Challenging online disinformation

- Dr David Robert Grimes
- @drg1985
- www.davidrobertgrimes.com

Disinformation is rife online….

The spreading of misinformation online

Michela Del Vicario[a], Alessandro Bessi[b], Fabiana Zollo[a], Fabio Petroni[c], Antonio Scala[a,d], Guido Caldarelli[a,d], H. Eugene Stanley[e], and Walter Quattrociocchi[a,1]

[a]Laboratory of Computational Social Science, Networks Department, IMT Alti Studi Lucca, 55100 Lucca, Italy; [b]IUSS Institute for Advanced Study, 27100 Pavia, Italy; [c]Sapienza University, 00185 Rome, Italy; [d]ISC-CNR Uos "Sapienza," 00185 Rome, Italy; and [e]Boston University, Boston, MA 02115

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RESEARCH ARTICLE

On the Viability of Conspiratorial Beliefs

David Robert Grimes*

University of Oxford, Old Road Campus Research Building, Off Roosevelt Drive, Oxford OX3 7DQ, United Kingdom

* davidrobert.grimes@wolfson.ox.ac.uk

Abstract

Conspiratorial ideation is the tendency of individuals to believe that events and power relations are secretly manipulated by certain clandestine groups and organisations. Many of these ostensibly explanatory conjectures are non-falsifiable, lacking in evidence or demonstrably false, yet public acceptance remains high. Efforts to convince the general public of the validity of medical and scientific findings can be hampered by such narratives, which can create the impression of doubt or disagreement in areas where the science is well established. Conversely, historical examples of exposed conspiracies do exist and it may be difficult for people to differentiate between reasonable and dubious assertions. In this work, we establish a simple mathematical model for conspiracies involving multiple actors with time, which yields failure probability for any given conspiracy. Parameters for the model are estimated from literature examples of known scandals, and the factors influencing conspiracy success and failure are explored. The model is also used to estimate the likelihood of claims from some commonly-held conspiratorial beliefs; these are namely that the moon-landings were faked, climate-change is a hoax, vaccination is dangerous and that a cure for cancer is being suppressed by vested interests. Simulations of these claims predict that intrinsic failure would be imminent even with the most generous estimates for the secret-keeping ability of active participants—the results of this model suggest that large conspiracies (≥1000 agents) quickly become untenable and prone to failure. The theory presented here might be useful in counteracting the potentially deleterious consequences of bogus and anti-science narratives, and examining the hypothetical conditions under which sustainable conspiracy might be possible.

SOCIAL SCIENCE

The spread of true and false news online

Soroush Vosoughi,[1] Deb Roy,[1] Sinan Aral[2]*

We investigated the differential diffusion of all of the verified true and false news stories distributed on Twitter from 2006 to 2017. The data comprise ~126,000 stories tweeted by ~3 million people more than 4.5 million times. We classified news as true or false using information from six independent fact-checking organizations that exhibited 95 to 98% agreement on the classifications. Falsehood diffused significantly farther, faster, deeper, and more broadly than the truth in all categories of information, and the effects were more pronounced for false political news than for false news about terrorism, natural disasters, science, urban legends, or financial information. We found that false news was more novel than true news, which suggests that people were more likely to share novel information. Whereas false stories inspired fear, disgust, and surprise in replies, true stories inspired anticipation, sadness, joy, and trust. Contrary to conventional wisdom, robots accelerated the spread of true and false news at the same rate, implying that false news spreads more than the truth because humans, not robots, are more likely to spread it.


STOP 5G


COVID 19 IS A HOAX 5G IS THE KILLER


INFODEMIC


STOP

Challenging misinformation

- We know that doctors, scientists, and patient advocates can play a part in combatting disinformation
- But there are limitations to this - and consequences


Questioning qualifications
Questioning motivations
Shifting burden of Proof
Alleging Conspiracy
Cherrypicking / Quote-mining
Bypassing Gatekeepers
Straw-manning
Sockpuppets / Astroturfing
Violence / Intimidation
Celebrity Endorsement
Legal threats
Poisoning the well
Abuse / Threats
Vexatious complaints to employers
Vexatious complaints to professional bodies
Discreditation
Mispresentation
Dubious Amplification
Interpersonal Harassment
Malicious Complaints

Misrepresentation

Misrepresentation of scientific evidence/expertise		
Straw-manning	Misrepresenting scientific arguments to make them amenable to ridicule or attack, and to deflect or obscure evidence that undermines a particular narrative.	*'Mercury is toxic, yet scientists put it in vaccines!'*—This statement belies importance of dose and ignores the fact there is no evidence for harm from thimerosal in vaccines.
Cherry-picking/quote mining	Selective, manipulative filtering of scientific evidence or expert statements, taken out of context to undermine evidence base or promote a narrative.	'*THC kills cancer, but doctors don't want you to know about cannabis cures.*'—THC can kill cells in a Petri dish, but killing plated cells is entirely different from treating human cancer.
Shifting the burden of proof	Insisting the onus is on scientists to 'disprove' claims rather than offering any evidence or rationale for assertions made.	*'GMOs are toxic, and scientists should prove us wrong.'*—This assertion is untrue, and onus lies on those making the claim to proffer evidence for it.

