

FLICC: Fake Experts, Logical Fallacies, Impossible Expectations, Cherry Picking, and Conspiracy Theories

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SCIENCE TRUST PROJECT

Equipping Physicists with the Skills Necessary to Address Science Misinformation

The Science Trust Project is an APS initiative with the long-term goals of: (1) empowering members to meaningfully contend with misinformation about science in their professional and personal lives and (2) developing a better understanding of the impact of membership participation in addressing misinformation.

Upcoming Event: Science Trust Coffee Hours

STP coffee hours take place on the second Tuesday of the month from 2:00 - 3:00 pm ET.

More Information

Sign up to receive more information about upcoming workshops and learn how you can get involved.

Techniques of Science Denial



Fake
Experts



Logical
Fallacies



Impossible
Expectations

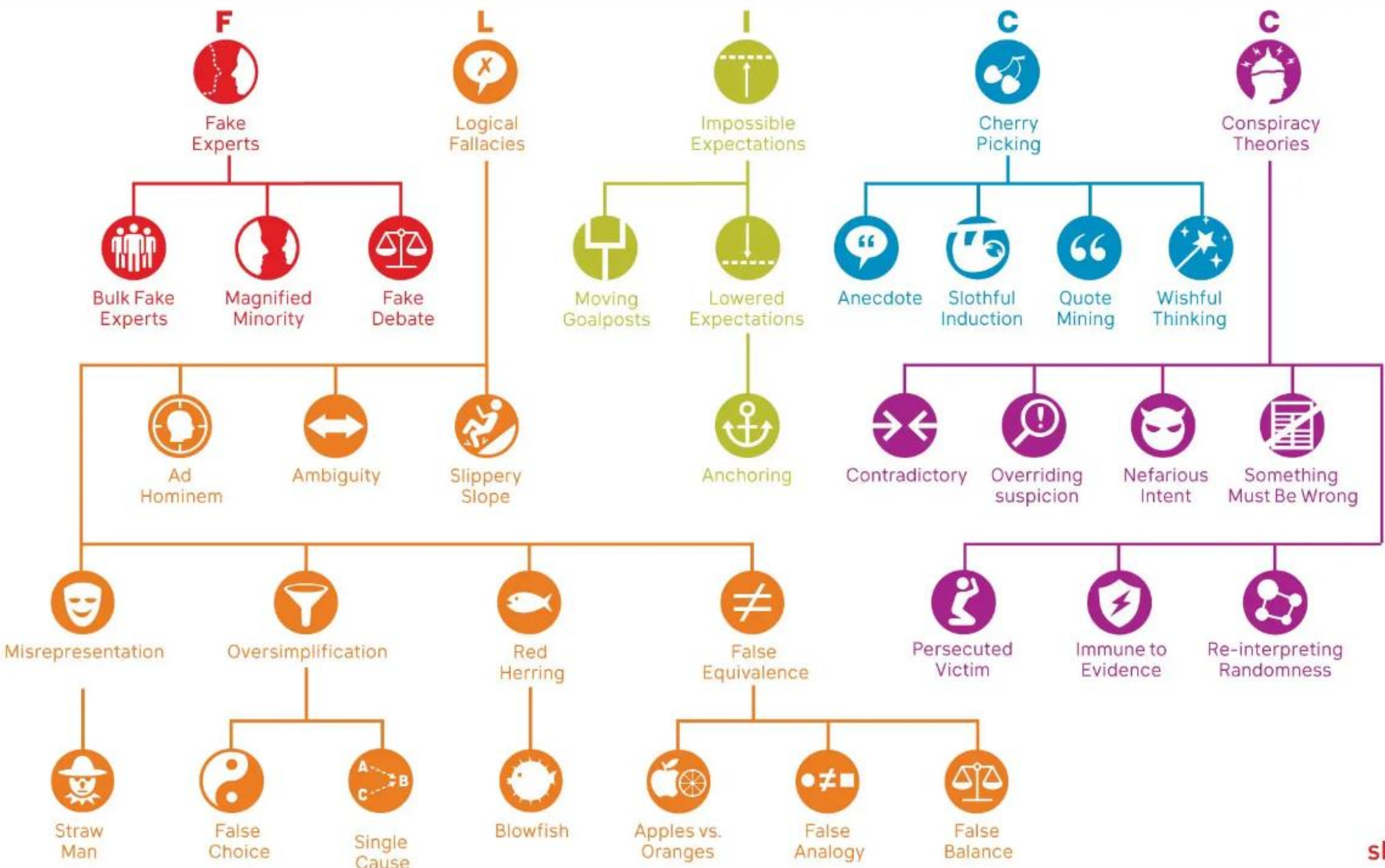


