



Security Nexus Perspectives

WHY WE BELIEVE: DISINFORMATION, MISINFORMATION, AND NEUROSCIENCE

By Ethan Allen*

Abstract:

Facilitated by social media, misinformation and disinformation spreads quickly and widely through democratic states around the world. Particularly in times of crises, such misleading and inaccurate information can have devastating impacts. The global COVID-19 pandemic has spawned an outpouring of incorrect claims, some based on simple ignorance, and others promoted purposefully by agents with their own agendas. This faulty information harms individuals' personal health and divides and destabilizes societies, at a time when it is clearly in the best interests of humanity to protect and promote individuals' and groups' health, and when societies are particularly vulnerable to division and destabilization. Given these clear damages of misinformation and disinformation, why they flourish, especially now? What cognitive or emotional factors render people not just susceptible to such untruths, but engender their active proliferation of hazardous advice? What can we do, as individuals and as societies, to counteract these dangerous trends that afflict us all?

Background: Social Media, Crises, and Belief Systems

More than ever before, social media shapes public perceptions. Social media is an increasing force in how people learn about the world, and, with the disappearance of so many newspapers, a major source of news for many.¹ As social media vehicles in democracies enable individuals to promote their own idiosyncratic ideas, perceptions, and perspectives, seemingly with little or no fact-checking, it is not surprising that social media currently propagate much misinformation (that is, accidentally incorrect) and disinformation (deliberately misleading).^{2, 3}

* Dr. Ethan Allen is a professor at the Daniel K. Inouye Asia-Pacific Center for Security Studies (DKI APCSS) in Honolulu, USA. The views expressed in this article are the author's alone, and do not necessarily reflect the official position of the DKI APCSS or the United States Government.

Social media spreading of misinformation and disinformation appears to rise during crises, such as the current COVID-19 pandemic.⁴ Several psychological and emotional factors underlie this effective and efficient spread of mis- and disinformation, particularly during times of stress.

First, being presented with a variety of conflicting narratives offers individuals a choice of beliefs. Rather than having a single source of factual information that they, and the families, friends, and neighbors all view/read/hear and trust, the proliferation of social media platforms in democracies offers people a multitude of world views from which to select. Particularly during times of stress, people will believe narratives that align with their own pre-existing world views; they tend to avoid the discomfort of cognitive dissonance by ignoring those facts that would force them to reassess their beliefs. This is the well-established and powerful mechanism of ‘confirmation bias’ that strongly predisposes individuals to attend to and accept information that confirms or aligns with their pre-existing beliefs, and to ignore or downplay information that conflicts with these already established world views.⁵

Second, people tend to seek ‘big’ causes for big events. They see incidents that have major impacts on their lives as so important that they will not attribute them readily to a random or invisible cause, but rather seek a larger, more cosmic reason. Conspiracy theories fit neatly into this mindset, telling people that it is not chance or some minute virus that is putting them or their loved ones at death’s doorstep, or ruining their nation’s economy, but rather the machinations of malicious agents. In earlier eras, pandemics were widely seen as divine interventions, the gods’ displeasure with peoples’ sins.

Third, based on our species’ evolutionary history, we are inclined and primed to pay more attention to bad or potentially threatening news than to neutral or good news. Our ancestors who ignored or downplayed threats did not live to reproduce, while their cautious, threat-attentive counterparts survived and passed their genes along. Particularly in the case of disinformation, the widely circulating, conspiracy-theory-laden narratives typically present dire threats to individuals’ safety and security. Without conscious thought, individuals will give undue weight and credence to such pronouncements.

In concert, these and other similar cognitive and affective mechanisms predispose people to pay excessive attention to and too readily believe in plots, collusions, and schemes as underlying causes for events, rather than to accept more mundane explanations. In the case of the COVID-19 pandemic, the evidence-supported but unexciting explanation of germs spread through our normal social interactions with others is ignored by many in favor of believing in Machiavellian intrigues organized by those with great wealth and/or power.

Dangers of Misinformation and Disinformation

Particularly in a public health crisis such as we’re now experiencing, misinformation and disinformation can be deadly. ‘Snake oil’ cures and other such ‘treatments’ unsupported by scientific evidence pose grave threats to individuals’ health and lives. Avoiding sound medical treatment not only puts the affected individual at risk but, in the case of communicable diseases, endangers all those with whom she or he comes in contact. In a similar vein, inaccurate information about natural disasters such as storms, floods, droughts, or other extreme weather events can be life-threatening to individuals and communities, while thwarting effective responses to such crises.

Moreover, such misinformation, and, to an even greater extent, disinformation, both weakens public trust in science and poses a threat to societal stability.⁶ As noted above, we live in an age where we are daily confronted with conflicting narratives about reality. We no longer have a single (or small number of) trusted source(s) of factual information. We do not see, read, or hear the same news that our families, friends, and neighbors may consume. Instead, each individual is offered a unique smorgasbord of perspectives on any given event.

