LETTER

Obstructing action: foundation funding and US climate change counter-movement organizations

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In a 2016 congressional hearing on the climate crisis, Senator Sheldon Whitehouse (D-RI) held up a book entitled *Why Scientists Disagree About Climate Change* and asked: "Who funded this phony climate science denial textbook that the Heartland Institute published and mailed to thousands of schoolteachers around the country? ... We know it costs a lot of money to print [but] we don't know who paid for it!" (SDC 2019). The publisher of the "textbook" was the Heartland Institute, a central organization in the Climate Change Counter-Movement (CCCM). The CCCM is a complex network of organizations that functions to obstruct climate action (Brulle 2020). Senator Whitehouse's question points to the extensive network of anonymous funders that supports the CCCM. This anonymous funding allows unaccountable, unknown entities to promote climate misinformation and obstruct climate action. Several analyses have shown that this deliberate and organized effort to misdirect and distort public discussion of climate change drives widespread misunderstanding of climate science and legislative gridlock on the issue (NRC 2011, p. 35).

For these ongoing efforts to continue, it is imperative that CCCM organizations mobilize sufficient financial resources (Jenkins 1983). Thus, an examination of the funding sources of the CCCM can provide a deeper understanding of the institutional dimensions of this effort. The effort to understand the financial support of the CCCM has been the topic of scholarly concern (Brulle 2014; Farrell 2015, 2016, 2019). The most extensive analysis was that of Brulle (2014). In his analysis, he found that over the time period 2003 to 2010, the majority of identifiable CCCM funding came from several conservative philanthropies and, increasingly, through Donors Trust, a donor-directed philanthropy designed to preserve funders' anonymity. In this research, we revisit and update Brulle's initial analysis. We double the timespan of the prior study, analyzing data from 2003 to 2018, add an analysis of the amount of unidentifiable funds supporting the CCCM, and considerably sharpen prior estimates by approximating the proportion of this funding that directly supports work on climate change.

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1 Methods

This research involved three distinct steps. First, we compiled a list of organizations identified as belonging to the CCCM. A preliminary list of 508 potential CCCM organizations was assembled from the CCCM censuses found in Brulle (2014), Farrell (2016), and McKie (2018), denial organizations listed by DeSmog and members of both the State Policy Network and the Atlas Network in the USA. These 508 organizations were then reviewed and coded as either being part of the CCCM or not. An extensive series of coding procedures were utilized to make this determination as described in the Supplemental Materials. To better focus the analysis, we included only 501(c)(3) and 501(c)(4) members of the CCCM. This procedure allowed for collection of income data from these organizations' IRS tax returns. The resulting sample contains 128 organizations.

A dataset was compiled containing all publicly available private grants to the 128 CCCM organizations utilizing three sources: Foundation Directory Online (FDO), IRS 990 forms filed by grant making institutions and publicly reported grantee lists published on the websites of grant making institutions. Analysis of these grants was then conducted using Python.[1] Our dataset contains 49,354 grants from 3787 foundations to 116 out of the 128 eligible CCCM members, totaling $2.65 billion, over the period 2003 to 2018. Total contributions including untracked donations to the CCCM during this time totaled $9.77 billion. It is important to note that only a fraction of the contributions reported here supports work directly related to climate change. We cannot assert that any grant supports activities directly related to climate change unless specifically stated on the grant records, but most of such records include no meaningful information about the purpose of the grant. We therefore report total grants and contributions on the understanding that they show only broad financial support for CCCM organizations, some of which goes towards climate-related endeavors. We use "(total) contributions" to refer to all contributions received by CCCM organizations as reported by the IRS and "(foundation) grants" to refer to the donations captured in our dataset.

Since most CCCM organizations work in multiple areas, the third step involved estimating the proportion of the organization's efforts involved climate or energy issues. We web-scraped every available website for the 128 organizations to construct a comprehensive corpus of over 615,000 documents produced by the CCCM. We then estimated the number of organizational documents that were related to climate change or energy topics by creating a topic model using LDA[2] on a 20,000 document sample of the dataset (Blei et al. 2003). We then fit this model to the remaining corpus to determine the fraction of documents from each organization and each year which were focused on climate change or energy. For each organization and each year, we treat the proportion of documents for which climate-related topics are the most prevalent as the fraction of total organizational output related to climate change. We then multiply this fraction by each organization's yearly expenditures to obtain an estimate of the spending on climate obstruction within the CCCM. The Supplemental Information provides a full description of our methodology and discussion of its limitations.