Cherry
Picking



Conspiracy
Theories

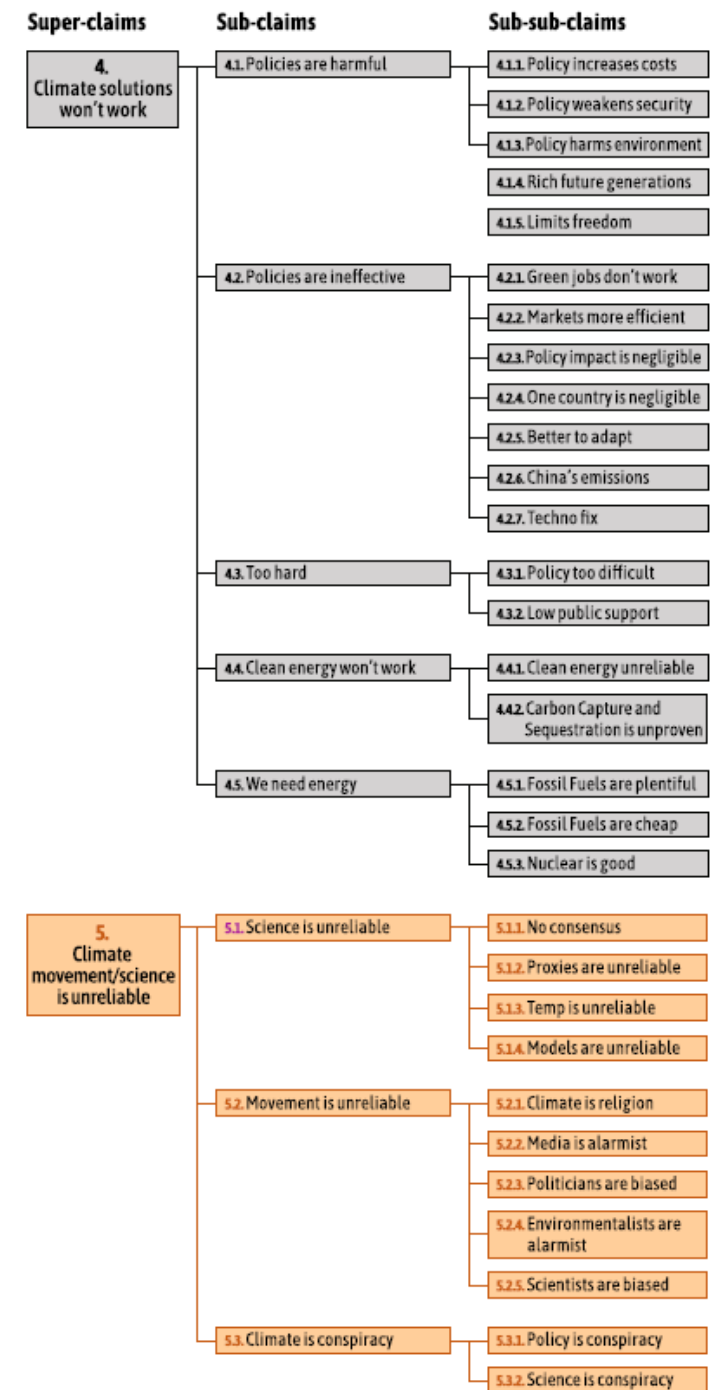
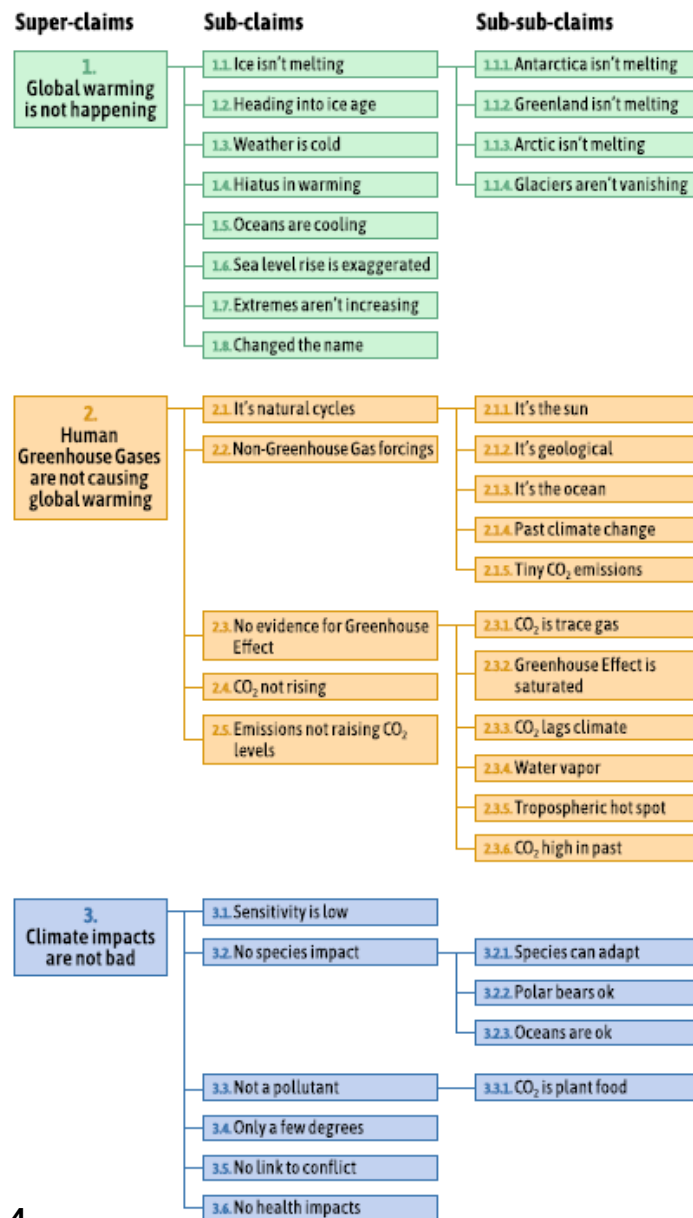
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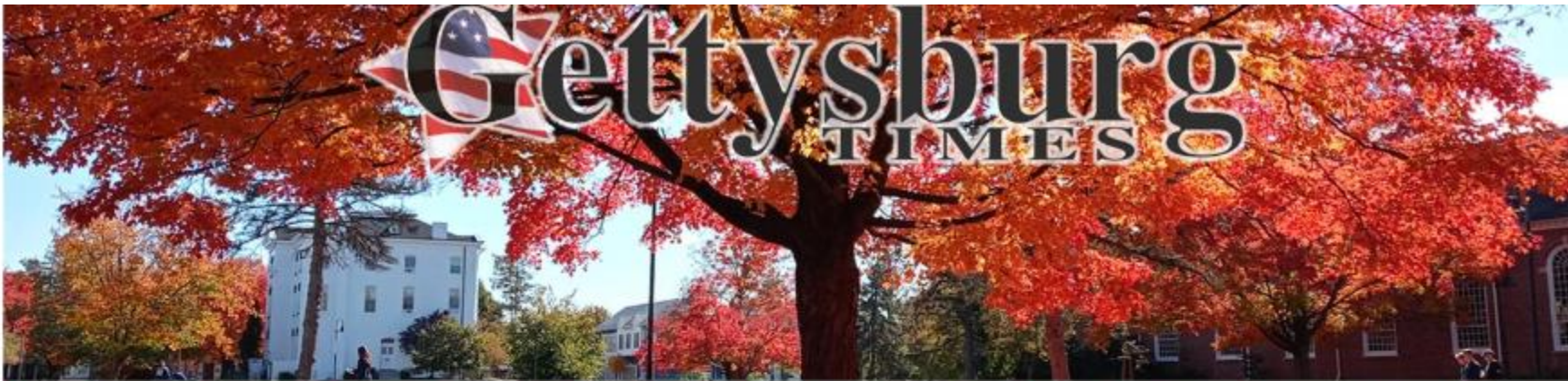


Computer-assisted classification of contrarian claims about climate Change

www.nature.com/articles/s41598-021-01714-4

<https://doi.org/10.1038/s41598-021-01714-4>





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Facts and myths about climate change