Discreditation

Discreditation attempts		
Questioning qualification	Casting doubt on one's ability to question claims at hand. Typically, ostensible scepticism is not extended to claims supportive of the narrative.	*'This patient advocate isn't an expert, so they can't say this vaccine is safe!'*—One does not need to be an expert immunologist in this case to accurately reflect medical consensus.
Alleging vested interests	Claims that the speaker is compromised due to some apparent conflict of interest or that experts are otherwise lacking impartiality.	'*Who's paying you to say this?*'—Unsubstantiated allegation to deflect from absence of evidence for a narrative or claim.
Asserting conspiracy theory	Allegations that the scientist, physician or patient advocate is part of some conspiracy to suppress the truth or spread false information, either as a pawn or an active player.	*'She's part of a pharma cover-up to suppress natural cancer cures!'*—Appeals to conspiracy theory function to distract from lack of evidence.

Dubious amplification

Dubious amplification of pseudoscientific narratives		
Media targeting	Targeting traditional or online media outlets to amplify dubious narratives, typically bypassing gatekeepers (science/health journalists, and so on) who would otherwise be more likely to spot pseudoscience.	Pitching dubious health claims to journalists as human interest stories—This approach was successfully used by antivaccine activists to push the discredited link between autism and the MMR vaccine between 1998 and 2000.
Astroturfing/sockpuppeting	Use of fake social media accounts/fictitious pressure groups to provide an illusion of a wider grassroots support for a particular narrative.	Example: Accounts which spring up once an initial antifact site is blocked but which include misinformation consistent with the originator's initial social media accounts.
Celebrity endorsement	Celebrities and influencers can have disproportionately large impact on the perception of public even in areas where they have no relevant expertise or knowledge.	There are numerous examples of this, especially in relation to antivaccine activism, including actors and models being cited for their purported knowledge of complex health issues.