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[1] The final dataset contained several isolated gaps in donations and organizational expenses. In such cases, the missing quantities were linearly interpolated from the preceding and following years.

[2] We used the implementation of LDA in the Structural Topic Model (STM) package for R (Roberts et al. 2019). STM extends LDA by including document-level covariates that can affect the prevalence and content of topics. However, due to the size of the corpus and constraints on time and computing power, we did not include any document covariates in the estimation, in which case STM becomes identical to LDA. We have provided an explanation of LDA in the Supplemental Material.

2 Findings

A small group of foundations constitute the core of financial support for the CCCM. Figure 1 shows the top grant makers and recipients in the CCCM by total grants given or received. The top 1% of grant makers account for 67% of grants, and the top 10% of grant makers account for 94% of grants. Similarly, seven CCCM organizations (5%) receive 50% of all grants. The top three grant recipients—the American Enterprise Institute, the Heritage Foundation, and the Hoover Institution—have remained unchanged since Brulle's (2014) analysis, with some shifts in the order of smaller grant recipients. The top grant makers have changed slightly: the network remains dominated by the Donors Trust and Donors Capital Fund (DCF) and the Scaife, Bradley, and Koch family foundations, with the Devos family foundations now among the top ten as well. Donors Trust and DCF alone account for 13.7% of grants. These organizations are Donor Advised Funds (DAF), with a central role in coordinating donations to CCCM and conservative organizations while keeping their core donors anonymous.

Alongside donations through DAFs, 74% of all contributions to CCCM organizations over the sample period come from completely unidentified sources. Figure 2 shows a sociogram of the top 1% of grant makers and recipients in the network by total grants given/received, where each line represents all grants between two actors over the sample period, with contribution
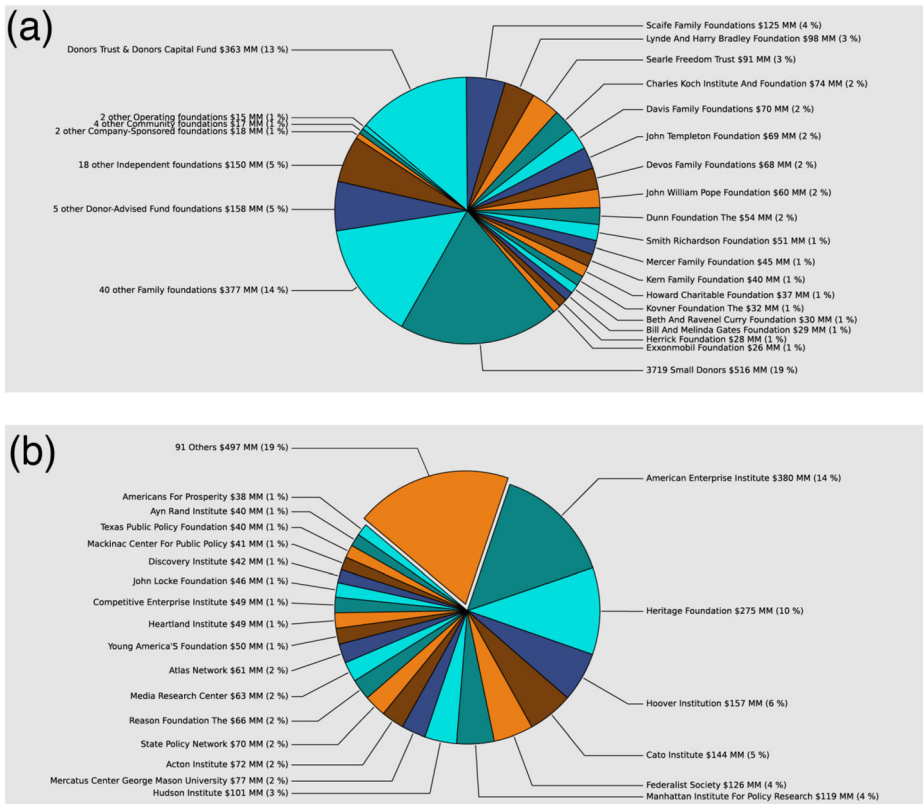

(a)

Donors Trust & Donors Capital Fund $363 MM (13 %)

2 other Operating foundations $15 MM (1 %)
4 other Community foundations $17 MM (1 %)
2 other Company-Sponsored foundations $18 MM (1 %)

