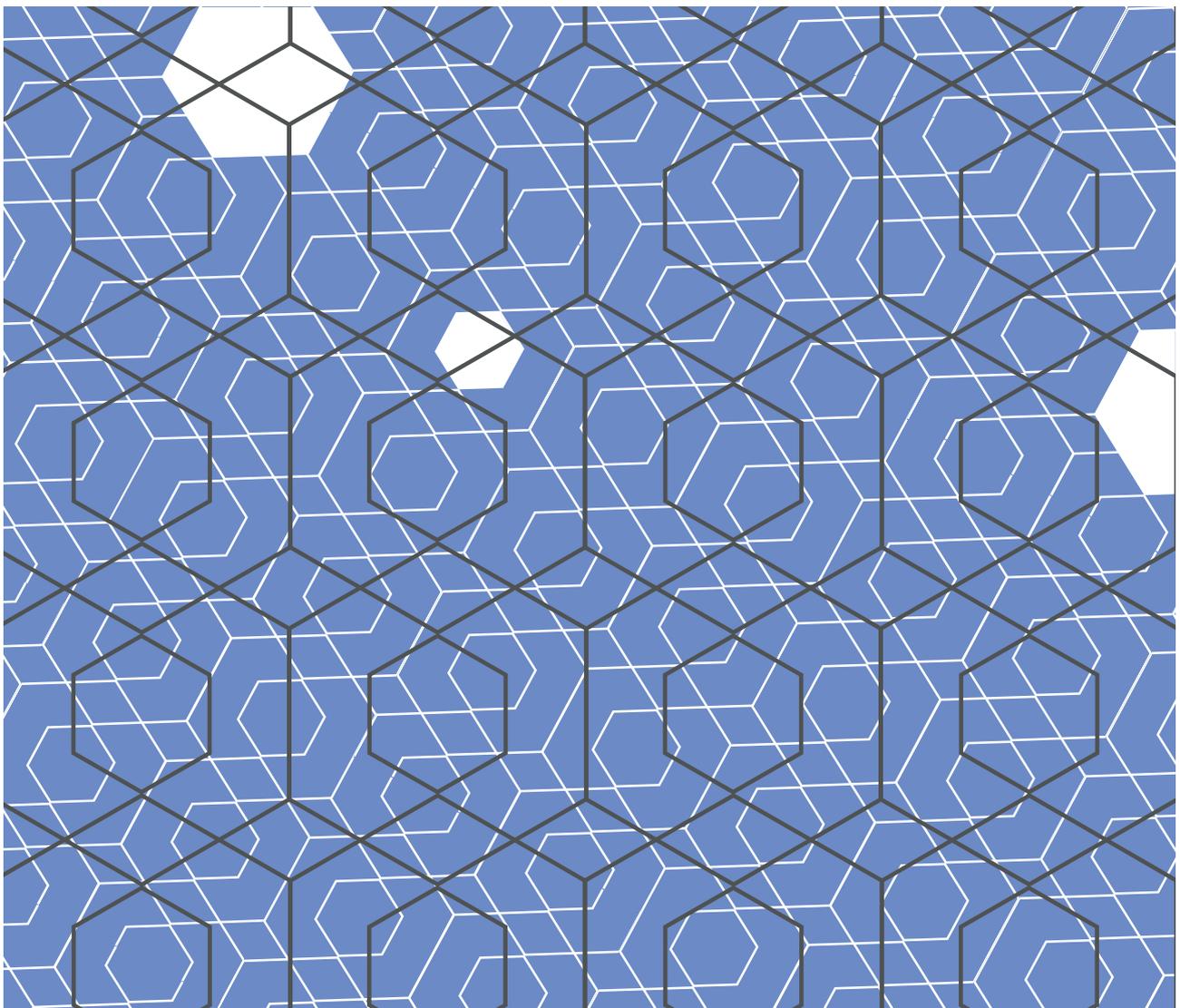
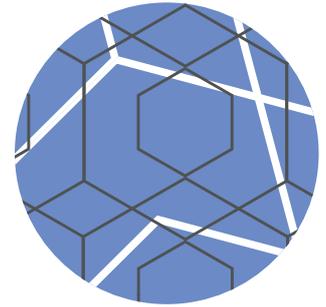


OCTOBER 2020

Conspiracy beliefs



A JOINT BRIEFING FROM:



About this briefing

Misinformation causes real harm to people's lives, health, finances and to democracy. We need good evidence on how to tackle it. This briefing is part of a research programme set up by Africa Check, Chequeado and Full Fact, to find that evidence and make it useful.

