

The role of fear in modern societies

Our ancient fear response to new situations is not always helpful in a civilised society

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The COVID-19 pandemic has underscored more than any previous crisis how fear can be exploited by multiple actors from outright conspiracy theorists with pernicious agendas to governments seeking to maximise public compliance with lockdowns and social distancing. The crisis has also given new urgency to the debate over how to handle fake news and its rapid propagation over social media, as well as the part science should play in leading and supporting governments' decisions.

At a fundamental level, the pandemic has highlighted the balance evolution has struck between fear and its aversion, between risk taking and risk avoidance. Indeed, for many animals, fear is necessary to avoid predation or accidental death, but it must be kept in check to avoid starvation by never setting out to search for food.

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When fear turns into phobia

Fear is an ancient and conserved response that served humans well enough before the advent of civilisation, but it has become distorted in modern societies where primordial fears can readily transform into phobias. At a more existential level, fear of death became increasingly prevalent with the rise of human civilisation and was a significant

factor for the development of religions with beliefs in eternal life and benevolent deities. Adverse consequences of fear, such as paranoia and isolation, have been acknowledged by philosophers and sociologists for centuries.

Other natural processes have also become objects of fear with negative consequences for both societies and individuals. One example that has received a lot of attention over recent years has been tokophobia, the fear of pregnancy and childbirth, which may have played a role in reducing birth rates among many developed nations. It can also lead to worse experiences and even outcomes for women: a recent study in Sweden and Australia (Haines *et al.*, 2012) found that women who self-identified as fearful were more likely to have a negative birth experience with higher odds of an elective caesarean than those who considered themselves either in the “Take it as it comes” or “Self-determining” groups. There is also evidence that fear of childbirth can even affect the unborn child with lasting impacts through the phenomenon known as foetal programming (Kwon & Kim, 2017). The underlying idea is that foetal development is determined partly by the environment and that abnormal stimuli such as unfounded fears can cause disruptions. Although there is no proof of this in humans, there is little doubt that excessive fear of childbirth is detrimental to the mother herself and associated with depression as well as poorer experience of labour (O'Connell *et al.*, 2019).

This example of contemporary fear, understandable but yet counterproductive with no benefit for the individual, has its roots in modern medicine. It has been described as the “medicalisation” of childbirth, transmuted a natural if painful process

almost into a medical issue requiring hospitalisation. Although there has been some retreat from that position in recent decades, fear of the event itself has been sustained by the media and also to an extent the medical profession. Even the established use of ultrasound scanning during pregnancy has been found to nurture fear in the process of searching for genetic or congenital birth defects, with expectant mothers sometimes made anxious by possible problems that often do not materialise (Edvardsson *et al.*, 2014).

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Social media and misinformation

There is nothing like a pandemic though to study the role of fear in modern societies from popular consent to draconian actions by governments to manipulation of public opinion by those aiming to disrupt efforts to combat the virus. And it is social media that has attracted a lot of attention here: not for the existence of antivaxx and other conspiracy-fuelled movements, but for fanning the flames of fear and disseminating misinformation quickly and widely. A recent report by the UK's Centre for Countering Digital Hate (CCDH) castigated social media companies for hosting anti-vaccine propagandists on their platforms (<https://www.counterhate.co.uk/post/the-public-back-sanctions-on-tech-giants-that-spread-anti-vaxx-misinforma>

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tion). The authors noted that anti-vaxxers' social media accounts have increased their following by at least 7.8 million people since 2019. "The decision to continue hosting known misinformation content and actors left online anti-vaxxers ready to pounce on the opportunity presented by coronavirus", stated the report. The CCDH warned that this growing movement could seriously jeopardise effective roll-out of vaccines.

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The CCDH itself also confirmed the negative impact antivaxx campaigns were having on public opinion in the UK. A survey published with the report found that about one in six British people had reservations about getting vaccinated against SARS-CoV-2, with a similar proportion still undecided. It also found that individuals who relied on social media for information on the pandemic were much more hesitant about a potential vaccine. This dovetails with wider findings reported by the WHO and others.

Recent studies have also looked at social media to assess the relative negative impacts of the platforms themselves as conduits of information, as well as examining the ultimate sources of fake news during the pandemic. One study investigating diffusion of COVID-19-related conspiracy theories found that mainstream sources were more effective at transmitting fake news or conspiracy theories than those deemed alternative sources (Papakyriakopoulos *et al* (2020)).