Critically, the algorithms that underlie social media platforms exacerbate the different realities that we each see.² Social media sites are designed to track what their users each individually see, click on, and listen to, and then to provide them with more information of a similar nature; this is their core, and the basis on which they create profit.⁷ By the way in which they were designed, these algorithms thus tend to create 'bubbles' around people, wherein they see and hear only information similar to that which they earlier viewed or listened to, and to close off opposing viewpoints (*cf.*, confirmation bias, noted above). This perpetuates a vicious circle of individuals receiving 'news' from an ever-narrowing, and ever-more-extreme set of sources.

By shutting off differing perspectives from individuals' inputs, these algorithms tend to drive people towards extreme viewpoints, wherein they only see and hear more information that aligns with what they've encountered earlier. The social media platforms will not tend to bring up and display information that offers an opposing idea, a different interpretation, or an antagonistic consideration. Especially in the political realm, the center, that place where civilized dialog about opposing viewpoints can be reasonably and rationally held, is hollowed out. We are left with populations who are inundated with their own choice of propaganda. Our current social media exacerbate the differences and divides between people, and minimize the commonalities and shared viewpoints.

Disinformation Promoters

This sort of division and fracture within democratic cultures is precisely the desired outcome of authoritarian regimes. These latter tend to control information, allowing their citizens to see and hear only that viewpoint that the governing authority wishes, while quickly and firmly silencing any and all opposing views. Through this approach, they attempt to keep the perspectives of their populaces aligned with those of the government; if people hear, read, and see only a single interpretation of world events, they will not suffer the divisiveness and splintering that open social media promote.

At the same time, these authoritarian regimes tend to promote and foster just these dissents and differences within their democratic competitors. Leaders of authoritarian states wish to see democracies fragmented and suffering from internal splits and splintering, as this weakens the democratic states' capacities. For this reason, authoritarian states have organized campaigns to spread disinformation among their democratic rivals; social media offer an inexpensive tool to wage informational warfare, while avoiding the costs of conventional military conflict.⁸

Beyond authoritarian regimes, other groups also purposely spread inaccurate information about COVID-19 (and other topics). Among these, politically far-right and white supremacist groups have used the coronavirus pandemic as yet one more vehicle to "... amplify false, conspiratorial, and hateful narratives."²

Similarly to foreign totalitarian systems, such malicious domestic agents seek to drive wedges between segments of our democratic societies.

Countering Misinformation and Disinformation

Understanding the various psychological processes noted above that predispose people to accept misinformation and disinformation can, in and of itself, be a powerful force for counteracting their acceptance.⁹ The tools and processes of science offer some of the best, most effective methods to counteract both misinformation and disinformation. On a personal, individual level, adopting a scientific approach to curating information, whether from social media or other sources, can reduce the psychological and emotional tendencies noted above that render us susceptible to embracing false claims.

Science emphasizes the qualities of openness, honesty, and skepticism, along with the concepts of repeatability, careful gathering and use of data, and refuting of hypotheses. If individuals employ these sorts of evidence-based thinking – questioning the source of the information, considering the likelihood that the information is true, examining alternatives to the information, exploring other sources to corroborate or refute the information, taking into account the motivations of those disseminating the information, etc. – they will be much less likely to unwittingly fall prey to both misinformation and disinformation.

While many people have been taught little or no authentic science, developing this sort of skeptical, evidence-based approach to curating information does not require extensive science education. Simple, thoughtful consideration of the source of the information, how reliable that source is, and why the source is disseminating it rather than a naïve, unquestioning belief or acceptance is a good place to start. Seeking to compare the information with that from other sources, ideally from a broad range of sources known to be reliable, can help to identify dubious claims.

On the larger societal level, too, science is useful in evaluating information. Science is self-correcting in that scientists are constantly attempting to disprove hypotheses, and thus unreliable claims and unconfirmed assertions are usually quickly exposed. At the same time, the mechanisms of science are inherently, collaborative; scientists work together to verify or falsify claims. The result of a single experiment is never considered definitive; through other scientists' attempts to replicate and/or build on it, science builds its resiliency. These same sorts of approaches could and should be adopted by social media platforms.

But building science literacy, whether across the broader public or among social media platform managers, is difficult. Programs to enhance scientific literacy through the public schools have been tried repeatedly for decades, with little evidence of impact. Public trust in science, while having remained relatively stable for decades, appears to have declined among segments of political leaders, as indicated by the numbers who have ignored advice from medical experts about the COVID-19 pandemic. Large-scale raising of scientific literacy through K-12 education is also inherently a long-term process, whose impacts won't appear for years.

The idea of infusing scientific thinking/processes (i.e., science literacy) into social media platforms is worth exploring. If those who curate the postings and spread of information through these vehicles could

recognize blatantly false and misleading information, and either eliminate it or flag it as such, at least some people would be less likely to believe and spread it. If a similar curation process were applied to identify, expose, and highlight active disinformation campaigns, and again to either expunge such content or clearly label it as being propaganda, those who watch, read, or listen to such information would at least be alerted to the fact that it is being disseminated under false pretenses.