In this briefing Full Fact's researcher Dr. Dora-Olivia Vicol, looks at what drives belief in conspiracy theories and how harmful conspiracy theories can be tackled. We thank Prof. Karen Douglas, Prof. Joseph Uscinski, Dr. Tanya Kant and Vasily Gatov for their gracious feedback on earlier drafts.

We welcome feedback and comments at research@fullfact.org

Full Fact

2 Carlton Gardens
London
SW1Y 5AA

 research@fullfact.org

 [@FullFact](https://twitter.com/FullFact)

 fullfact.org

Africa Check

Johannesburg

 africacheck.org

Chequeado

Buenos Aires

 chequeado.com

This research was supported by a grant from Luminate.

Published by Africa Check, Chequeado and Full Fact, October 2020.
Published under the Creative Commons Attribution-ShareAlike 4.0
International License.

Luminate
Building stronger societies

Contents

Summary	4
Introduction	6
How prevalent are conspiracy theories?	8
Who believes in conspiracy theories?	10
What drives belief in conspiracy theories?	14
How can we tackle harmful conspiracy theories?	18
Correcting conspiracy beliefs	18
Moon landing	19
Vaccine safety	19
TWA flight 800	20
Preventing beliefs from taking root	21
Prevention through inoculation	21
9/11	22
Vaccine safety	23
Climate change	24
Prevention through analytical thinking	25
Recommendations	27
Corrections	27
Prevention	28
Ideas for further exploration	30
How we selected the studies	31
Bibliography	33

Summary

The work of professional fact checkers is a constant pursuit of evidence. We take claims, trace them, and weigh them against the evidence available, in an attempt to provide the public with the best possible information conducive to an open, transparent debate. But sometimes false claims just keep coming back - regardless of the number of times they have been debunked, and the weight of evidence mobilised.

This briefing looks at conspiracy theories - claims about secret plots orchestrated by powerful malevolent actors, which also coincide with a rejection of publicly available evidence. A conspiracy theory is not simply an alternative explanation of events, waiting for evidence to prove (or disprove) it. It is a way of theorising in spite of available evidence.

This can cause serious harm when beliefs turn into behaviours, such as when vaccine hesitancy leads to lower immunisation rates, or false claims about the 5G network result in arson. But it is also harmful for the ways in which a rejection of evidence can shut down reasoned debate.

Who believes conspiracy theories? This depends on what we mean by believe.

- According to surveys, a sizable section of the public around the world agree with particular conspiracy theories doubting vaccine safety or climate change, for example.
- But conspiracism is not just about occasional endorsements of particular claims. It is also a tendency to believe in conspiracy theories routinely, and can be measured through psychometric scales.
- Unlike occasional believers, regular believers subscribe to several theories, even when they are unrelated, and even when they contradict each other.

The psychology of conspiracism is complex.

- Some research finds that conspiracy theories play an epistemic role - they allow believers to explain the unknown, and can give people a sense of control over their environment.
- They are also existential and social. What we believe stems from our lived experience, and can enable us to build a positive image of ourselves and our 'in group'. The reasons remain elusive, but certain conspiracy theories enjoy different levels of support across political divides.
- The quality of public debate also matters. Moments of scandal which erode trust, or heightened polarisation which turns democracy into a game of winners and losers, have been found to spur conspiracy theories.

When it comes to solutions, research is just beginning to emerge, and mostly from an Anglo-American angle – though scholars have reflected on the role of conspiracy theories in history since the 1950s. Many of the studies in this area are based on small, non-representative samples, and lab experiments which are yet to be tested in the field. This cannot be generalised, and we need more nationally representative work - which has recently started to emerge. But there are still a few tentative conclusions we can draw.

