

# Review of: "Motivated Reasoning Leads Climate Change Deniers to Access Unreliable Online Sources of Information: Automated Text Analyses of Multiple Reddit Communities"

Thomas Swan

Potential competing interests: No potential competing interests to declare.

This is a novel study with an interesting methodology, but the conclusions appear (to me) to be flawed because they rely on assumptions about the participants (the redditors), the sources of information that they have to choose from, and their intelligence. As with many studies that analyze large quantities of content from the internet, the greater ecological validity (acknowledged by the author) is balanced against a critical lack of information about the people producing the content.

While I applaud the attempt to study this content, there were many flaws (in my view) with the approach employed here. First, I am unclear as to whether "motivated reasoning" is the correct term. To my knowledge, motivated reasoning requires that someone reason their way toward a particular conclusion that suits their interests or would be emotionally satisfying. The target article seems to be referring to people (redditors) who have already reached a conclusion and are "seeking out and interacting with like-minded people" and talking about "questionable evidence." It may be more an example of confirmation bias than motivated reasoning. If they used questionable evidence to reach their conclusion, it could be motivated reasoning, although you would need to establish that they were motivated to believe the questionable evidence rather than believing it for some other reason (maybe they just found it plausible, based on their prior beliefs, e.g., they think liberals lie, so they don't trust things that liberals often say, such as things about climate change?).

The author appears to assume that they were motivated because being a climate change denier is compatible with their existing "self-identity," but more data would be needed about their identities to draw that conclusion (and this also seems closer to cognitive dissonance than motivated reasoning). Indeed, Hypothesis 1 says that "climate change deniers comment on information sourced from blogs advocating political ideologies similar to their own". But the only ideology we know about these deniers is that they are deniers. The author reports that hypothesis 1 is supported by Figure 1, but I don't see any ideology there either. Is the author claiming that climate change denial is itself a "political ideology"? If so, then the hypothesis should be rephrased to "climate change deniers comment on information sourced from climate-denying blogs," which wouldn't be surprising and wouldn't say anything about their self-identity. Reading the Discussion, I now see that this flaw is briefly acknowledged, yet Hypothesis 1 and the claimed support for it remain part of the article.

I think the core problem with the study is there are far more news articles and academic papers to support the arguments of climate change believers. Whereas climate change deniers have no authoritative sources to draw on, so they are limited to blogs. If they had academic papers to discuss, they might do so. So I don't think any conclusions can be drawn about their reading choices, i.e., whether the other three hypotheses can be supported. All deniers have are "unreliable

sources," so how can they choose anything else? This seems like a fatal flaw, but perhaps the data could still be published if its acknowledged. As for talking to others with "a similar view," I'm sure everyone in the study was guilty of that.

Regarding the denier's unreliable sources, I don't think the Heartland Institute and GWPF can be categorized as "blogs," which gives the impression that it's just some guy making up stories. Regardless of their content, these two sources appear to be somewhat more authoritative than blogs (i.e., a think tank and a Foundation). Indeed, the categorization of news media and blogs seemed problematic, in general. I suspect that the political ideology of most news media organizations could be identified by most people (e.g., WaPo is liberal, Fox is conservative) regardless of whether that ideology is stated. I also suspect that liberal media is less likely to identify its ideology, since liberalism dominates the media and doesn't need to distinguish itself in the same way.

Lastly, I think a confounding variable that hasn't been considered is the intelligence of the person holding the belief. Intelligent people should be more likely to read academic journals and authoritative news than non-intelligent people, regardless of motives. I would also suspect that intelligent people are more likely to believe in climate change. Intelligence may therefore account for the observed relationship between climate change acceptance and reading less questionable sources of information.

I hope some of this has been helpful. I think the data should be published but with clearer conclusions about what it does and does not say, and with the above caveats clearly stated. Such changes would involve changing the title, which contains a claim that I don't think can be supported by the study.