

Visualizing Advocacy and Practical

Organized Climate Change Denial Networks

There is more than one kind of organized climate change denial, and practical denial is on the rise as the saliency of the worsening physical conditions for social life such as excessive heat, drought, storms, etc. become more obvious.

I seek to include more organized opposition to effective climate action along with what might be called classical climate change denial by foundations, think tanks and front groups engaged in propaganda and misinformation.

Practical denial does not deny climate science. Instead it engages in acts that assume the science does not matter or as if action to prevent the causes of our worsening climate—some form of emissions—must be avoided because of more important priorities such as economic growth, political control, exploiting access to fossil resources in the Arctic, etc.

I explore several of these forms of practical organized denial and seek to visualize them in addition to classical organized denial. I seek ways to view the part and the whole together on a larger scale than my previous work visualizing the classical denialist network within the United States only.

I hope to find links if they exist between the denialist core groupings as they are discovered by researchers and activists and consider alternative SNA visualization methods that best allow observers and actors to understand the evolving relationships.

The Situation

Social Network Analysis has exemplary works with classical climate change denial networks. How can we extend what has been achieved, applying the same metaphor of trees and forest to visualize the multifaceted ways of denying the practical reality of Climate Change along with our classical approaches?

Before Covid and other disruptions I hoped to make progress along the lines of including additional forms of denial, but for now I am still limited to data generously provided by researchers on classical denial.