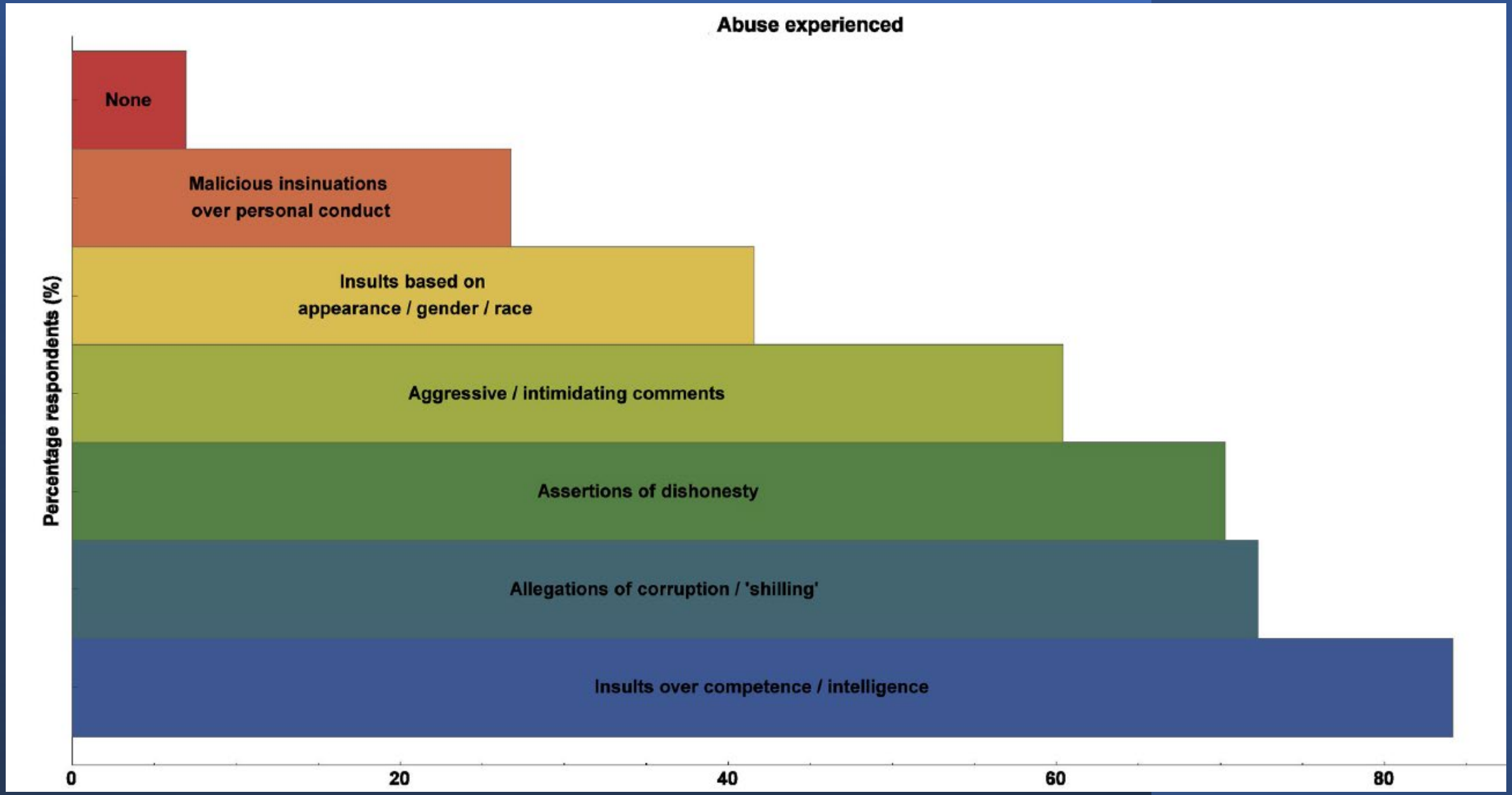
Malicious complaints

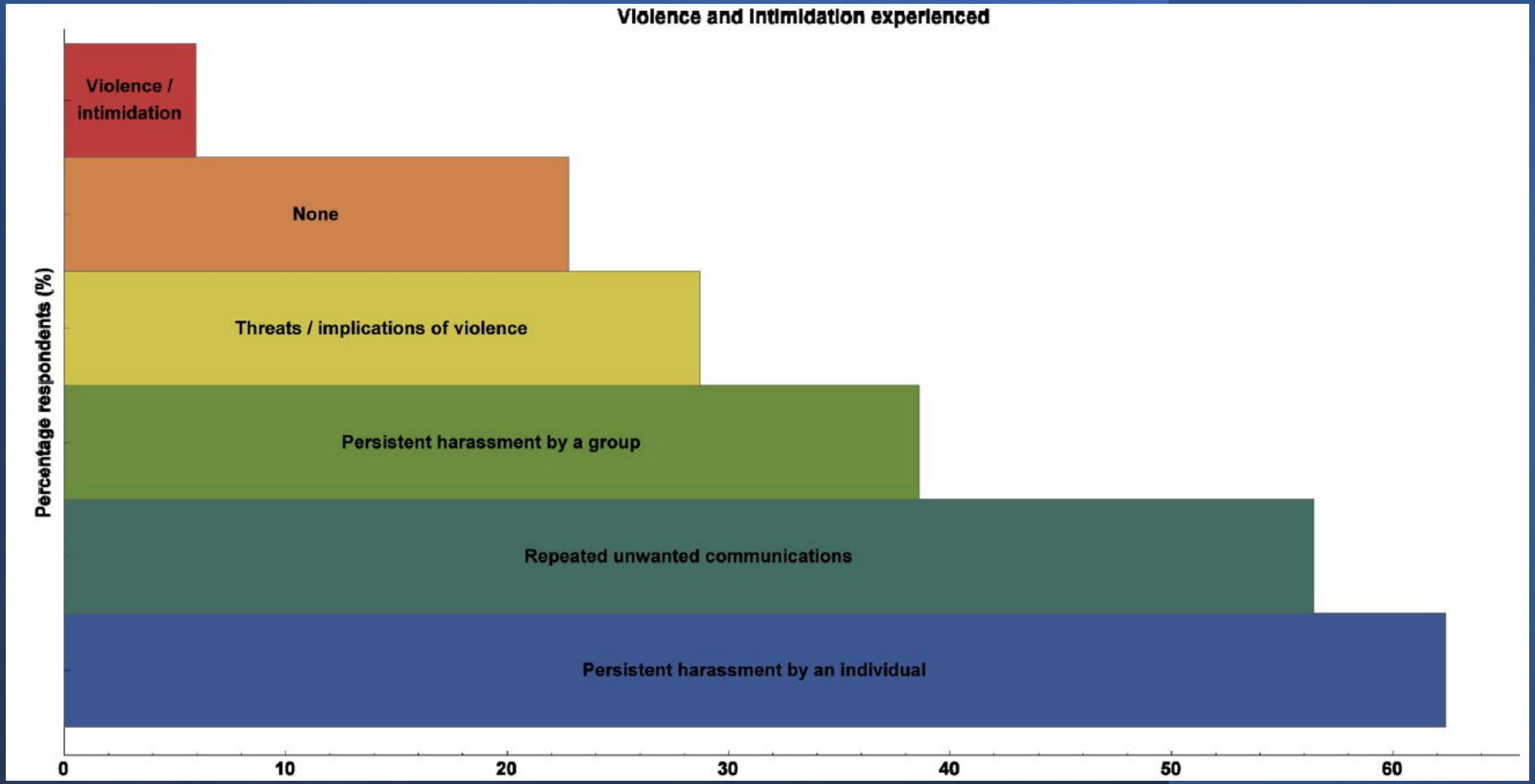
Malicious complaints/abuse of regulatory frameworks		
Poisoning the well/smear campaigns	The spreading of malicious claims regarding an individual's professional or personal conduct to undermine them or discourage others from engaging with them.	*'I've heard that doctor abuses patients.'*—Inflammatory slurs such as these are designed to discredit, and are not in any way substantiated, but calculated to invoke disgust or contempt.
Vexatious complaints to employers	Making calculated complaints to one's employer or threatening to do so in order to intimidate them into silence.	Exaggerated/misleading accounts of interactions with public advocates and demands to censure them, typically aimed at an individual's university or employer.
Vexatious complaints to regulatory bodies	Abusing procedures of professional bodies to target a researcher/medic who presents a challenge to a narrative. These may also include unwarranted freedom of information requests or vexatious parliamentary questions.	Registering complaints with a medical regulatory body against a doctor for their advocacy of evidence-based positions. Physicians especially vulnerable, as typically all complaints must be investigated, regardless of merit.