18 other Independent foundations $150 MM (5 %)

5 other Donor-Advised Fund foundations $158 MM (5 %)

40 other Family foundations $377 MM (14 %)

Scaife Family Foundations $125 MM (4 %)
Lynde And Harry Bradley Foundation $98 MM (3 %)
Searle Freedom Trust $91 MM (3 %)
Charles Koch Institute And Foundation $74 MM (2 %)
Davis Family Foundations $70 MM (2 %)
John Templeton Foundation $69 MM (2 %)
Devos Family Foundations $68 MM (2 %)
John William Pope Foundation $60 MM (2 %)
Dunn Foundation The $54 MM (2 %)
Smith Richardson Foundation $51 MM (1 %)
Mercer Family Foundation $45 MM (1 %)
Kern Family Foundation $40 MM (1 %)
Howard Charitable Foundation $37 MM (1 %)
Kovner Foundation The $32 MM (1 %)
Beth And Ravenel Curry Foundation $30 MM (1 %)
Bill And Melinda Gates Foundation $29 MM (1 %)
Herrick Foundation $28 MM (1 %)
Exxonmobil Foundation $26 MM (1 %)
3719 Small Donors $516 MM (19 %)

(b)

91 Others $497 MM (19 %)

Americans For Prosperity $38 MM (1 %)
Ayn Rand Institute $40 MM (1 %)
Texas Public Policy Foundation $40 MM (1 %)
Mackinac Center For Public Policy $41 MM (1 %)
Discovery Institute $42 MM (1 %)
John Locke Foundation $46 MM (1 %)
Competitive Enterprise Institute $49 MM (1 %)
Heartland Institute $49 MM (1 %)
Young America'S Foundation $50 MM (1 %)
Atlas Network $61 MM (2 %)
Media Research Center $63 MM (2 %)
Reason Foundation The $66 MM (2 %)
State Policy Network $70 MM (2 %)
Acton Institute $72 MM (2 %)
Mercatus Center George Mason University $77 MM (2 %)
Hudson Institute $101 MM (3 %)

American Enterprise Institute $380 MM (14 %)
Heritage Foundation $275 MM (10 %)
Hoover Institution $157 MM (6 %)
Cato Institute $144 MM (5 %)
Federalist Society $126 MM (4 %)
Manhattan Institute For Policy Research $119 MM (4 %)

Fig. 1 **a** Top grant makers to CCCM organizations and **b** top recipients in the CCCM. Note: Shows organizations making or receiving 1% or more of total grants over the period 2003–2018
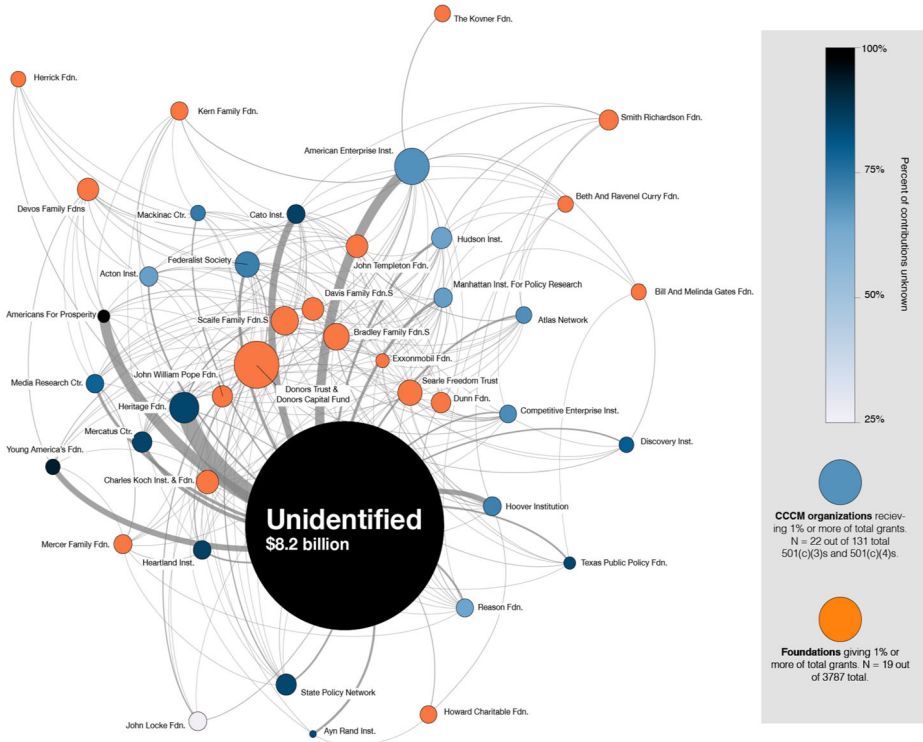
Fig. 2 Sociogram of the CCCM core. Note: Lines indicate grants greater than $5000. Node sizes correspond to the total number of grants given or received. Only foundations and CCCM organizations which give or receive 1% or more of total grants are shown

