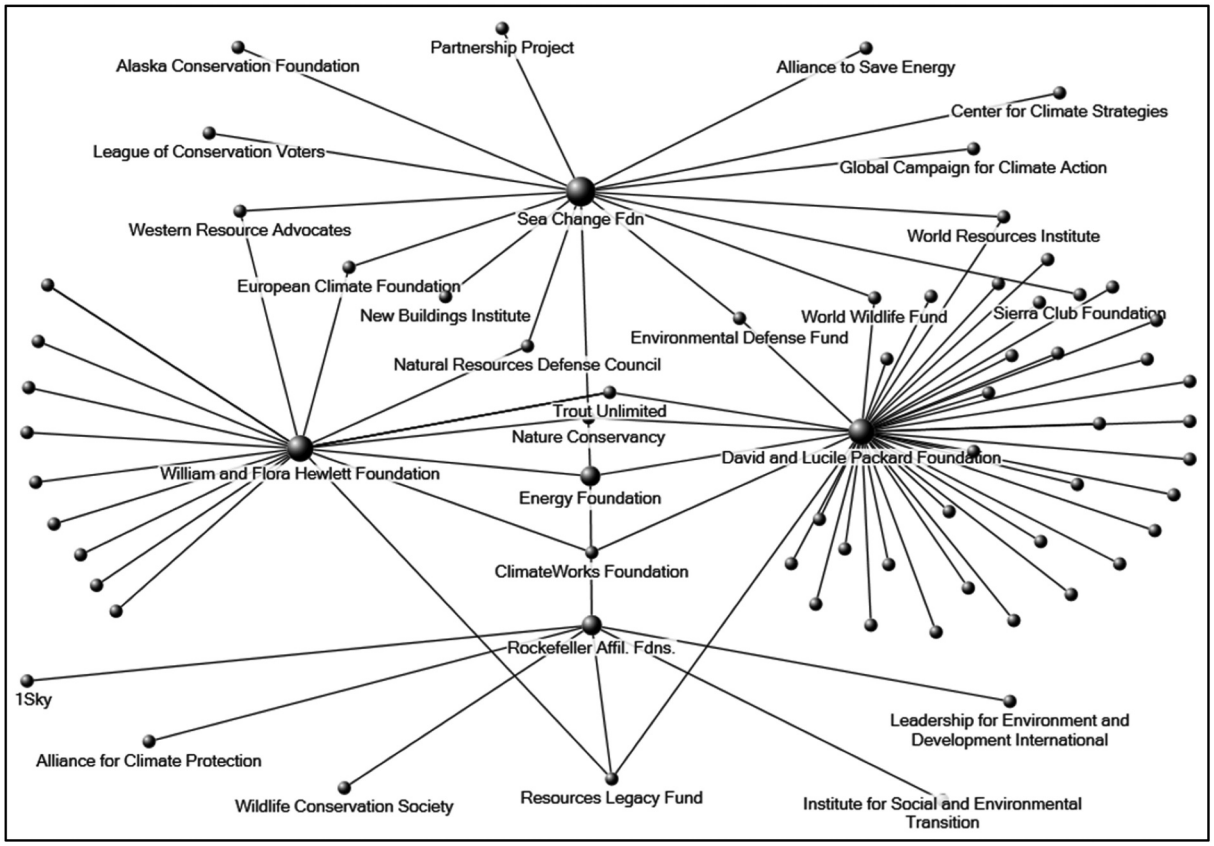

Figure 4. Overlapping donor-recipient network involving Hewlett, Packard, energy and sea change foundations.

center of the network, reflecting its status as a collaborative funding group founded in 1991 to support climate change advocacy. The Energy Foundation is supported by a wide-range of moderate and liberal-leaning corporate and family foundations, most of which have a clear neoliberal bent. Quoting from their priorities, the foundation works to accelerate 'the transition to a clean energy economy by supporting policy solutions that create robust, competitive markets and the benefits they bring' (Energy Foundation 2019). According to IRS data, the Foundation distributed nearly 100 USD million in grants in 2010. One of the largest grantees was Sea Change Foundation (also visible in Figure 4), making both foundations targets of conservative charges of a liberal-elite conspiracy, as mentioned in our introduction.