Oct 12, 2023 0

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Climate change

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Other forms of logical fallacy include ad hominem arguments, where attacks are made against the person presenting the evidence for climate change rather than addressing the evidence itself. One recent letter writer, for example, dismissed climate change by complaining that advocates for action on climate change are bullies. Another form of logical fallacy is misrepresentation, where a fact is mis-stated or distorted in such a way as to make it easier to knock down. Another common logical fallacy is raising a "red herring" by deliberately diverting attention to an irrelevant fact to distract us from the much more relevant facts. In an op-ed published on Sept. 20 and in a Letter to the Editor published on Sept. 6, the writers made much ado about the fact that carbon dioxide is good for plants and agriculture, claiming on this basis that climate change is not harmful. This claim is the classic "red herring," in that it distracts us from the much more relevant fact that the carbon dioxide molecule traps heat radiating from the Earth's surface because that heat energy is transformed into numerous modes of the molecule's energy of motion. Furthermore, their claim that increased carbon dioxide makes up such a small fraction of the atmosphere that we do not have to worry about it is yet another "red herring" for the same reason.

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Cherry-picking: "Here, the climate change denier will pick out the one bit of information that supports the preconceived bias or relate an anecdotal story instead of relying on good arguments or compelling evidence."



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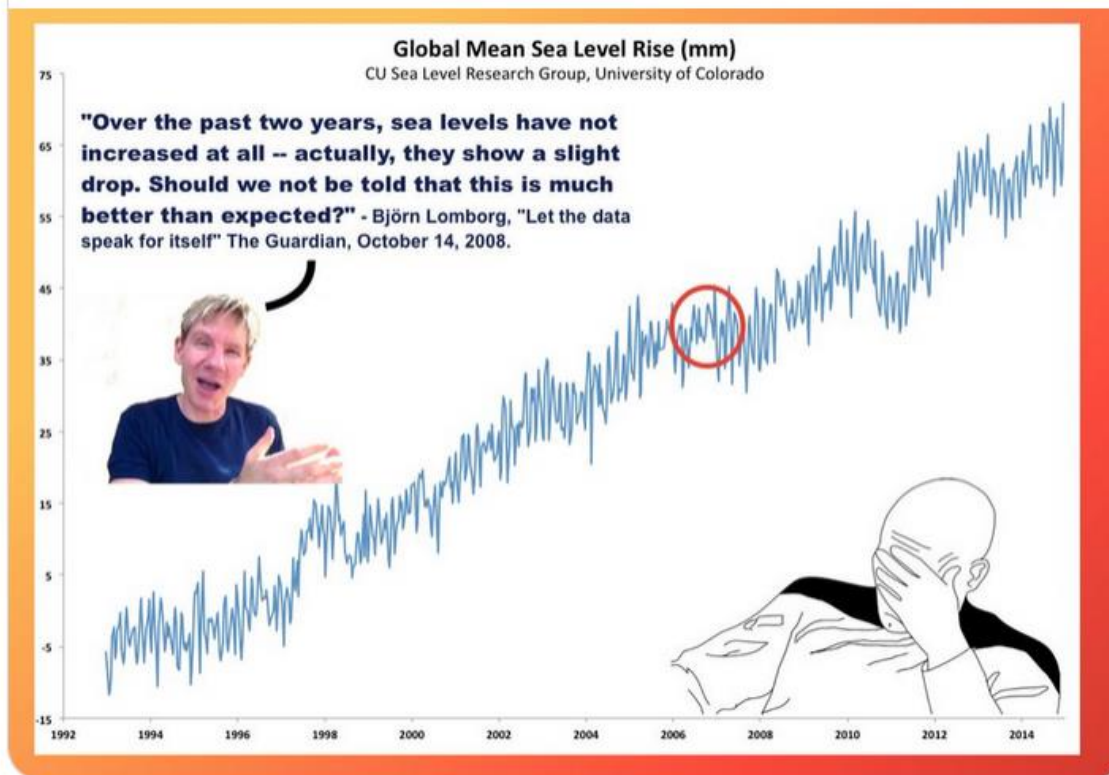
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Current Opinion in Psychology

Volume 47, October 2022, 101386



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Conspiracy Theories (2023)

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Misogyny, authoritarianism, and climate change

