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Climate Accountability

Dr. Julian Barg

If I may be so bold...

What do these articles have in common?

- Gunawan, T. A. et al. (2024). Design Insights for Industrial CO₂ Capture, Transport, and Storage Systems. *Environmental Science & Technology*.
- Hamilton, S. T. et al. (2024). Electrolyte-Electrocatalyst Interfacial Effects of Polymeric Materials for Tandem CO₂ Capture and Conversion Elucidated Using In Situ Electrochemical AFM. *ACS Applied Materials & Interfaces*.
- Qureshi, M. F. et al. (2022). CO₂ Hydrate Formation Kinetics and Morphology Observations Using High-Pressure Liquid CO₂ Applicable to Sequestration. *Energy & Fuels*.
- Wang, Y. et al. (2022). Evaluation of Schiff-Base Covalent Organic Frameworks for CO₂ Capture. *ACS Sustainable Chemistry & Engineering*, 10(1), 332–341.

➔ ACS Publications journal articles funded by: Exxon, Shell, Exxon, Exxon

...this is what our lab is about

Our guiding question:

How does the fossil sector influence climate discourse and policy?

➔ More systematic mixed-methods research.

Access this presentation at www.jbarg.net

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Research

- Analyze messaging
- Trace origins and funding
- Put numbers on it
- Explore quantitative data sources
- Grassroots data collection
- Natural Language Processing
- Large Language Models, OpenAI's API

Outreach

- Consultation and expert witness testimony (EU Parliament, Congress, Governors, Attorneys General, etc.)
- Media interviews
- Advising NGOs and grassroots groups

This talk

About

Climate accountability – background

Climate accountability – methods

What is happening in your locality?

Call to action

About – Climate Accountability Lab, est. 2023 Now hiring!



Julian Barg, Postdoc

- Sustainability PhD 2023, Western University
- Tracing corporate speech
- Award-winning paper: *No end in sight? A greenwash review and research agenda*

Geoffrey Supran, Associate Professor

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Geoffrey Supran, Associate Professor

- One of ACS own – published in *Environmental Science & Technology*, *Nano Letters*, *Nature Photon*
- Fossil fuel disinformation expert
- Supran, G.; Rahmstorf, S.; Oreskes, N. Assessing ExxonMobil's Global Warming Projections. *Science* 2023.

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Climate accountability – background

Climate accountability – background

Five key papers/books (in addition to Geoffrey's):



- Oreskes, N.; Conway, E. M. *Merchants of Doubt: How a Handful of Scientists Obscured the Truth on Issues from Tobacco Smoke to Global Warming*, 1st U.S. ed.; Bloomsbury Press: New York, 2010.
- Brulle, R. J. Institutionalizing Delay: Foundation Funding and the Creation of U.S. Climate Change Counter-Movement Organizations. *Climatic Change* 2014, 122 (4), 681–694.
- Lamb, W. F.; Mattioli, G.; Levi, S.; Roberts, J. T.; Capstick, S.; Creutzig, F.; Minx, J. C.; Müller-Hansen, F.; Culhane, T.; Steinberger, J. K. Discourses of Climate Delay. *Global Sustainability* 2020, 3, e17.
- Almond, D.; Du, X.; Papp, A. Favourability towards Natural Gas Relates to Funding Source of University Energy Centres. *Nature Climate Change* 2022, 12 (12), 1122–1128.
- Franta, B. Weaponizing Economics: Big Oil, Economic Consultants, and Climate Policy Delay. *Environmental Politics* 2022, 31 (4), 555–575.

Climate accountability – background

Show of hands: who has heard of the Global Climate Coalition?

- Late 80s: James Hansen reports to Congress that climate change is real and human-caused. Creation of IPCC.
- Oil companies, utilities, coal, steel, rail response: Global Climate Coalition.
- Well-studied early leader of climate denial.
- Spent \$12–13 million on anti-Kyoto campaign.
- Activities: testify to Congress, undermine Rio Climate Agreement, using economic talking point.