- It is important to not leave conspiracy theories unchallenged in public forums. Every experiment we reviewed found that exposing participants to this misinformation without giving them accurate information, also stimulates its belief.
- But we know less about how to effectively set the record straight. A few experiments found that text-based corrections can lower average belief in conspiracy theories about the moon landing, the Trans World Airlines, and vaccines. Yet the power of corrections is dependent on their format and tone. In the case of vaccines, factual information worked, but fear-inducing imagery and narratives did not. We also don't know if corrections last in time, and to what extent they change behaviours - if at all. It is also important to note that underneath figures which report a change in belief on average, individual responses vary.
- There is more hope in prevention. A number of studies on 9/11, climate change, and vaccine conspiracy theories find that warning the public in advance about the arguments and tactics used by conspiracy supporting materials can increase the public's ability to cut through the noise.

And fact checkers can also build a culture of accuracy in the long term.

- We can work with public figures to raise the standard of debate, and prevent the general public from turning to conspiracy theories due to a lack of trust in government.
- We can identify sources of uncertainty and fill information gaps, to prevent our audiences from seeking answers elsewhere.
- And we can cultivate the public's analytical thinking. Echoing previous research on misinformation, a study of British participants found that even short problem-solving tasks which stimulate participants to think analytically can rein in the intuitive, gut-based thinking associated with belief in conspiracy theories - and false information more widely.

Overall, there is a lot left to discover about the complex psychology of conspiracy belief. As in every other briefing in the series, this marks the beginning of a conversation, which will be nuanced by input from practitioners, academics, and indeed the general public.

Introduction

In the 1980s, the Russian secret service, the KGB, planted the myth that HIV was a manmade virus manufactured in the US. Operation later dubbed INFEKTION was an attempt to undermine US credibility and deflect attention from the USSR's own research experiments into biological weapons.¹ In many ways, it was classic Cold War politics. But it was also a conspiracy – a secret plot by powerful actors, intent on furthering their interests by destabilising institutions, undermining political economic orders, and violating rights.

Sometimes, conspiracies do happen. The Watergate scandal was real. The US government did poison alcohol during the 1920s prohibition, and a 2012 investigation found that several banks had manipulated the London Interbank Offered Rate (Libor) for profit.² When they are exposed, conspiracies make for copious headlines - and in the Libor case, \$9 billion fines. But many conspiracies are also imagined. They cause harm to health, finances, and to democracy by sowing mistrust in all forms of authority. This is where we enter the realm of conspiracy theories.

Conspiracy theories are attempts to explain the causes of significant social and political events with unsubstantiated claims of secret plots, orchestrated by powerful actors.³ They are not just theories that could be empirically investigated, but speculations that don't allow themselves to be proven or disproven, because they reject publicly available evidence bases from the start. Social scientists call this type of claim non-falsifiable: however many times you try to weigh it against evidence, the goal posts keep shifting.

Social theorists like Karl Popper have reflected upon the potential harm deriving from conspiracy theories ever since the mid twentieth century. Writing in the shadow of WWII, Popper drew attention to the ways in which a “conspiracy theory of society” which seeks to attribute blame to a singular malevolent entity, can plunge nations into totalitarianism and extremism, at the left and right ends of the political spectrum.⁴ Naturally, Popper's writing, aptly titled “The Open Society and Its Enemies”, is the product of a particular historical moment. But it raises important questions about the intersections between conspiracy theories and power. A number of actors deliberately

1 Thomas Boghardt, 'Soviet Bloc Intelligence and Its AIDS Disinformation Campaign', *Studies in Intelligence* 53, no. 4 (2009), [cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol53no4/pdf/U-%20Boghardt-AIDS-Made%20in%20the%20USA-17Dec.pdf](https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol53no4/pdf/U-%20Boghardt-AIDS-Made%20in%20the%20USA-17Dec.pdf).

2 Deborah Blum, *The Poisoner's Handbook: Murder and the Birth of Forensic Medicine in Jazz Age New York* (New York: Non Basic Stock Line, 2010).