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Abstract

Globally, democratic politics are under attack from Electorally Legitimated Misogynist Authoritarian (ELMA) leaders who successfully use misogyny as a political strategy and present environmental concern in feminine and inferior terms. The ascendancy of such projects raise questions involving socioeconomic structures, political communication, and the psychological underpinnings of people's attitudes. We offer misogyny, conceptualized in a specific way – not simply as hatred or disgust for women, but as a way of accessing a gendered hierarchy whereby that which is labeled “feminine” is perceived as inferior, devalued, and amenable to be attacked – as a relevant transmission mechanism in how ELMAs like Trump may connect with public opinion by systematically investigating the interplay

Advises caution with DFA

Editor, Gettysburg Times,

Although denying affiliation with the slowly dying national DFA organization, founded by “Screaming Howard Dean”, the Gettysburg DFA chapter’s op-eds and Letters to the Editor (LTEs) in the “Gettysburg Times” have become the prolific voice of local progressives. The various “task forces” of the organization publish regular op-eds in the “Times” as well as frequent individual following up LTEs expanding their positions. If names like Leon Reed, Jeff Colvin, Tony McNevin and Jeanne Duffy are familiar to readers it is most likely that you have read their published opinions. Add Will Lane and Mark Berg (our local self-proclaimed “Proud Progressive”) to the mix and you have a veritable power house of progressive ideology in Adams County.

I have taken exception to a number of their positions in the past because, in my opinion, they were (and continue to be) so political that the “Times” should consider many of them as political advertising and seek payment for their publication. DFA has tactfully disagreed and I respect the argument supporting free access.

DFA’s well organized efforts to undermine local less-progressive groups and individual opinions have become routine. I offer one such recent example: I am neither a climate expert

nor a climate-change denier but Jeff Colvin’s recent op-ed on climate change is an example of DFA self-aggrandizing, where the writer insists that opposition writers who have not presented supporting evidence from sources with a record of publication in peer-reviewed science journals are presenting unproven or false information. Mr. Colvin may be a research physicist but offers little/no evidence that his identification of multiple fallacious opinions can be supported by his own peer-reviewed expertise in the field of climate science. We should expect to see such information since he seems to require it of others. Perhaps that evidence is out there but having worked in the physics department of a well-known educational institution, I have had the privilege of working with a number of research PhDs who would freely admit that they have no “peer-reviewed” expertise in climate science.

I hope readers do some due-diligence when evaluating DFA sponsored articles and any others that criticize the opinions or positions of groups or individuals. The Gettysburg DFA has a publishing agenda that is often based upon political opinions that lack published scientific peer-reviewed support. I advise reader caution.

*Chuck Stump,
Gettysburg*

Infographic: Beyond Fake News – 10 Types of Misleading News – Seventeen Languages

Infographics



BEYOND 'FAKE NEWS'

10 TYPES OF MISLEADING NEWS

<p>propaganda</p>  <ul style="list-style-type: none"> adopted by governments, corporations and non-profits to manage attitudes, values and knowledge appeals to emotions can be beneficial or harmful 	<p>partisan</p>  <ul style="list-style-type: none"> ideological and includes interpretation of facts but may claim to be impartial privileges facts that conform to the narrative whilst forgoing others emotional and passionate language 	<p>IMPACT</p> <ul style="list-style-type: none"> neutral low medium high <p>MOTIVATION</p> <ul style="list-style-type: none"> money politics/power humour/fun passion (mis)inform
<p>clickbait</p>  <ul style="list-style-type: none"> eye catching, sensational headlines designed to distract often misleading and content may not reflect headline drives ad revenue 	<p>conspiracy theory</p>  <ul style="list-style-type: none"> tries to explain simply complex realities as response to fear or uncertainty not falsifiable and evidence that refutes the conspiracy is regarded as further proof of the conspiracy rejects experts and authority 	
<p>sponsored content</p>  <ul style="list-style-type: none"> advertising made to look like editorial potential conflict of interest for genuine news organisations consumers might not identify content as advertising if it is not clearly labeled 	<p>pseudoscience</p>  <ul style="list-style-type: none"> purveyors of greenwashing, miracle cures, anti-vaccination and climate change denial misrepresents real scientific studies with exaggerated or false claims often contradicts experts 	
<p>satire and hoax</p>  <ul style="list-style-type: none"> social commentary or humour varies widely in quality and intended meaning may not be apparent can embarrass people who confuse the content as true 	<p>misinformation</p>  <ul style="list-style-type: none"> includes a mix of factual, false or partly-false content intention can be to inform but author may not be aware the content is false false attributions, doctored content and misleading headlines 	
<p>error</p>  <ul style="list-style-type: none"> established news organisations sometimes make mistakes mistakes can hurt the brand, offend or result in litigation reputable orgs publish apologies 	<p>bogus</p>  <ul style="list-style-type: none"> entirely fabricated content spread intentionally to disinform guerrilla marketing tactics; bots, comments and counterfeit branding motivated by ad revenue, political influence or both 	

DIG DEEPER...