How do we know about the Global Climate Coalition?

- Pieced together over decades from private archives, FOIA requests, litigation, IRS filings.
- Incredible archive of letters, memos, internal reports etc.
-  Archival work.
- Slowly translated from journalistic into scientific work.
-  Picture emerged only years after...

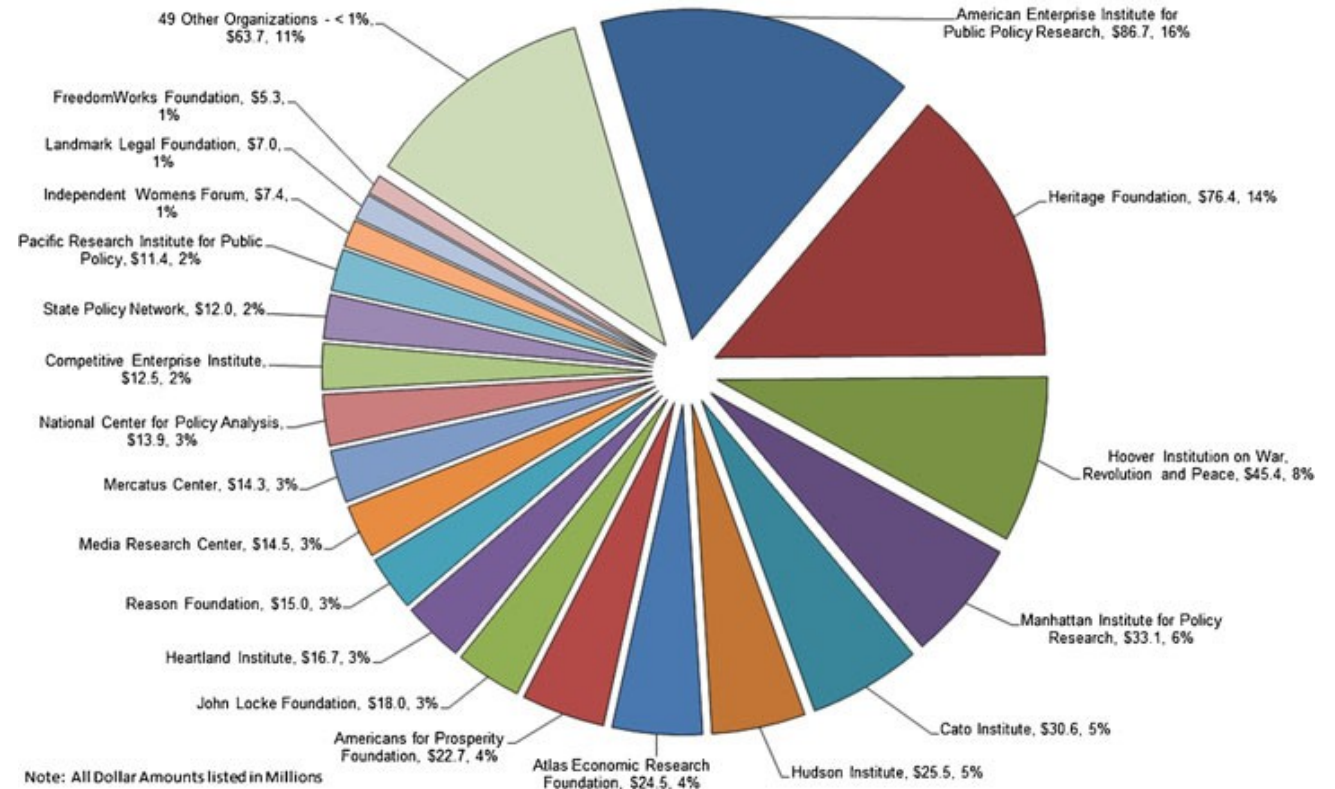
Climate accountability – background

...And since then, hundreds of successors emerged. *We need a different hammer!*

Climate change counter-movement – a loosely coupled network of hundreds of organizations and thousands of individuals.