Under mainstream came popular news sites such as the *New York Post* or *Fox News*, along with scientific websites like biorxiv.org, and more trusted sites, such as Wikipedia. Alternative sources included personal blogs and social media such as tweets, Facebook posts and Reddit comments, as well as websites widely deemed untrustworthy such as Infowars and Breitbart. The main finding was that, although not surprisingly, the majority of fake news emanated from alternative sources, mainstream sources were

the major diffusers of conspiracy theories. In more detail, mainstream sources only accounted for 17% of all content identified as conspiratorial, but this content created higher numbers of Facebook and Twitter shares, 60% and 55% of the totals, respectively. This was taken to reflect greater trust in the mainstream sites, even though they too can distort content and favour some viewpoints over others. It is compounded by a moderation bias on all platforms: stories reinforcing conspiracy theories that come from mainstream sources are being filtered significantly less.

The latter matters, because fidelity of the source is taken by social media sites and search engines as key factors for their Automated Decision Making (ADM) systems to classify content. The study also noted that the dynamics vary between social media platforms, with content moderation less effective on Twitter because of the shorter lifetime of material.

In their defence, social media platforms are between a rock and a hard place because of their need to balance free speech against repression of damaging or hateful material. While some news is obviously fake—such as the notion that viruses can be transmitted alongside radio waves over 5G networks—there are genuine areas of debate over issues such as liberty and efficacy regarding public health measures to combat the spread of the SARS-CoV-2 virus.

Fear impacting on scientific discourse

Such divisions came to a head in October with the launch of the Great Barrington Declaration that proposes an alternative strategy based on achieving herd immunity. The declaration was somewhat compromised through association with a right-leaning economic think tank, but nonetheless garnered considerable support. One controversial aspect was the apparent bias against the declaration in social media. The website itself initially came below many critical URLs on the Google search rankings, while the Wikipedia entry listed supportive comments below opposing ones. Google's response was that this merely reflected online activity and over time the website would float towards the top, as it did. The Wikipedia entry though retains that original bias, with the defence being that it reflects the relative activities of its administrators who it insists are not "moderators".

It seems that some scientists sympathetic with the thrust of the Barrington Declaration still did not sign it out of concern that its content or presentation laid it open to immediate criticism. In fact, there was little detail of how herd immunity would be achieved or over the impact on healthcare systems and the cost of lives during the process of getting there.

One such sympathiser is Robert Dingwall at the School of Social Science at Nottingham Trent University in the UK, who argues that the way the Barrington Declaration was couched and presented laid it open to vitriolic reactions from staunch proponents of lockdown strategies. "I have some sympathy with its spirit, but I declined to sign because I thought it was drafted in ways that invited these reactions—but the reactions are themselves telling", he said.

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Dingwall conceded that fear still plays a role in the debate about the most efficient way to deal with this novel virus and may have impacted the response to the declaration. "The problem is, indeed, with the way in which characteristics of all modern media tend to amplify this fear", he added, through amplification of rare and extreme medical events, with many scientists being seemingly willing accomplices. "You see it with the science of, for example, aerosol transmission", Dingwall explained. "You can design experiments that will suggest that virus particles can travel several metres, but only by creating improbably controlled environments that have no ecological validity, no likelihood of appearing in the real world".

The "Long-COVID" phenomenon is another example of such amplification in Dingwall's opinion. "It may be a genuine phenomenon, but it is also being amplified and contributing to the climate of fear", he said. "People have lost sight of how long it can take to recover from infections that attack the immune system or which require serious interventions like intensive care.

Recovery needs to be thought of in months rather than weeks. We also need to be sure that the sequelae are unique to COVID-19 rather than being general consequences of such events”.

Closing down debates

Another aspect of how fear has shaped governmental responses was cited by Matthew Flinders, who studies the societal impacts of health policies at the University of Sheffield and is Vice President of the UK’s Political Studies Association. “For me what is interesting is that if there is a fear in society it is almost a fear of engaging with the evidence or a fear of acknowledging a need for a balanced response”, he said. “As soon as you question the economic investment in fighting COVID and suggest that an alternative option might be to focus resources on protecting hospitals, care homes, and those at risk while allowing the pandemic to take its course throughout the rest of society, which is the natural burnout phenomenon for a virus, you risk becoming attacked for putting older people at risk. It is as if society is fearful of accepting that older people die and those with underlying health conditions will die sooner. So my fear-based concern is now about the closing down of the political space to deny the existence of choices and options; and a failure to be able to have an open discussion about inter-generational justice and how the quality-of-life years of younger people will be massively affected by the debt the country is building up right now, not to mention the failure to treat other healthcare challenges or the costs of mental health”.

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One reason for wide disagreements over the balance between combating the COVID-19 pandemic and minimising economic fall-out lies in the difficulty of assessing relative risks, according to Dan Degerman, a philosopher at Bristol University in the UK studying the societal impacts of fear, anxiety, and emotion. “Even in a situation where the

choice is between starvation and predation, how much they fear one or the other will be shaped by what they know or—if you prefer—believe”, he explained. “Even if impending financial crises are now a bigger threat to our survival than the pandemic, it is not as though fear can tell us whether it is or not. Those of us who cannot ourselves gather, interpret, and weigh relevant health and economic data will have to be told that one is a greater threat and should be more feared than the other. So, once we have observed the rather trivial fact that fear, probably by virtue of evolution, is an effective alert mechanism and motivator, the more important thing is understanding the social and political processes that turns things into objects of fear”.