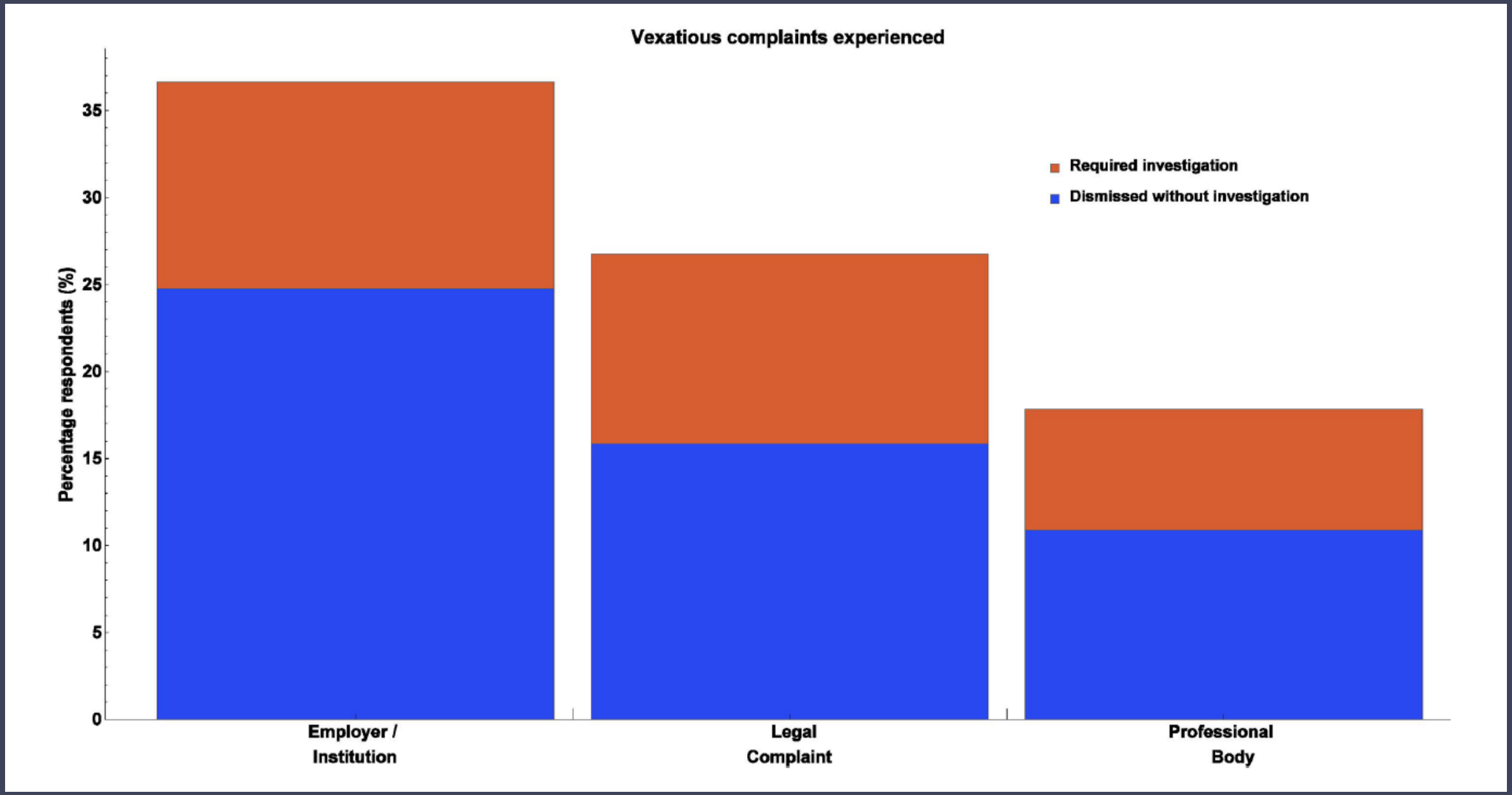
Intimidation

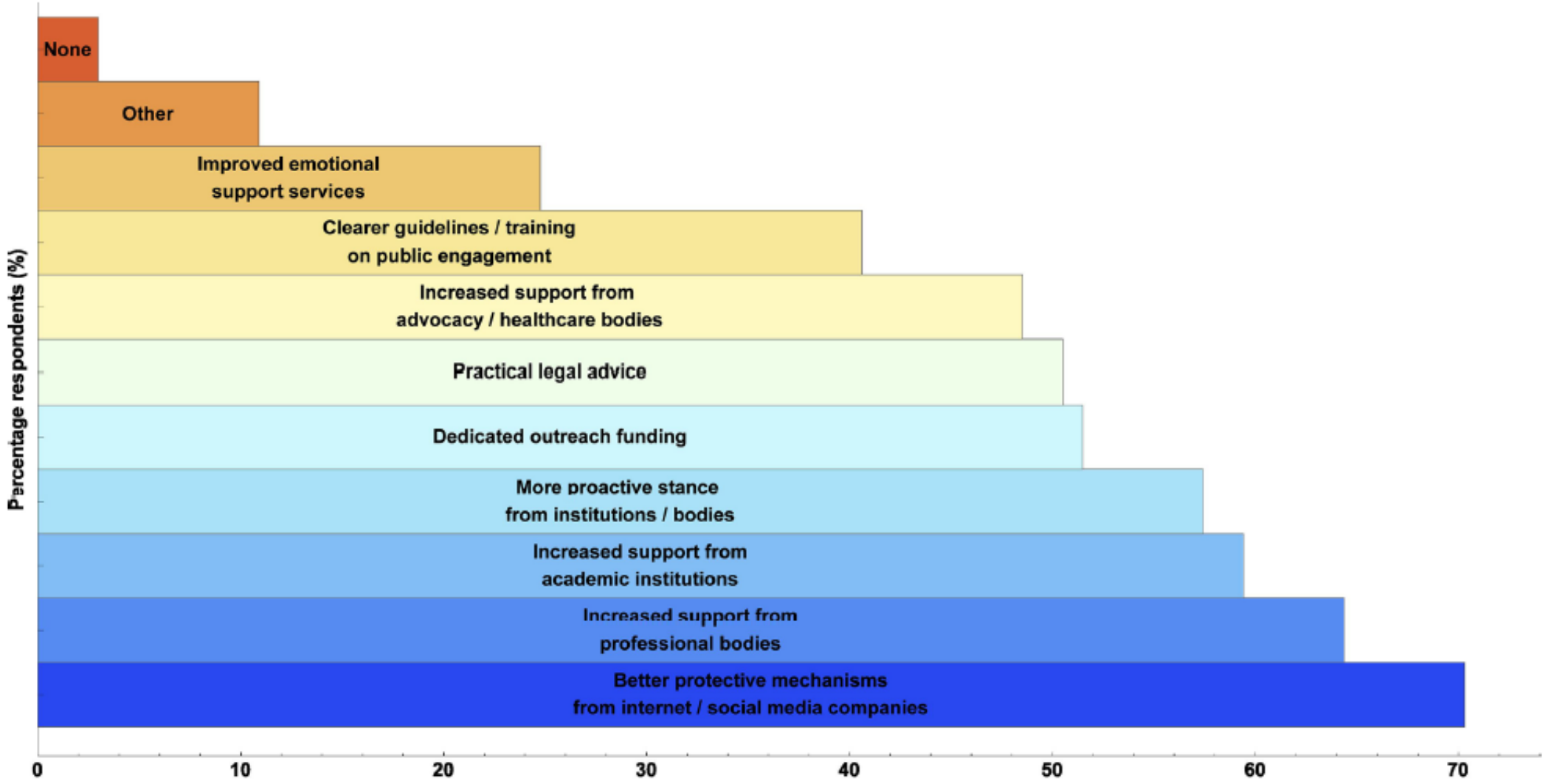
Intimidation

Harassment/abuse	Harassment can take many forms, and personal abuse is perhaps most common. Threats (implied and direct) are often employed.	Abusive language made publicly or in direct messages, and posting of private contact details, phone numbers, addresses, and so on.
Legal threats	Legal notices and mechanisms can also be used to silence researchers questioning a narrative, from cease and desist notices to defamation claims.	Threatening to bring an advocate to court for alleged defamation, also used judiciously to limit independent investigation on pseudoscientific narratives.
Physical intimidation	Implicit or explicit threats of physical violence are an unfortunately potent method of intimidating scientists into silence. This includes threats of physical violence or rape (the latter usually directed at female discussants).	Stalking of private abodes, explicit threats, or actions like spitting, and so on. There are instances of security being required for scientific meetings on publicly contentious subjects, due to implications of or threats of violence.