This specific example – Brulle (2014) analysis of IRS disclosure.

**Total Foundation Recipient Income Distribution - 2003 to 2010
U.S. Climate Change Countermovement Organizations**



Climate accountability – background

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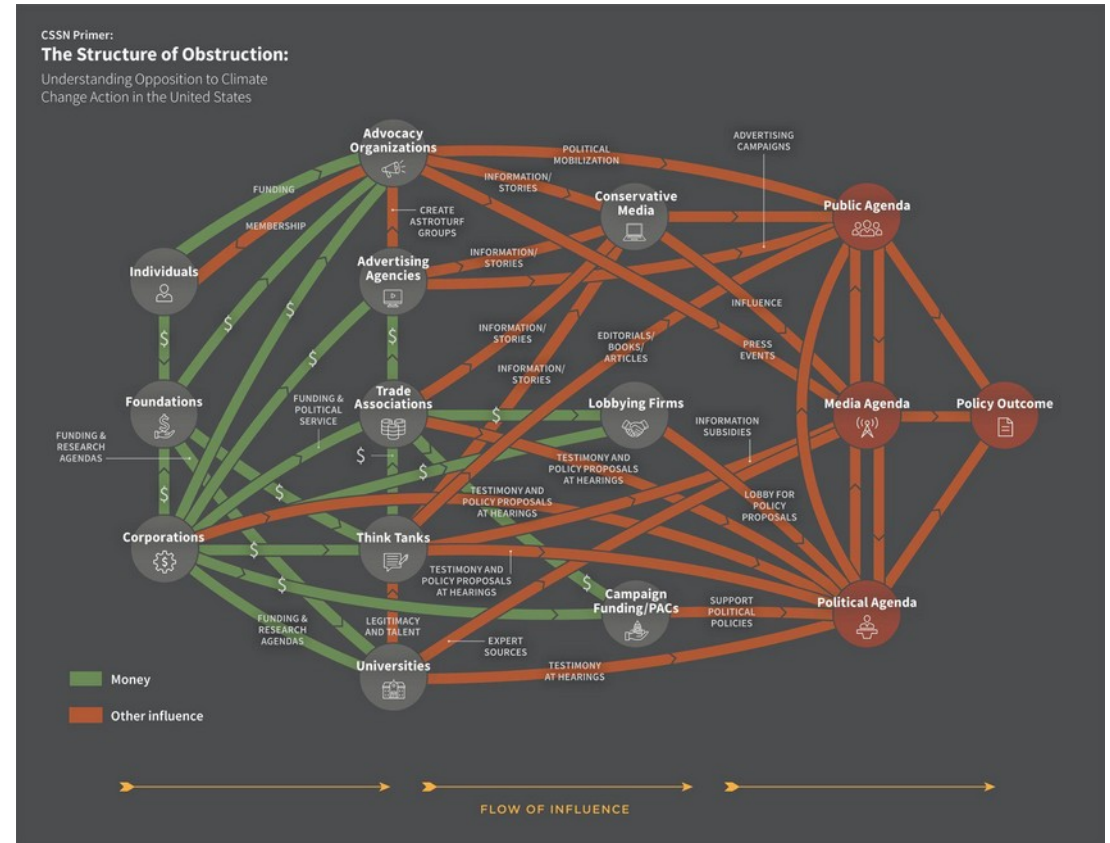
America's dirty divide

Revealed: Shell oil non-profit donated to anti-climate groups behind Project 2025

Foundation says it 'does not endorse any organizations' while funneling hundreds of thousands to rightwing causes

Climate accountability – background

Case study: university-industry agreements
– what does this mean in practice?



Climate accountability – background

Case study: university-industry agreements – what does this mean in practice?