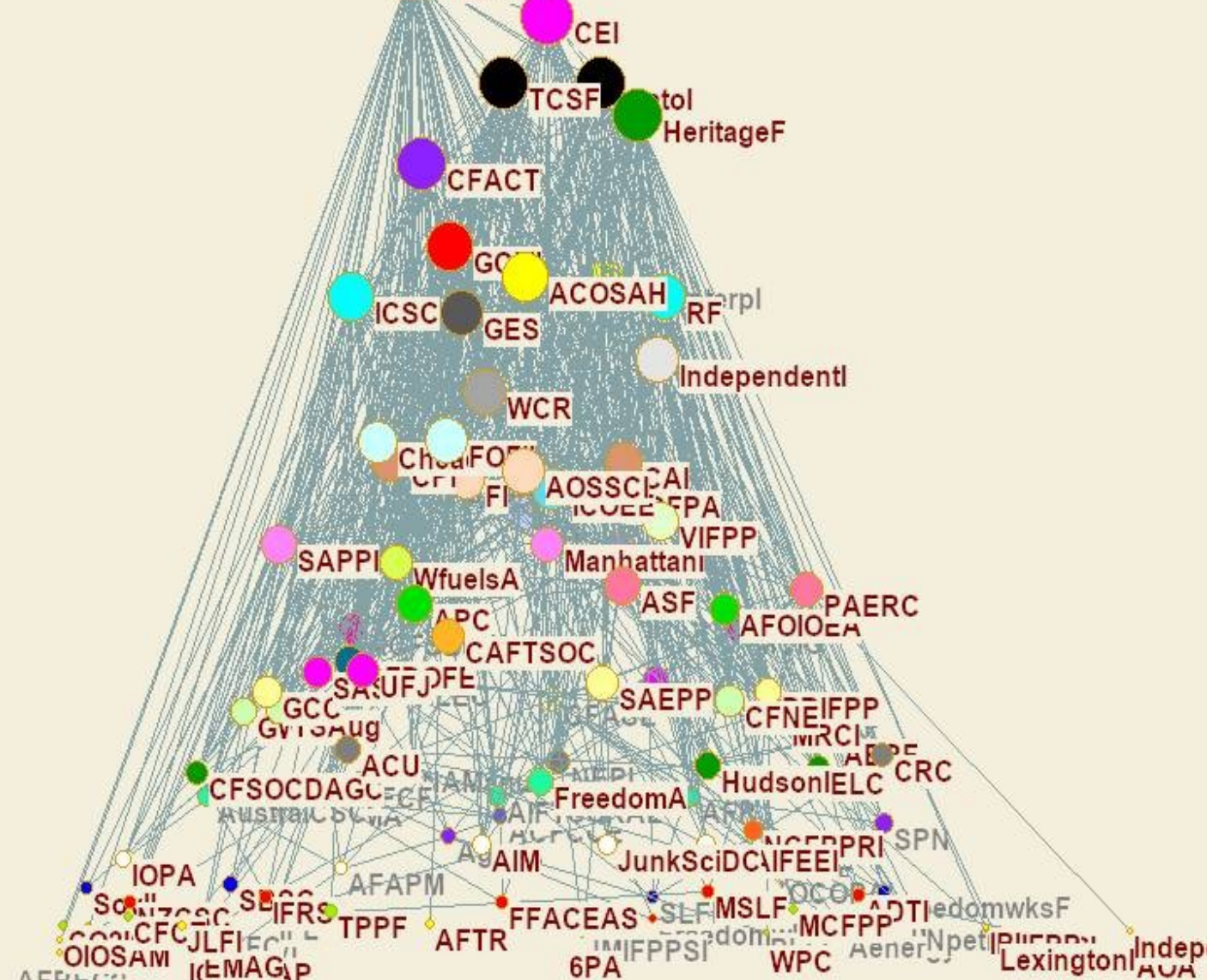
Forest and the Trees

We want people to be able to visualize both at the same time wherever possible

A new way to visualize the climate denial organizational network

Add a third dimension and rotate the graph

See the full example in motion in the video



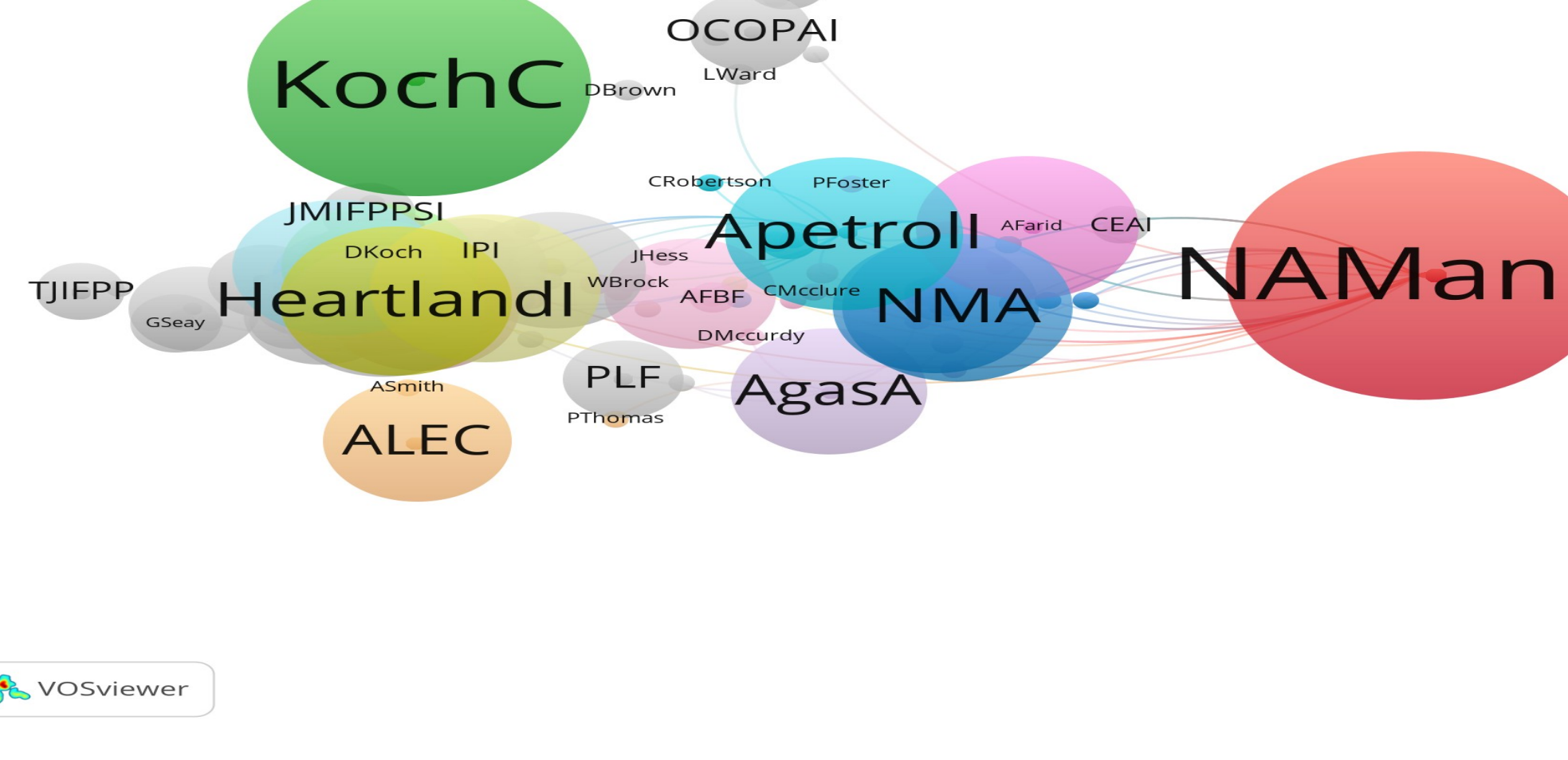
Above is a 2D JPG image of the 3D rotating image using Justin Farrell's data from his 2016 PNAS article, "Corporate funding and ideological polarization about climate change" [www.pnas.org/cgi/doi/10.1073/](http://www.pnas.org/cgi/doi/10.1073)