Sustained by grants from the Packard, Heinz, Hewlett, MacArthur, Merck and other family foundations, the Energy Foundation is arguably at the center of liberal-leaning and moderate elite efforts to inform American public policy and public opinion on climate science and renewable energy solutions, albeit with an emphasis on market and technological solutions. Each of these foundations were also instrumental in founding ClimateWorks and other climate science and clean energy policy campaigns. Consider the example of ClimateWorks, founded in 2008 with large seed investments by the William and Flora Hewlett Foundation, The David and Lucile Packard Foundation, and the Energy Foundation. ClimateWorks views itself as a catalyst for collective impact and sustains several programs designed to advance research and communication about climate science in order to expand public and private investments, philanthropy, and policy-making that address emissions and the effects of climate change. Between 2008–2014, the foundation awarded 868 grants totaling nearly 800 USD million to 227 recipients (ClimateWorks 2019). There is no doubt that these campaigns also entail the creation of opportunities to invest in new energy, electrical grid, and smart technologies for decarbonizing the transportation and electricity production sectors.

Combined, the collaboration among the foundations depicted in Figure 4 and several others have resulted in a transnational elite initiative to combat climate change through public, private, citizen, and philanthropic vehicles. To illustrate the kind of commitment demonstrated behind these ties and the substantive goals associated with them, we reference the recent climate finance strategy of the Hewlett Foundation. As noted in their annual report, their longer term goals aim to 'mobilize at least 1 USD trillion annually to support interventions that further the goals of the Paris Agreement' by 2050 (Waite 2018, 1). At the heart of this strategy is a vision of mobilizing private capital investments, working with sympathetic governments, to reduce market risk for investments in

renewable energy infrastructure via the Climate Finance Partnership (CFP). If successful, their proposed instrument can be used on a much greater scale – using billions instead of millions in government investment to catalyze hundreds of billions of private capital. This optimistic set of goals rests on a quintessentially neoliberal strategy aimed at leveraging private and public assets to reduce risks for capital markets as a macro incentive for investments in low-carbon long-term infrastructure developments. The Hewlett Foundation is not alone in pursuit of this initiative. Of note, the Hewlett and Grantham foundations were founding partners to the CFP and both of these foundations overlap in charitable activity in our networks. Though the Grantham Foundation was significantly smaller during the 2000–10 window it was nested in 18 k-plexes, with high overlaps with the top moderate and liberal-leaning foundations, especially the Hewlett and Packard foundations. These foundation networks detail elite foundation activities that shape global climate and energy politics. Their application of neoliberal market strategies to bend the carbon curve toward the objectives of the Paris Accord reflect a project of climate capitalism (Sapinski 2016).

Discussion and conclusion

The network of elite donor support for environmental and animal causes reveals tightly grouped organizational environments wherein the largest foundations reinforce the conservationist and preservationist wings of environmentalism in the U.S., and some smaller, select foundations contribute to an array of environmental and animal causes. Employing a k-plex algorithm to study the complex field of donor-recipient relationships also reveals a structural division among elites over energy and environmental causes, consistent with prior research and proposed at the outset of this paper. Consequently, the results presented here provide support for theoretical frameworks that locate elite philanthropy, including differences and similarities within elite subgroups, in a wider context of competing hegemonic projects spanning ideologically distinct elite factions.

First, we see evidence that supports the channeling thesis (Jenkins 1998), affirming that elite giving does not so much coopt movements but rather funnels resources toward causes that moderate social change, impact the content of environment and animal-related discourses, and professionalize organizational structures and tactics. Large-scale elite gifts overwhelmingly favor forms of environment and animal giving that are socially and politically moderate, or even conservative. This is evident in the sheer volume of funding directed toward conservation and preservation causes. We witness elite foundation giving that, in aggregate, both temper and channel resources and agendas for social change. This moderating influence of elite philanthropy is also found in the prevalence of resources devoted to domestic and captive animal causes, in contrast to the relatively small share of philanthropic donations devoted to animal rights. These findings are consistent with Brulle and Craig (2005) who reported that 90% of foundation gifts went to moderate and reformist discourses of environmentalism. Consistent with previous research, a relatively small fraction of donor activity is devoted to social change oriented environmental and animal rights advocacy. Beyond describing the patterns of elite giving, our findings also reveal the interconnected social relations behind elite philanthropy for the environment, exposing both rifts and enduring donor-recipient communities.