- Following the tobacco handbook, fossil sector reaching into universities.
 - → Fossil sector reaches into universities – some research centers play a role in climate obstruction.
- Funding agreements establish research agenda.
- Surrender control of academic boards.
- Control intellectual property.
- Often, final say on publications.
- Compare medical field – withholding negative or non-significant results incurs bias.

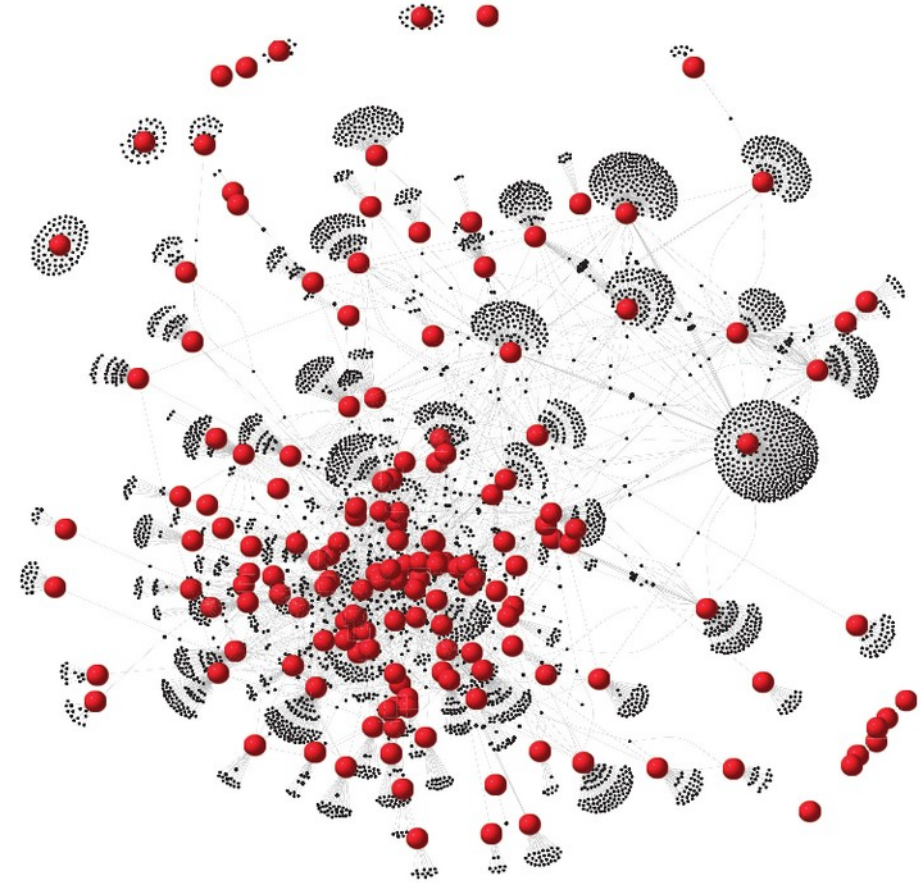
From third sector report (Washburn, 2010):

- *At first glance, this 4-4 voting structure might appear quite egalitarian and fair... Yet in U.C. Berkeley's original EBI proposal (dated November 2006), the university was careful to retain majority academic control: **Out of five voting member seats on the original Governance Board, three were reserved for the academic partners, and the remaining two were held by BP.** This academic majority was consistent with longstanding traditions of academic self-governance.*

Climate accountability – background

Case study: university-industry agreements – how can we elevate the debate?