3 Karen M. Douglas et al., 'Understanding Conspiracy Theories', *Political Psychology* 40 (2019): 3–35. douglas

4 Karl R. Popper, *The Open Society and Its Enemies*, 5th ed. (Princeton University Press, 1966).

propagate and amplify conspiracy theories for financial or political motives today. Several authors have traced the cross-pollination between private companies, which make a business of providing “alternative media”, ordinary individuals, who may find a source of income in rumour spreading, and even public figures.⁵

This briefing sets out to understand how conspiracy theories come to be believed by the general public - people like you and me, who hold no special business or political interest in planting misinformation, but who may find themselves endorsing one, or more, conspiracy theories. We start with a look at the prevalence of conspiracy theories across the world, and the harm they can cause. We then take a deep dive into the contemporary research on the psychology of conspiracy beliefs, before we finally look at what fact checkers and other communicators can do to challenge harmful conspiracy theories.

Before we start, we need to make one thing clear. This briefing is not about pointing fingers - and in fact, the boundaries between regular conspiracism and occasional conspiracy beliefs are rather blurry. For every fringe media theorist who builds a business model of spreading narratives of secret malevolent elites, there are many more people who simply come across, and may share these beliefs, for genuine reasons. People can develop distrust in official evidence for valid reasons, and accurate, reliable information is not always that easy to come across. In addition, people may develop unsubstantiated theories, to explain substantial forms of socioeconomic disadvantage. It is important to resist the urge of applying labels that signal irrationality.

This briefing looks at conspiracy beliefs because they are part of the information landscape which fact checkers, and other communicators, deal with routinely. When it comes to believers however, our stance is the same as always: the public and fact checkers are part of the same community. Before you judge someone who is “definitely a conspiracy theorist”, remember that you may be an occasional conspiracy supporter.

⁵ Hugo Leal, ‘Disinformation and Conspiracy Theories’, in *Routledge Handbook of Conspiracy Theories* (Abingdon and New York: Routledge, 2020), 497–511.

How prevalent are conspiracy theories?

When we talk about conspiracy theories, we often imagine small groups of wildly imaginative individuals, who build a community around eccentric interpretations of evidence. But conspiracy beliefs are more widespread than we might first assume.

A poll by YouGov conducted in 2019 with a sample of 2,000 adults representative of the British adult public, found that a fifth (20%) believed that “vaccinations have harmful effects which are not being fully disclosed to the public”, and 3% believed that “the earth is flat”.⁶

Support for conspiracy theories is also prevalent in other parts of the world. A Gallup poll of US adults found that in 2013 a majority of 61% of respondents believed that the assassination of J.F.Kennedy was not the work of one man, but that “others were involved in a conspiracy”. In a previous briefing focused on health misinformation, we looked at conspiracy theories about polio vaccinations in Nigeria, efforts to contain Ebola in West Africa, as well as the Zika virus in Latin America and the Asia Pacific.⁷ The Covid-19 pandemic also brought its own suite of conspiracy theories. The claim that “SARS-Cov-2 was made in a lab” was believed by 30% of respondents in the UK,⁸ and almost as many (29%) in the US.⁹ In addition, 8% of UK participants believed that “the symptoms that most people blame on coronavirus appear to be linked to 5G network radiation.”

This matters a great deal. It took 13 years for health authorities in Nigeria to stop identifying cases of the wild polio virus, after three states boycotted vaccination efforts with unsubstantiated allegations of vaccine contamination in 2003.¹⁰ More recently, a study by King’s College London on a sample representative of UK adults found that people who were more likely to believe in conspiracy theories around Covid-19, were also less likely to take up health protective behaviours.¹¹ Then there were examples of

6 Victoria Waldersee, ‘Which Science-Based Conspiracy Theories Do Britons Believe? | YouGov’, 2019, yougov.co.uk/topics/science/articles-reports/2019/04/25/which-science-based-conspiracy-theories-do-britons.

7 Dora-Olivia Vicol and Africa Centre for Evidence, ‘The Impact of Misinformation on Health’, Full Fact, 2020, fullfact.org/media/uploads/en-tackling-health-misinfo.pdf

8 Daniel Allington et al., ‘Health-Protective Behaviour, Social Media Usage and Conspiracy Belief during the COVID-19 Public Health Emergency’, *Psychological Medicine*, 2020, 1–7, doi.org/10.1017/S003329172000224X.

9 Katherine Schaeffer, ‘Nearly Three-in-Ten Americans Believe COVID-19 Was Made in a Lab’, *Pew Research Center* (blog), 2020, pewresearch.org/fact-tank/2020/04/08/nearly-three-in-ten-americans-believe-covid-19-was-made-in-a-lab.