Abuse experienced
None
Malicious insinuations over personal conduct
Insults based on appearance / gender / race
Aggressive / intimidating comments
Assertions of dishonesty
Allegations of corruption / 'shilling'
Insults over competence / intelligence
Percentage respondents (%)
0
20
40
60
80


Violence and intimidation experienced
Violence / intimidation
None
Threats / implications of violence
Persistent harassment by a group
Repeated unwanted communications
Persistent harassment by an individual
Percentage respondents (%)
0
10
20
30
40
50
60


Vexatious complaints experienced
Percentage respondents (%)
0
5
10
15
20
25
30
35
Required investigation
Dismissed without investigation
Employer / Institution
Legal Complaint
Professional Body


None
Other
Improved emotional support services
Clearer guidelines / training on public engagement
Increased support from advocacy / healthcare bodies
Practical legal advice
Dedicated outreach funding
More proactive stance from institutions / bodies
Increased support from academic institutions
Increased support from professional bodies
Better protective mechanisms from internet / social media companies
Percentage respondents (%)
0
10
20
30
40
50
60
70

Prevention better than cure!

Science & Society

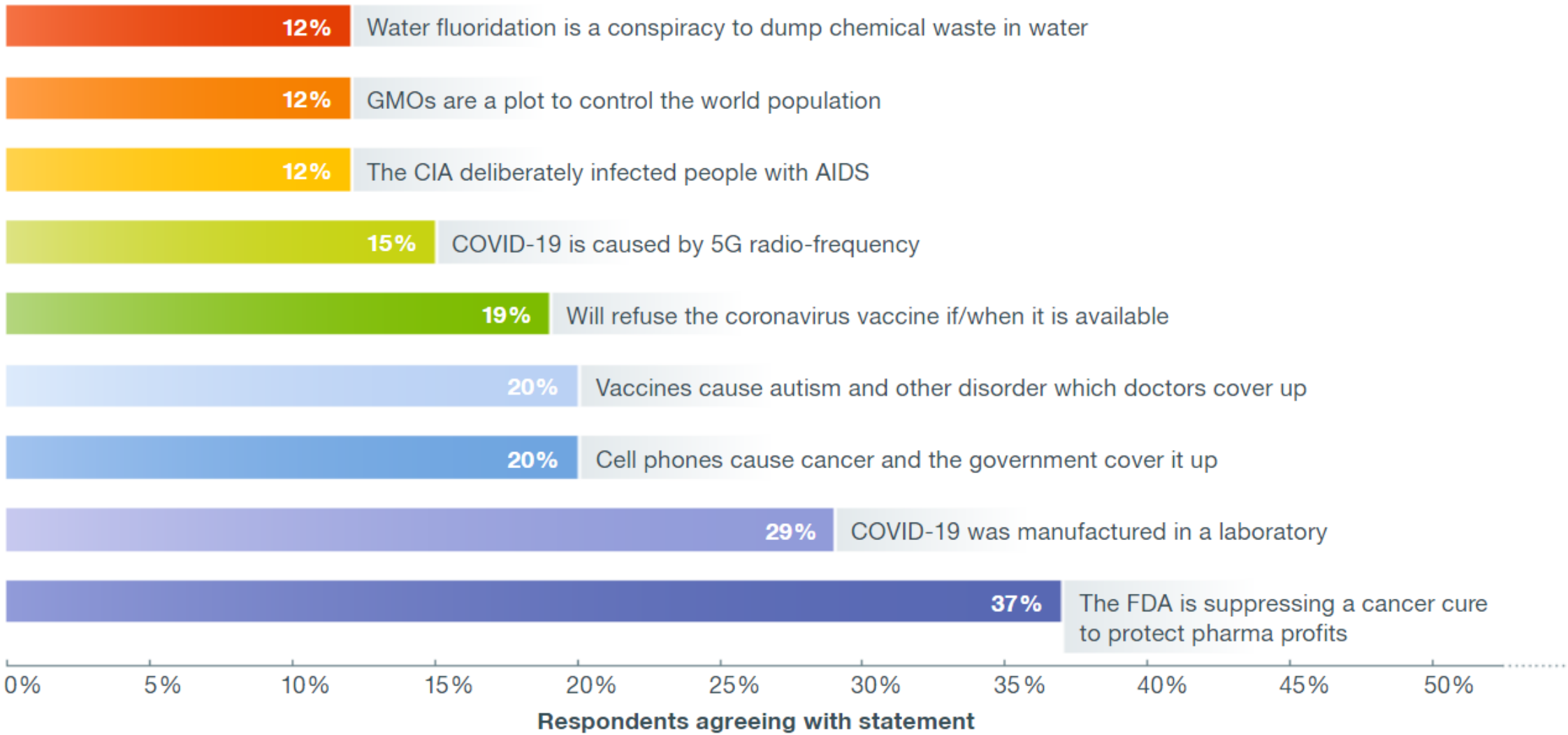
OPEN ACCESS

EMBO reports

Health disinformation & social media

The crucial role of information hygiene in mitigating conspiracy theory and infodemics

David Robert Grimes[1,2,*]


12% Water fluoridation is a conspiracy to dump chemical waste in water
12% GMOs are a plot to control the world population
12% The CIA deliberately infected people with AIDS
15% COVID-19 is caused by 5G radio-frequency
19% Will refuse the coronavirus vaccine if/when it is available
20% Vaccines cause autism and other disorder which doctors cover up
20% Cell phones cause cancer and the government cover it up
29% COVID-19 was manufactured in a laboratory
37% The FDA is suppressing a cancer cure to protect pharma profits
0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50%
Respondents agreeing with statement

Sometimes, confusion is part of the issue….