totals less than $5000 removed for clarity. Unidentified contributions are represented by a single node to demonstrate their prevalence, although they come from many anonymous donors. Individual organizations received between 25 and 100% of their contributions from unidentified sources, with no strong ($p < 0.05$) correlations with organizational assets, revenues, or the proportion of documents relevant to climate change.

Overall, the funding of organizations that make up the CCCM grew steadily between 2003 and 2018 in terms of both total contributions and foundation grants. Figure 3a displays yearly total contributions to the 128 recipient organizations, with grants from the top 100 donors distinguished by the category of the grant maker. Contributions increased steadily over the sample period, from $357 million in 2003 to $808 million in 2018, with a peak at $811 million in 2012. A similar trend holds for foundation grants, which account for 26% (standard deviation = 4%) of yearly contributions to the CCCM on average. Family foundations provided the most grants to CCCM organizations. Notably, DAFs, which anonymize their donors, grew to account for 18% of all grants to the CCCM in 2018.

Based on the LDA modeling of website documents, the funding for climate change or energy related issues comprises about 8% of the total funding, with an annual variation between 4 and 9%. The results are shown in Fig. 3b. The analysis sets an estimate of $36 million per year for climate obstruction efforts over the time period, compared to $616 million per year in total undifferentiated contributions. We also find a markedly different trend in spending on climate as compared to total contributions to the CCCM: whereas the latter
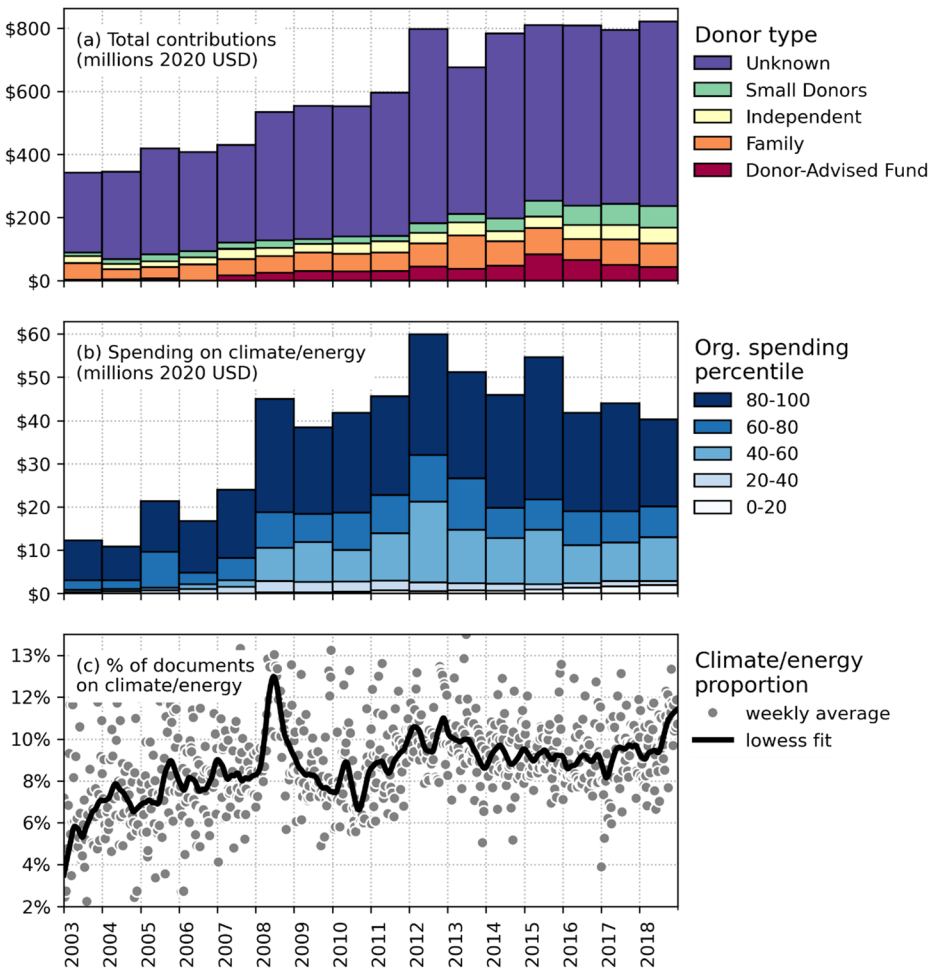
Fig. 3 **a** Contributions to CCCM organizations over time, **b** estimated expenditures on climate and energy, grouped by quintiles, and **c** weekly average fraction of documents relevant to climate and energy