Technically it is Pajek generated graph of an induced 1-mode network from the basic 2-mode (organizations and people combined) network, so it only contains the climate denial organizations, but it uses people's ties to multiple organizations, their degree, as a partition and as a vector (to get colored vertices) and is treated in Pajek as a z-axis in drawing the 3D graph.

The graph spreads out that dense point cloud around the core and employs that 3rd dimension to spread it out in an intuitive way, with Heartland Institute ("Heartland!"), the most linking, at the top.

It is not based on number of individual people who are attached to a single organization like the big National Association of Manufacturers cluster with acronym "NAManuf"—which in the above graph is centered and near to and up several levels from the bottom or an "island" rising above the plain but on the other side, shaded, of the graph at this point.

In contrast the below image from another free software package, VOSviewer, which took a graph from Pajek of a network of organizations and individual people and pruned off minor players, leaving just 37 larger clusters. In it the number of individuals who belong to a particular denial organization determines the size of the organization vertex. I argue the top image is more informative for most understanding of how the denial machine about 2015 functioned though the bottom one is also of use.



This is a ranked list of the top 30 connected organizations of 116 and their acronyms in the top graph

Acronym	Organization	Acronym	Organization
HeartlandI	HEARTLAND INSTITUTE	FOFII	FRONTIERS OF FREEDOM INSTITUTE INC
CEI	COMPETITIVE ENTERPRISE INSTITUTE	CAI	CONSUMER ALERT INC
CatoI	CATO INSTITUTE	CPI	CASCADE POLICY INSTITUTE
TCSF	TECH CENTRAL SCIENCE FOUNDATION	Apetroll	AMERICAN PETROLEUM INSTITUTE
HeritageF	HERITAGE FOUNDATION	AOSSCI	ADVANCEMENT OF SOUND SCIENCE CENTER INC
CFACT	COMMITTEE FOR A CONSTRUCTIVE TOMORROW	FI	FRASER INSTITUTE
GCMi	GEORGE C. MARSHALL INSTITUTE	ICOOE	INDEPENDENT COMMISSION ON ENVIRONMENTAL EDUCATION
ACOSAH	AMERICAN COUNCIL ON SCIENCE AND HEALTH	NCPPA	NATIONAL CENTER FOR POLICY ANALYSIS
AmEnterpl	AMERICAN ENTERPRISE INSTITUTE	IPN	INTERNATIONAL POLICY NETWORK
ICSC	INTERNATIONAL CLIMATE SCIENCE COALITION	VIFFPP	VIRGINIA INSTITUTE FOR PUBLIC POLICY
RF	REASON FOUNDATION	ManhattanI	MANHATTAN INSTITUTE
GES	GREENING EARTH SOCIETY	KochC	KOCH COMBINED
IndependentI	INDEPENDENT INSTITUTE	SAPPI	SCIENCE AND PUBLIC POLICY INSTITUTE
WCR	WORLD CLIMATE REPORT	WfuelsA	WESTERN FUELS ASSOCIATION
ChadsC	COOLER HEADS COALITION	ASF	AMERICAN SPECTATOR FOUNDATION