Degerman counselled against the denigration of fear in the context of COVID-19 by some authorities arguing against lockdowns. “The purposes for which fear is used and the effects of its use can obviously be both good and evil”, he said. “So, yes, on the one hand, we are arguing that this is a situation in which governments can be justified in using fear. On the other, we are arguing that citizens are justified in being afraid and highlighting that they can draw upon this fear to organise politically and pressure the government into action”.

A global dimension

In the case of a global pandemic, there is the additional risk of tensions and contradictions between local and international actions, according to Daniel Blumstein, an ethologist and conservation biologist at the University of California, Los Angeles, and author of the recently published book, *The Nature of Fear*. “Context could influence the strategy a country, state, or area adopts”, he commented. “However, the rub here, and it is a real problem, is that this ultimately is a global problem. One country that fails to manage COVID could lead to other countries having ongoing reinfection. Unless we completely shut down international travel or block travel from people from that country. Is that even possible? Might be. Might not be”.

One pandemic forecasting model that arguably more than any other encouraged governments to adopt the precautionary principle and enact lockdowns—certainly in Europe and especially the UK—was developed at the MRC Centre for Global Infectious Disease Analysis, Imperial College, London, under Neil Ferguson. Its forecast of COVID-

19-related severe cases and deaths prompted an abrupt about turn in mid-March 2020 by the UK government from a herd immunity approach like that practised in Sweden towards lockdowns aligned with most other European countries. It did not however take into account other effects on the economy and public health. Ferguson commented that negative impacts of lockdowns should and are receiving increasing attention from the modelling community. “The harms are going to take longer to assess—particularly the net effect of delayed cancer diagnoses, people avoiding healthcare more generally”, he said. “This requires careful analysis of cancer registry data—not my area, but people are certainly working on it”.

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Ferguson also highlighted the importance of developing coherent endgame scenarios for resuming normal life, which his team among others are looking at. “I do not personally have a favoured strategy, beyond avoiding health systems becoming overwhelmed”, he said. “I have always been conscious of the harms of social distancing measures as well as their benefits in reducing COVID transmission. That said, everything is easier if one gets case numbers low and keeps them there than letting case numbers rise to high levels and adopting the same set of measures to stop them rising still higher. All European countries relaxed measures too much, relied too heavily on test and trace to limit local outbreaks, while we and others said it would only ever have a limited impact with this virus. The situation we find ourselves in now is basically exactly what we predicted would happen in SAGE in early March”. SAGE (Scientific Advisory Group for Emergencies) is a group of scientists from various disciplines that advises the UK government on COVID-19 strategy, not to be confused with the World Health Organization’s Strategic Advisory Group of Experts (SAGE) for vaccines and immunisation.

The world then is caught in a catch 22: It is possible for individual countries or

regions to crack down on the SARS-CoV-2 virus and keep cases low, but only through constant surveillance and rigorous testing and tracing, to apply quarantines and lockdowns at short notice. Fear is then playing into this narrative to either make the populace accept such harsh measures or oppose them from fear of an economic breakdown with loss of jobs. The prospect of a successful vaccine is the elephant in the room seemingly offering the only hope of eventual long-term escape from the trap.

References

- Edvardsson K, Small R, Persson M, Lalos A, Mogren I (2014) 'Ultrasound is an invaluable third eye, but it can't see everything': a qualitative study with obstetricians in Australia. *BMC Pregnancy Childbirth* 14. <https://doi.org/10.1186/1471-2393-14-363>
- Haines HM, Rubertsson C, Pallant JF, Hildingsson I (2012) The influence of women's fear, attitudes and beliefs of childbirth on mode and experience of birth. *BMC Pregnancy Childbirth* 12. <https://doi.org/10.1186/1471-2393-12-55>
- Kwon EJ, Kim YJ (2017) What is fetal programming?: a lifetime health is under the control of in utero health. *Obstet Gynecol Sci* 60: 506 – 519
- O'Connell MA, Leahy-Warren P, Kenny LC, O'Neill SM, Khashan AS (2019) The prevalence and risk factors of fear of childbirth among pregnant women: a cross-sectional study in Ireland. *Obstetrics Gynaecol* 98: 1014 – 1023
- Papakyriakopoulos O, Medina Serrano JC, Hegelich S (2020) The spread of COVID-19 conspiracy theories on social media and the effect of content moderation. *Harvard Kennedy School Misinformation Review*. <https://doi.org/10.37016/mr-2020-033>