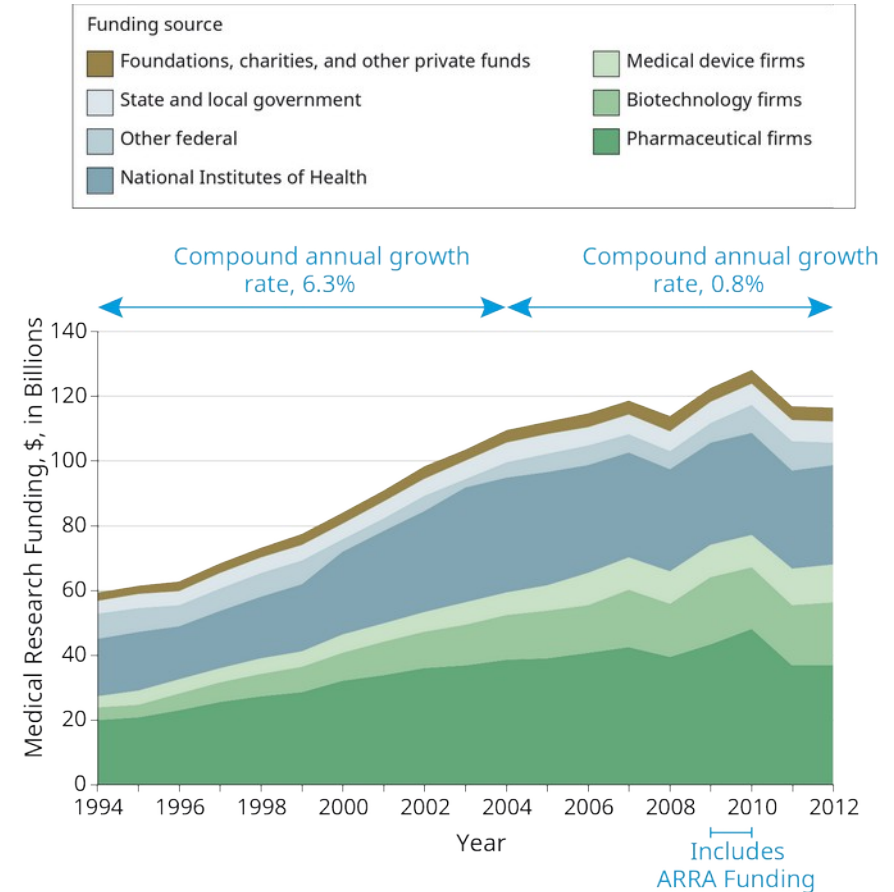
- Put numbers to it? E.g., between 2010–2020, six leading fossil fuel companies donated or pledged over \$650M to 27 universities (Kumar, 2023).
- Measure impacts? E.g., fossil-funded research centers are more favorable to natural gas (Almond et al., 2022).
- Map out the network? E.g., 164 organizations connected through 4,556 individuals (Farrell, 2016).



Climate accountability – background

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- Map out the network? E.g., 164 organizations connected through 4,556 individuals (Farrell, 2016).
- Benefits of empiricism: provide context, weigh factors beyond case studies (Moses et al., 2015).



Climate accountability – methods

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Climate accountability – methods

Better qualitative approaches:

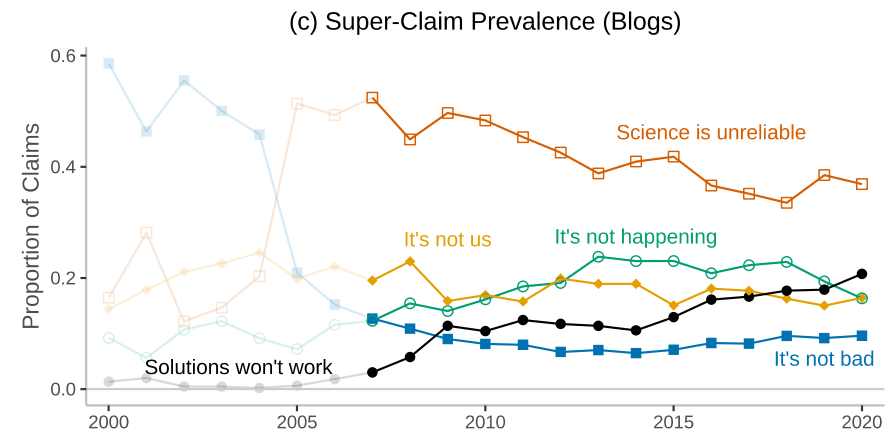
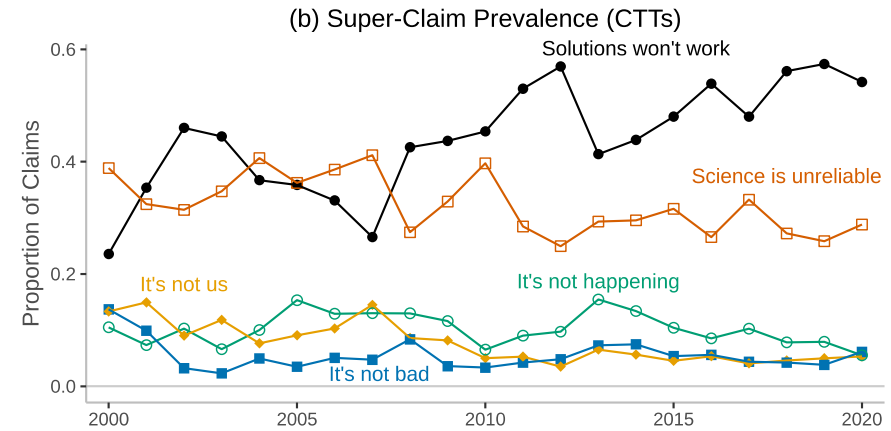
- Cat-and-mouse game for documents.
- Major document archives: Industry Documents Library, Climate Investigations Center, InsideClimate News, DeSmog.
- Professionalization of document collection and sharing, legal and political document discovery.
- Grounded approaches, interviewing insiders.
 - Former professionals who feel deceived or disappointed.
- Industry responds with obfuscation.



Climate accountability – methods

Better quantitative approaches:

- Systematic datasets – e.g., 255,449 documents from 20 think tanks and 33 blogs used on the right (Coan et al., 2021).
- Curated datasets – e.g., 32 Exxon internal vs. 72 Exxon peer-reviewed, 76 Exxon advertorials (Supran & Oreskes, 2021).
- Web scraping/large scale RA employment.
- Utilization of business databases.
- Programmatic detection of climate denial, natural language processing.
- Entity recognition with large language models.
- Image processing with large language models.



Climate accountability – methods

Challenge 1 – getting scale

- Step 1: Identify novel datasets.
- Step 2: Rely on programmatic methods.
- Step 3: Do not limit data collection to fossil fuel companies.
- **!** Cumbersome, more data to collect and process.

Challenge 2 – entities and enablers

- Prime example: car manufacturers.
- “Ecosystem” of engineering and law firms serve fossil sector.
- 60 banks provide ~\$7B in critical funding 2016–2023 (Merleaux et al., 2024).
- Solutions:
 - Employ large language models to presort.
 - Scripts to identify entities.
 - Develop criteria to categorize fossil utilities, internal combustion engine manufacturers.

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Call to action

Call to action

We are working with students and academics on the ground to identify previously unidentified influences.

Get in touch, and we will be in touch: jbarg@miami.edu



Call to action

Lessons learned:

- Common career wisdom to play it safe, but there exists a variety of interdisciplinary journals with high impact factors and grant opportunities.
- This is no one's "turf." If you are interested, write something!
- Weird academic apathy rooted in desire to remain "neutral." We report things as observed.
- Beyond doing our jobs, there is an enormous interest from journalists, law makers, and courts.



References

Almond, D., Du, X. & Papp, A. (2022). Favourability towards natural gas relates to funding source of university energy centres. *Nature Climate Change*, 12(12), 1122–1128.

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Moses, H., III, Matheson, D. H. M., Cairns-Smith, S., George, B. P., Palisch, C. & Dorsey, E. R. (2015). The Anatomy of Medical Research: US and International Comparisons. *JAMA*, 313(2), 174–189.

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