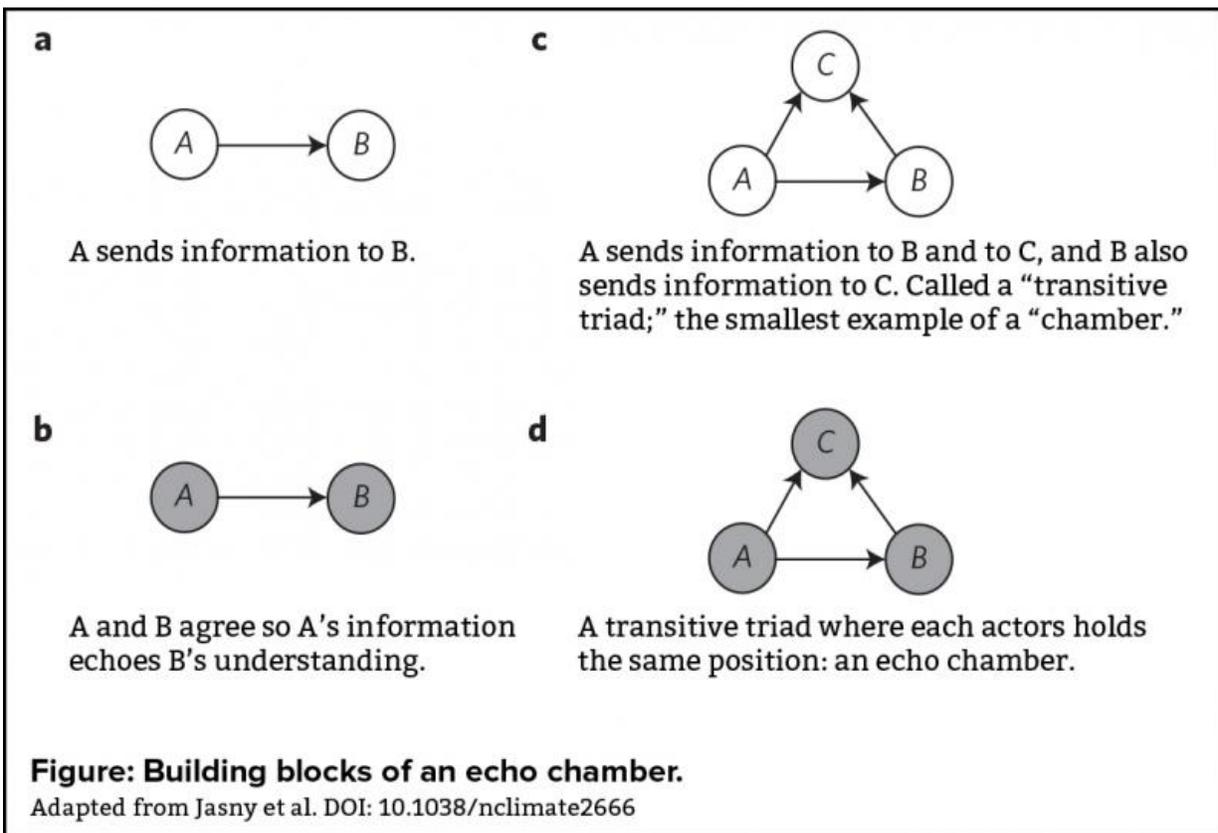


Climate change debate fueled by 'echo chambers,' study finds

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Building blocks of an echo chamber. Credit: Jasney et al. *Nature Climate Change*, DOI: 10.1038/nclimate2666

A new study from researchers at the University of Maryland (UMD) and the National Socio-Environmental Synthesis Center (SESYNC)

demonstrates that the highly contentious debate on climate change is fueled in part by how information flows throughout policy networks.

The UMD and SESYNC researchers found that "echo chambers"—social network structures in which individuals with the same viewpoint share [information](#) with each other—play a significant role in [climate](#) policy communication. The researchers say that echo chambers may help explain why, despite a well-documented scientific consensus on the causes and drivers of global changes in climate, half of U.S. senators voted earlier this year against an amendment affirming that [climate change](#) is human-induced.

A peer-reviewed paper based on the study was published online May 25 in the journal *Nature Climate Change*.

"Our research shows how the echo chamber can block progress toward a political resolution on climate change. Individuals who get their information from the same sources with the same perspective may be under the impression that theirs is the dominant perspective, regardless of what the science says," said Dr. Dana R. Fisher, a professor of sociology at UMD and corresponding author who led the research.

In summer 2010, researchers surveyed the most active members of the U.S. climate policy network, including members of Congress and leaders of non-governmental organizations and business and trade unions. Respondents were asked questions about their attitudes toward [climate science](#) and climate policy, as well as questions to establish their policy network connections. For example, respondents were asked to identify their sources of expert scientific information about climate change and with whom they collaborate on a regular basis regarding the issue of climate change.

"This time period was particularly interesting for studying climate policy

because legislation regulating carbon dioxide emissions had passed through the House of Representatives and was being considered in the Senate. If passed, this bill would have been the first case of federal climate legislation passing through the U.S. Congress," Fisher said.

The researchers then used an exponential random graph (ERG) model—a complex statistical model for analyzing data about social and other networks—to test for the presence and significance of echo chambers among members of the U.S. [climate policy](#) network. In the "echo," two people who have the same outlook or opinion on a relevant issue share information, reinforcing what each already believes. In the "chamber," individuals hear information originating from one initial source through multiple channels.

"The model we used gives us a framework for empirically testing the significance of echo chambers," said Dr. Lorien Jasny, a computational social scientist at SESYNC and lead author of the paper. "We find that the occurrences of echo chambers are indeed statistically significant, meaning our model provides a potential explanation for why climate change denial persists in spite of the consensus reached by the scientific community."

The researchers say that echo chambers explain why outlier positions—for example, that climate-warming trends over the past century are likely not due to human activities—gain traction in the political sphere. The answer lies in the disproportionate connections among ideologically similar political communicators.

"Information has become a partisan choice, and those choices bias toward sources that reinforce beliefs rather than challenge them, regardless of the source's legitimacy," Fisher said.

Jasny and Fisher point out that the debate on climate change is not

indicative of inconclusive science. Rather, the debate is illustrative of how echo chambers influence information flows in policy networks.

"Our research underscores how important it is for people on both sides of the [climate debate](#) to be careful about where they get their information. If their sources are limited to those that repeat and amplify a single perspective, they can't be certain about the reliability or objectivity of their information," Jasny said.

More information: "An empirical examination of echo chambers in US climate policy networks, Jasney et al. *Nature Climate Change*, [DOI: 10.1038/nclimate2666](#)

Provided by National Socio-Environmental Synthesis Center

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