Our results show that a structural similarity or inter-organizational isomorphism among donors and recipients within the network may drive patterns of issue advocacy. By binding donor and recipient organizations into overlapping social circles, recipient organizations in particular may have their identity and agendas impacted as much by the million-dollar gifts as by the impacts of resource dependencies that span those social cliques. Shared social circles and their structural effects need further research to ascertain impacts on the agendas of movement and advocacy organizations. Donor-recipient relationships matter and their inter-organizational intertwinement are a story unto themselves.

Second, and related, autonomous environmental movement organizations are vital to civil society, consistent with social movement and the political theory of democracy (Brulle 2000; Brulle and Craig 2005; Dreiling and Wolf 2001; Dreiling, Lougee, and Nakamura 2017; Gonzalez 2005; Craig et al. 2017). The structural dilemma found in the patronage of foundations by environmental groups is that they obtain resources for shorter-term efficacy while simultaneously embedding themselves in resource dependent relations that elevate certain discourses, organizational types, and forms of political practice that might restrict the efficacy of the movement in the long term. The impacts are not insignificant in shaping the behavior of environmental groups. For example, Dreiling and Wolf (2001) observed that movement-oriented, volunteer-heavy organizations challenged the free trade agreements more aggressively and consistently than environmental groups with greater reliance on foundation patronage and board ties to large corporate donors. Thus, the paradox of relying on elite philanthropy to advance environmental agendas is that we see on the one hand greater financial support to grow and found new organizations, strengthen forms of political action that rely on litigation and lobbying, or raise public awareness of issues. On the other hand, there are costs to civil

society of more professionalized, oligarchic organizations geared towards a praxis of institutional politics versus membership and volunteer mobilization.

Third, the data and analysis expose ideological and strategic differences in major foundation activities for environment and animal causes. Specifically, the network analyses of k-plex associations revealed subcomponents that are divided across clusters of moderate and liberal-leaning donors and affiliated recipient organizations and conservative donors and affiliated recipient organizations. Evidence of significant intra-elite differences using this inductive data analytic approach is striking. But, consistent with numerous other studies, the pronounced differences in philanthropic activities around energy and climate provide a window into wider elite schisms within the U.S. power structure (See Domhoff 2014). Substantively, these polarized subcomponents reveal a chasm between the donor activity of conservative versus moderate and liberal-leaning elite foundations on matters relating to energy and climate change. These observations suggest that ideological divisions among elite can result in significant differences in elite philanthropic activity, and these are more than just mirror reflections of deep societal differences. Instead, as an important qualification to the channeling thesis, we see elite factions mobilizing competing agendas through their foundation activity, agendas that in turn shape societal conflicts, politics, and discourses about energy, the environment, and democracy.

Notes

1. The report was inspired by the Koch Industries'-sponsored Environmental Policy Alliance and its project *Big Green Radicals*. From 2006–2015, the Environmental Policy Alliance and related anti-environmental front groups developed materials to add skepticism to environmental claims, climate science and renewable energy policy initiatives.
2. The argument that 'both sides do it' is also flawed because in this case, the promotion of conservative climate denialism runs counter to scientific consensus and is blatantly suborned to very specific fossil fuel interests. Liberal foundations promoting climate science education and renewable energy may have strategic, and even economic interests behind their funding activities, as we discuss below, but they do so without a betrayal of the scientific fundamentals about the production/consumption of fossil fuels, carbon emissions and climate change.
3. Haines (1984) refers to varieties of a 'radical flank effect' where moderate organizations may gain access to third party resources because of concerns raised by militancy among a radical flank. More generally, the argument suggests that elites will favor moderates and channel resources in their direction when more radical activists or organizations are present.
4. See Sapinski (2016) for an analysis of climate capitalist efforts to make the reduction of GHG emissions profitable by shaping the policy agenda, promoting renewable energy, and otherwise expanding political support for restructuring the economy within a neoliberal capitalist framework.
5. It is important to consider that many foundations may have contributed to ideological 'public benefit' organizations but did so with sums less than $1 million per year and are therefore excluded from our data.
6. A k-plex can, and often does have more than one donor. Hence, the totals in Table 2 do not sum to the total number of k-plexes but rather the number of times donors, by ideology, appear in a k-plex.

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No potential conflict of interest was reported by the author(s).

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