A key question is how to incentivize social media to use scientific thinking and evidence-based processes in their curation. Certainly, in democracies that value free expression, the use of censorship is problematical. It is all good and well to propose fines or other punishments for platforms that post and promote the spread of blatant misinformation or disinformation, but who gets to decide which posts fall into one or the other of those categories? When and where does the individual's right to express her/his opinion become tantamount to crying "fire!" in a crowded theater? Who decides when that line is crossed? Is public shaming and/or ridicule appropriate as a response to spreading falsehoods? Is it even feasible? Can a system of rewards for scientific rigor in public broadcasting be created?

One approach to such thorny issues might be through governmental partnerships with social media organizations. In some other arenas so-called public/private partnerships (PPPs) have proven effective. Such PPPs have proven their value in enabling effective responses to crises. In 2003, the rapid identification of SARS and the development of a vaccine was due in large part to international governmental and non-governmental collaboration.^{10, 11} Likewise, the systems of building, deploying, and collating and analyzing data from arrays of weather and climate forecasting facilities (including ground and sea-based sensors, airplanes, and satellites) have been the result of collaborations between governments and private industries on an international scale, and have led to significantly better, more accurate, and longer-term forecasts of climate trends and impending weather events.

Thus the idea of nurturing such partnerships among social media companies and governments is worth exploring. A variety of mechanisms are available to reduce the probability of spread of mis- and disinformation, including boosting the 'friction' (time/effort involved in disseminating messages), building the context (bracketing questionable/wrong information within accurate and correct information; indicating sources of information; etc.), increasing transparency of social media algorithms and practices, and enhancing ethical and consistent moderation of social media platforms.²

In the face of the current COVID-19 pandemic, and the massive misinformation and disinformation being spread about it, a concerted, coordinated 'whole of society' campaign must be mounted. Both to protect public health and to promote the reversal of the divisiveness that has been spawned in democratic societies, governments must work together internationally, and with the social media industry (and all who support it), to re-build trust in our journalistic, scientific, and governmental sources of information.

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References

- ¹ - Pew Research Center, October, 2017. "The Future of Truth and Misinformation Online." Retrieved 1 Sept, 2020, from <https://www.pewresearch.org/internet/2017/10/19/the-future-of-truth-and-misinformation-online/>
- ² - Erin Simpson and Adam Conner, 2020. "Fighting Coronavirus Misinformation and Disinformation: Preventive Product Recommendations for Social Media Platforms." Center for American Progress. Retrieved 11 Spt 2020 from <https://www.americanprogress.org/issues/technology-policy/reports/2020/08/18/488714/fighting-coronavirus-misinformation-disinformation/>
- ³ - Christina Nemr and William Gangware, 2019. "Weapons Of Mass Distraction: Foreign State-Sponsored Disinformation in the Digital Age." Park Advisors. Retrieved 1 Sept, 2020 from <https://www.state.gov/wp-content/uploads/2019/05/Weapons-of-Mass-Distraction-Foreign-State-Sponsored-Disinformation-in-the-Digital-Age.pdf>
- ⁴ - Daniel Allington, Bobby Duffy, Simon Wessely, and Nayana Dhavan, 2020. "Health-protective behaviour, social media usage and conspiracy belief during the COVID-19 public health emergency." *Psychological Medicine*, 09 June 2020. DOI: <https://doi.org/10.1017/S003329172000224X>
- ⁵ - Raymond S. Nickerson, 1998. "Confirmation bias: A ubiquitous phenomenon in many guises." *Review of General Psychology*, 2 (2): 175–220. DOI:10.1037/1089-2680.2.2.175
- ⁶ - H. Holden Thorp, 2020. "Persuasive words are not enough." *Science*, 368:6498, p. 1405..
- ⁷ - Hany Farid, 2020. "Disinformation Online and a Country in Crisis." Testimony: House Committee on Energy and Commerce. Retrieved 9 Sept, 2020 from <https://docs.house.gov/meetings/IF/IF17/20200624/110832/HHRG-116-IF17-Wstate-FaridH-20200624.pdf>
- ⁸ - Massimo Flore, Alexandra Balahur, Aldo Podavini, and Marco Verile, 2019. "Understanding Citizens' Vulnerabilities to Disinformation and Data-Driven Propaganda. Case Study: The 2018 Italian General Election." JRC Technical Reports; The European Commission. Retrieved 9 Sept. 2020 from https://publications.jrc.ec.europa.eu/repository/bitstream/JRC116009/understanding_citizens_vulnerabilities_to_disinformation.pdf
- ⁹ - Tali Sharot, 2017. *The Influential Mind: What the Brain Reveals about Our Power to Change Others*. London: Abacus
- ¹⁰ - Centers for Disease Control and Prevention, 2013. "CDC SARS Response Timeline." Retrieved 9 Sept 2020 from <https://www.cdc.gov/about/history/sars/timeline.htm>
- ¹¹ - Deborah R. Taylor, 2006. "Obstacles and advances in SARS vaccine development." *Vaccine* 24(7): 863–871. DOI: 10.1016/j.vaccine.2005.08.102. Retrieved 9 Sept 2020 from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7115537/>