<p>false attribution</p> <p>authentic images, video or quotes are attributed to the wrong events or person</p>	<p>misleading</p> <p>content does not represent what the headline and captions suggest</p>
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eavi.eu/beyond-fake-news-10-types-misleading-info





Americans experience a false social reality by underestimating popular climate policy support by nearly half

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 Check for updates

Gregg Sparkman¹ ✉, Nathan Geiger² & Elke U. Weber³ 

Pluralistic ignorance—a shared misperception of how others think or behave—poses a challenge to collective action on problems like climate change. Using a representative sample of Americans ($N = 6119$), we examine whether Americans accurately perceive national concern about climate change and support for mitigating policies. We find a form of pluralistic ignorance that we describe as a *false social reality*: a near universal perception of public opinion that is the opposite of true public sentiment. Specifically, 80–90% of Americans underestimate the prevalence of support for major climate change mitigation policies and climate concern. While 66–80% Americans support these policies, Americans estimate the prevalence to only be between 37–43% on average.

Climate credits for farming
rest on shaky ground p. 369

Repair of blood stem cells using
mRNA therapy pp. 378 & 436

Strong interactions make
Hall response universal p. 427

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ON THE COVER

This artwork depicts social media users that are engaged (and often enraged) from the “left” (liberals, blue) and the “right” (conservatives, red) perched on Meta’s logo. Social media algorithms personalize users’ online experiences, recommending engaging content that will interest them and possibly spark outrage. They are siloed and face away from each



other because the architecture of platforms may facilitate echo chambers. See the special section beginning on page 386. *Illustration: Stephan Schmitz/Folioart*

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SPECIAL ISSUE

WIRED TO SPLIT

How Meta’s algorithms affected the 2020 US presidential election

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FLICC

Shockwavelike Behavior across Social Media

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Online communities featuring “anti-X” hate and extremism, somehow thrive online despite moderator pressure. We present a first-principles theory of their dynamics, which accounts for the fact that the online population comprises diverse individuals and evolves in time. The resulting equation represents a novel generalization of nonlinear fluid physics and explains the observed behavior across scales. Its shockwave-like solutions explain how, why, and when such activity rises from “out-of-nowhere,” and show how it can be delayed, reshaped, and even prevented by adjusting the online collective chemistry. This theory and findings should also be applicable to anti-X activity in next-generation ecosystems featuring blockchain platforms and Metaverses.

DOI: [10.1103/PhysRevLett.130.237401](https://doi.org/10.1103/PhysRevLett.130.237401)