The page references in the 2018 Pajek text for how to make the top graph from scratch start about p. 121 and lead into section 5.4 "Islands" and continue with additional discussion. The Pajek text is *Exploratory Social Network Analysis with Pajek: Revised and Expanded Edition for Updated Software* by Nooy, Mrvar, and Batagelj, Cambridge University Press

Practical Climate Change Denial

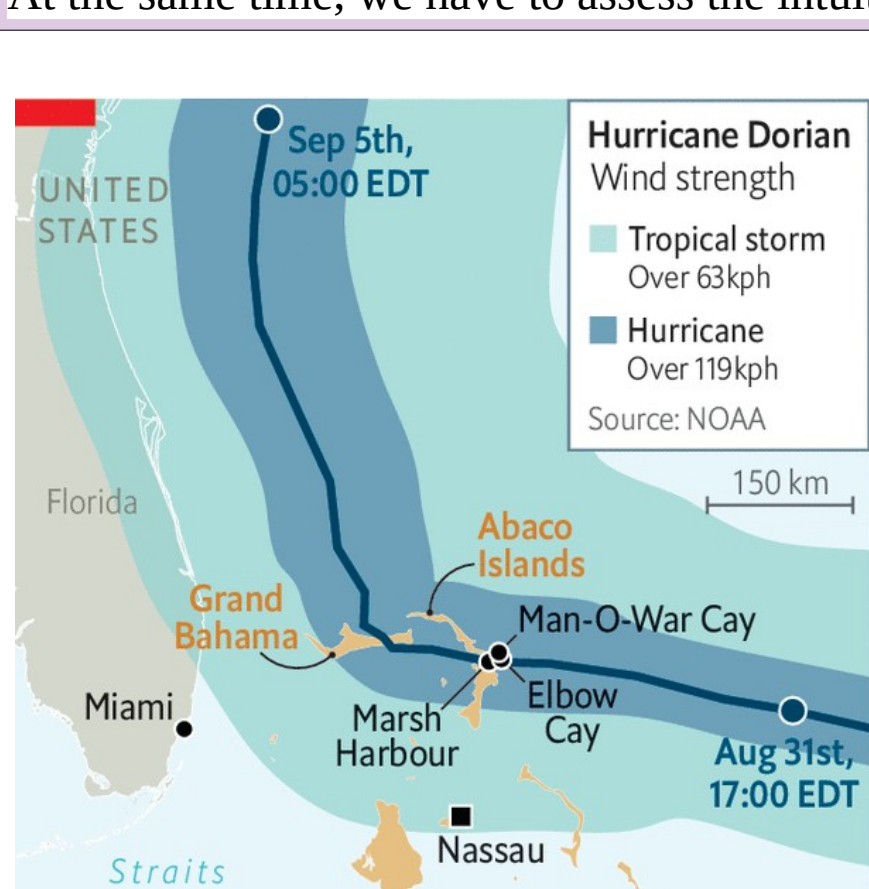
The Fossil Fuel Barons and their PR Firms, Front Groups/Astroturf Movements, Bankers and Political Enablers are clear candidates for linking into a broader set of graphic visualizations. Evident fellow travelers in the Libertarian Think Tanks and Foundations can be expected to continue associations as they already show up among the Core of the classical denialists.

A simple 3D graph is very unlikely to succeed in representing the full array of interrelationships. More complex graphical forms and perhaps multi-dimensional representations may work, especially if combined with reasonable pruning as in VosViewer and spreading out like in the 3rd dimension in Pajek. Pajek already has multiple methods of seeking to view the trees and forest at the same time.