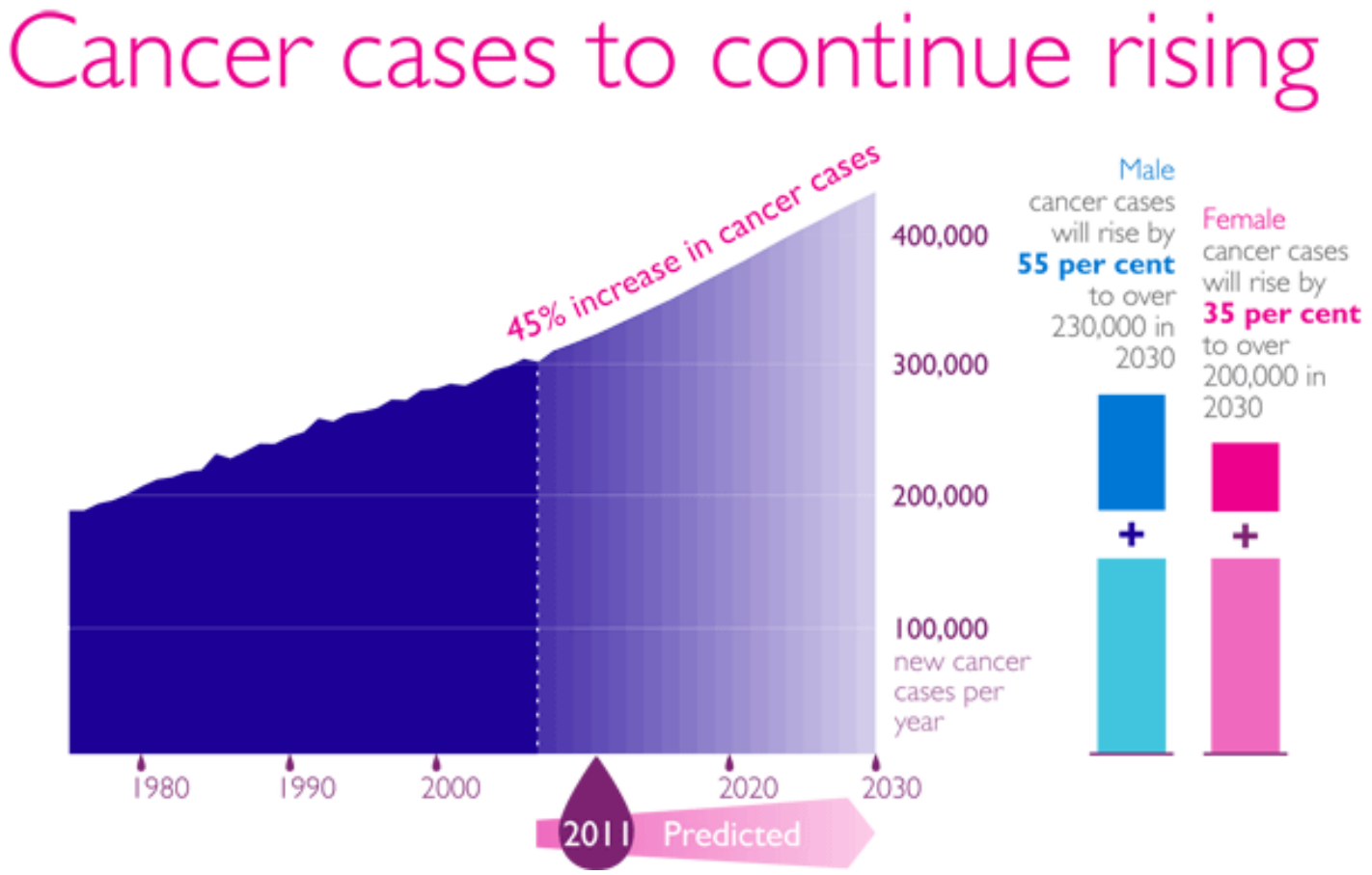
Premise 1: All radio-frequency radiation is electromagnetic radiation.

Premise 2: Some electromagnetic radiation can cause cancer.