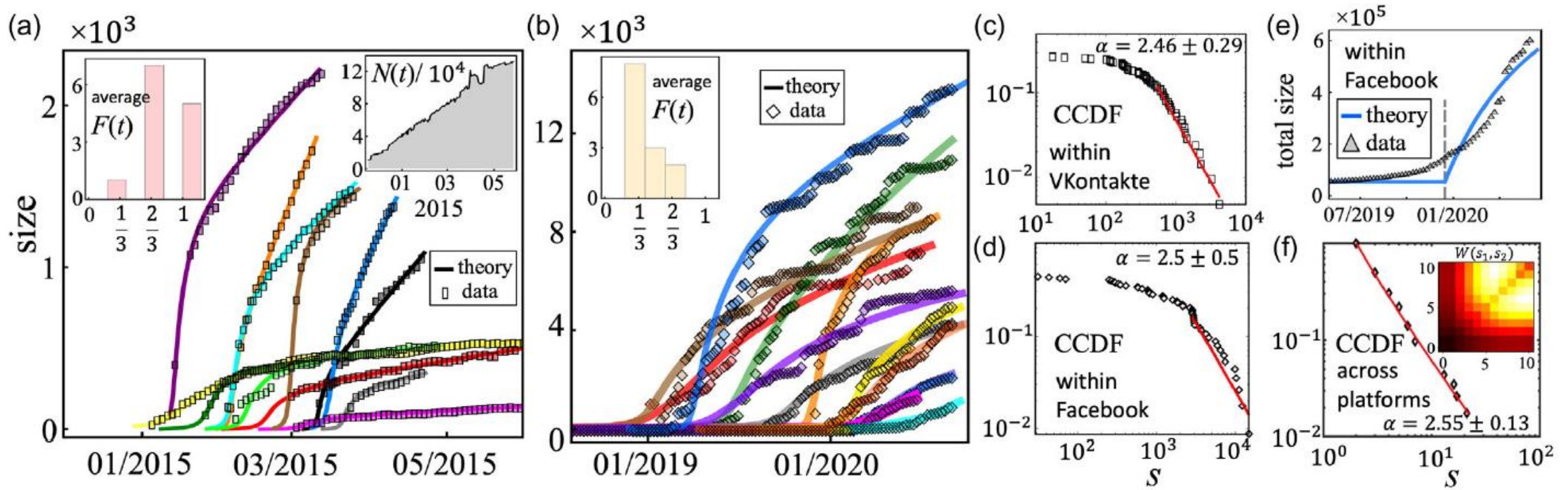


FIG. 2. Empirical data (symbols) and Eq. (2) theory predictions (lines) for in-built anti-X communities within and across platforms. (a) Size (i.e., number of members) of foreign anti-U.S. (jihadi) communities on VKontakte. (b) Size of domestic anti-U.S. government (pro-civil war) communities on Facebook. Insets: changing population size; time-averaged $F(t)$ which suggests that (b) reflects a heterophily fusion mechanism more than (a). (c) and (d) Complementary cumulative distribution (CCDF) of individual community sizes s from (a) and (b). (e) Evolution of total size of all communities from (b). (f) CCDF at a higher scale, i.e., sizes of clusters of interlinked communities. Inset: empirically inferred interaction kernel $W(s_1, s_2)$ obtained from data across all platforms; axes s_1 and s_2 are sizes of interacting aggregates.

AI-Generated Propaganda Is Just as Persuasive as the Real Thing, Worrying Study Finds

Propaganda from popular AI tools “could blend into online information environments on par with...existing foreign covert propaganda campaigns.”



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CURRENCY

The timeliness of the information

- When was the information published or posted?
- Has the information been revised or updated?
- Does your topic require current information, or will older sources work as well?
- Are the links functional?



Another thing to consider - does the website's copyright date match the content's currency? Or is it just a standard range?

ACCURACY

The reliability, truthfulness and correctness of the content

- Where does the information come from?
- Is the information supported by evidence?
- Has the information been reviewed or refereed?
- Can you verify any of the information in another source or from personal knowledge?
- Does the language or tone seem unbiased and free of emotion?
- Are there spelling, grammar or typographical errors?



RELEVANCE

The importance of the information for your needs

- Does the information relate to your topic or answer your question?
- Who is the intended audience?
- Is the information at an appropriate level (i.e. not too elementary or advanced for your needs)?
- Have you looked at a variety of sources before determining this is one you will use?



PURPOSE

The reason the information exists

- What is the purpose of the information? Is it to inform, teach, sell, entertain or persuade?
- Do the authors/sponsors make their intentions or purpose clear?
- Is the information fact, opinion or propaganda?
- Does the point of view appear objective and impartial?
- Are there political, ideological, cultural, religious, institutional or personal biases?



Note - to help answer Authority and Purpose questions, check out a website's **About** page.

AUTHORITY

The source of the information

- Who is the author/publisher/source/sponsor?
- What are the author's credentials or organizational affiliations?
- Is the author qualified to write on the topic?
- Is there contact information, such as a publisher or email address?
- Does the URL reveal anything about the author or source?



Note - to help answer Authority and Purpose questions, check out a website's **About** page.

Other Evaluation Methods

- **RADAR**
Rationale, Authority, Date, Accuracy, Relevance
- **SIFT**
Stop; Investigate the Source; Find Better Coverage; Trace Claims, Quotes and Media to the Original Context
- **5Ws**
Ask the 5W questions (Who, What, When, Where, Why) to help determine if a sources is reliable, credible, and appropriate for your

FLICC: Fake Experts, Logical Fallacies, Impossible Expectations, Cherry Picking, and Conspiracy Theories

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