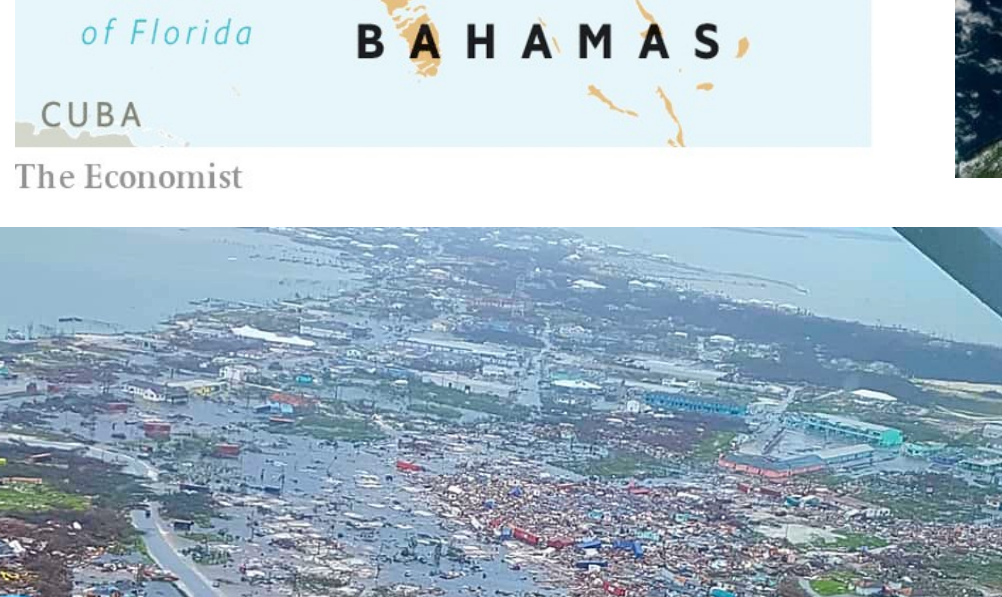
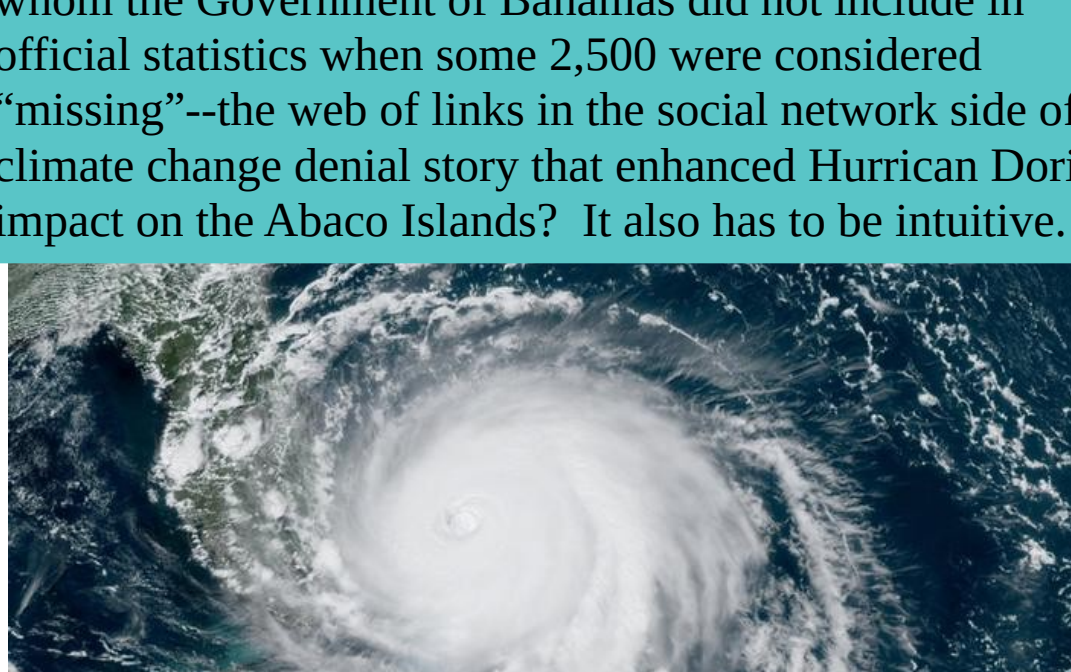
There's a kind of multi-sector denialism in which Business as Usual corporate and government operations ignore the dire warnings of our running out of time. I suspect there are also professional associations of planners, city managers, managers in general in which short sighted visions are developed into an art form of delay where every bit of delay is denial and dangerous.

There is an international and multinational dimension as well.

At the same time, we have to assess the intuitive grasp that the graphic tools provide.



Our public: How do we show people—who emigrated from Haiti and the Government of the Bahamas did not include in official statistics when some 2,500 were considered "missing"—the web of links in the social network side of the climate on the Abaco Islands? It also has to be intuitive.



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Suggestions and corrections are appreciated.