increased steadily over the period, our estimate of climate spending peaks in 2012 at $57 million and then declines, although it remains well above pre-2008 levels.

These results confirm and extend the initial analysis in Brulle (2014). The size and composition of the CCCM has remained remarkably consistent over the time period studied. Funding from conservative family foundations and Donors Trust plays a central role in providing this sort of stability. Beyond simply donating, prior research has shown that family foundations help to coordinate the conservative movement and by extension the CCCM (Hertel-Fernandez et al. 2018). This analysis of funding patterns shows that both the organizations that receive the funding and the foundations that provide the funds are core institutional actors in the larger conservative movement, lending further empirical verification to previous analyses of the CCCM (McCright and Dunlap 2000).

Despite these considerable overlaps, the data on organizational output also demonstrates differences between the CCCM and the broader conservative movement. First, conservative movement organizations within the CCCM vary considerably in the extent of their focus on

climate change, both between organizations and over time (Fig. 3c). Second, two distinct groups within the CCCM provide the bulk of spending on climate and energy issues. The top quintile of CCCM organizations by total spending contributes about 60% of yearly spending on climate, specifically (Fig. 3b). This group includes central conservative institutions such as the Heritage Foundation and the Cato Institute, whose much larger budgets compensate for their relatively smaller focus on climate change.[3] The middle quintile provides the second-most spending on climate change and energy and includes most of the organizations devoted entirely to these issues, such as the Committee for a Constructive Tomorrow (CFACT) and the Institute for Energy Research. It is therefore appropriate to see the CCCM as a union of two distinct groups: large conservative foundations working across many political fields and mid-sized climate and energy think tanks. Additionally, our analysis showed that 380 organizations that we reviewed did not evidence any engagement with climate change. This indicates that the conservative movement is complex, with large multi-purpose organizations engaging in a broad range of issues and then a subset of smaller organizations that focus more on specific issues, such as climate change. Further research is needed to fully understand the segmentation and focus of organizations in the conservative movement.

Our analysis also supports the finding that funding strategies differ between progressive and conservative philanthropists. We find a striking stability in funding over the 16-year time period. The funding strategy of the conservative movement was laid out in the so-called Fat Memo (Miller 2005), which informed the giving practices of the Olin Foundation, the first major conservative philanthropy, and subsequent conservative donors. These funding efforts focus on the development and promulgation of a clear conservative viewpoint. To realize that effort, conservative philanthropies have funded a range of organizations that act to realize that goal on a long-term basis. This strategy focused on the creation and maintenance of conservative think tanks, development of public intellectuals ("thought leaders"), and promulgation of a consistent ideological message. Additionally, conservative foundations focus on building institutional capacity in organizations with strong communications capabilities (Covington 1997; Barley 2010).

This consistent and long-term funding strategy has enabled the development of a cohesive institutional network of conservative organizations that work collectively to promulgate a consistent message. This strategy stands in marked contrast to the funding strategy of progressive foundations, which focus on individual research projects and short-term efforts. Consequently, the progressive activist organizations and think tanks form a very loose and disconnected network (Barley 2010, p. 792). This differs significantly from the very tight network of organizations and think tanks that comprise the conservative movement. The analysis confirms the long-term stable funding that maintains the CCCM.

This analysis still leaves Senator Whitehouse's question unanswered. The source of over three-quarters of the funding of the CCCM cannot be identified. While some of this funding could come from small donations, the existing IRS disclosure rules do not enable any further investigation in this area. Further research is needed to develop new means to extend our understanding of the unidentified funders that created and maintain the CCCM.

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[3] On average, 8.3% of documents per year from organizations in the top quintile related to climate and energy, compared to 17% of documents from organizations in the middle quintile.

Declarations

Conflict of interest The authors declare no competing interests.

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