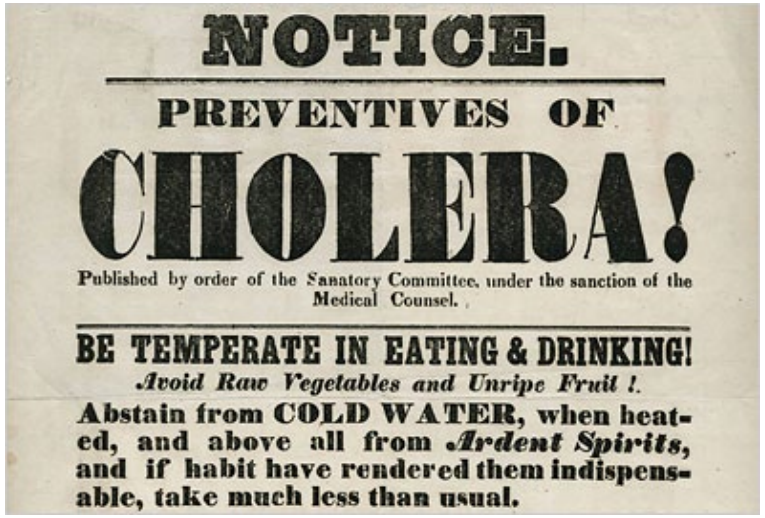
Conclusion: Thus, radio-frequency radiation causes cancer.

A fact out of context can lead up to error..

Cancer rates are going up! So something must be making the world more carcinogenic, right?!



….MAINLY BECAUSE WE HAVE LESS OF THIS…



Sometimes, classic “disinformation” is the issue…

CHILD DEVELOPMENT

Child Development, January/February 2018, Volume 89, Number 1, Pages 141–147

See C. Sage and E. Burgio, “Genetics, epigenetics and electromagnetic fields: How wireless technologies may affect childhood development, autism and ADHD”, https://doi.org/10.1111/cdev.12824

Distinguishing Polemic From Commentary in Science: Some Guidelines Illustrated With the Case of Sage and Burgio (2017)

David Robert Grimes
Queens University Belfast and University of Oxford

Dorothy V. M. Bishop
University of Oxford

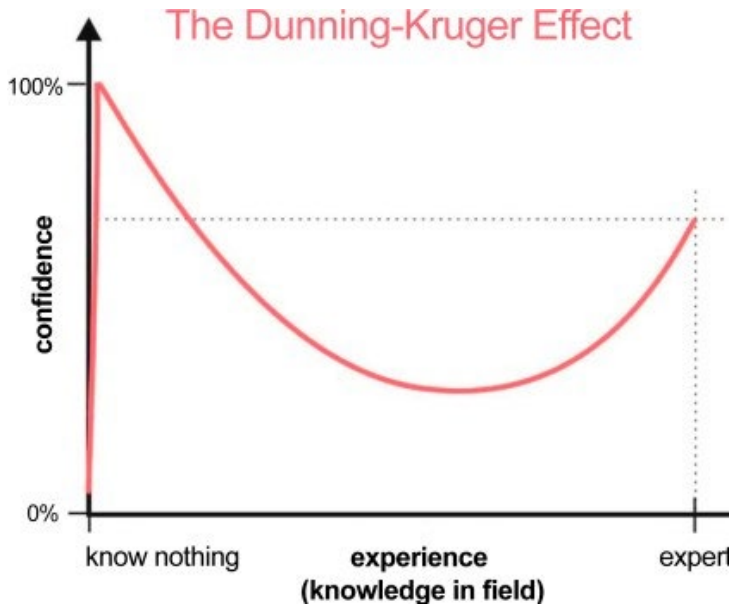
Dead and alive: Beliefs in contradictory conspiracy theories.

Citation

Wood, M. J., Douglas, K. M., & Sutton, R. M. (2012). Dead and alive: Beliefs in contradictory conspiracy theories. *Social Psychological and Personality Science, 3*(6), 767-773.
http://dx.doi.org/10.1177/1948550611434786

Abstract

Conspiracy theories can form a monological belief system: A self-sustaining worldview comprised of a network of mutually supportive beliefs. The present research shows that even mutually incompatible conspiracy theories are positively correlated in endorsement. In Study 1 (*n* = 137), the more participants believed that Princess Diana faked her own death, the more they believed that she was murdered. In Study 2 (*n* = 102), the more participants believed that Osama Bin Laden was already dead when U.S. special forces raided his compound in Pakistan, the more they believed he is still alive. Hierarchical regression models showed that mutually incompatible conspiracy theories are positively associated because both are associated with the view that the authorities are engaged in a cover-up (Study 2). The monological nature of conspiracy belief appears to be driven not by conspiracy theories directly supporting one another but by broader beliefs supporting conspiracy theories in general. (PsycINFO Database Record (c) 2016 APA, all rights reserved)



Why do people perpetuate these claims?


EGO

Thoughts

- Combatting myths is difficult and there are consequences for those who engage it in
- Picking one's battles is critical – not all beliefs are worth challenging, diminishing returns a problem
- PREVENTION of exposure is much better than trying to cure exposure to disinformation – it is better than people are aware of the extent of disinformation, and immunised against it
- Social media companies have long shirked their responsibility on this, as they view all engagement as profitable. This is to our detriment.