10 GPEI, ‘Nigeria Three Years Free from Wild Poliovirus’, *Global Polio Eradication Initiative* (blog), 2019, polioeradication.org/news-post/nigeria-three-years-free-from-wild-poliovirus.

11 Daniel Allington et al., ‘Health-Protective Behaviour, Social Media Usage and Conspiracy Belief during the COVID-19 Public Health Emergency’, *Psychological Medicine*, 2020, 5, doi.org/10.1017/S003329172000224X.

people setting fire to telegraph poles in the UK, after the spread of 5G theories about the virus.¹² Allowing conspiracy theories about public health to turn into behaviours can have dramatic consequences.

¹² BBC News, 'Newly Erected 5G Mast "deliberately" Set on Fire', *BBC News*, 24 May 2020, sec. Derby, [bbc.com/news/uk-england-derbyshire-52790399](https://www.bbc.com/news/uk-england-derbyshire-52790399).

Who believes in conspiracy theories?

This depends on what we mean by “believe”. According to one cross-national survey, as many as 60% of respondents in the UK, 80% in Italy, and a whole 85% in Hungary believed at least one conspiracy theory to be true.¹³ But entertaining a single conspiracy belief doesn’t necessarily make a person a conspiracy theorist. It is important to grasp this distinction between the general public, and individuals for whom belief in conspiracy theories is a regular occurrence.

The general public

Surveys on nationally representative samples usually ask one or more questions about particular conspiracy beliefs, then look for associations with demographic attributes. For instance, the King’s College survey found that people who believed the Covid-19 lab made theory were less formally educated, and more among them were Conservative voters. Similar associations were found in the US poll.¹⁴

However, this is where similarities stop. Age did not make a difference in the UK version of the study, but it did in the US, where the lab made theory was more popular among respondents under 30. There was no mention of ethnicity in the UK study, but according to the Pew Research Centre a higher proportion of Black and Hispanic respondents in the US believed the claim, compared to white respondents.

It is important to take these findings with caution. Correlation, as we know, is not causation. More young people may endorse conspiracy theories about Covid-19 than seniors simply because they may see them more frequently, and not necessarily because young people struggle to discern fact from fiction - in fact, previous research by the Pew Centre found the opposite.¹⁵ The King’s College study found a strong negative association between use of social media as a source of knowledge and conspiracy beliefs - and we know that conspiracy beliefs can proliferate on social media, which is also more popular with younger users.¹⁶ Similarly, more Hispanic and Black respondents surveyed in the US might appear to hold conspiracy beliefs about the lab-made nature of Covid-19, because there is a long history of lived inequality,

13 Joel R de Waal, ‘Brexit and Trump Voters Are More Likely to Believe in Conspiracy Theories | YouGov’, 2018, yougov.co.uk/topics/international/articles-reports/2018/12/14/brexit-and-trump-voters-are-more-likely-believe-co.

14 Schaeffer, ‘Nearly Three-in-Ten Americans Believe COVID-19 Was Made in a Lab’.

15 Jeffrey Gottfried and Elizabeth Grieco, ‘Younger Americans Are Better than Older Americans at Telling Factual News Statements from Opinions’, *Pew Research Center* (blog), 2018, pewresearch.org/fact-tank/2018/10/23/younger-americans-are-better-than-older-americans-at-telling-factual-news-statements-from-opinions.

16 Allington et al., ‘Health-Protective Behaviour, Social Media Usage and Conspiracy Belief during the COVID-19 Public Health Emergency’, 5.

and of discourse, about inequality in access to medical care for ethnic minority communities.¹⁷ As we have learnt in a different briefing, we are more likely to believe things that are familiar.¹⁸

We also cannot draw conclusions about the general profile of conspiracy believers from responses to a few context-specific questions.

First, because responses vary widely with geography. For instance, the theory that HIV was created and spread on purpose was believed by 6% of British respondents, but 13% of respondents in Brazil and as many as 27% of respondents in South Africa, where this particular conspiracy theory has a longer history.¹⁹ It also varies with time. The JFK conspiracy theory was believed by 61% of US respondents in 2013, but 52% in 1963.²⁰

Second, responses can also vary substantially depending on how questions are worded. One survey asked respondents to select which statement they thought was true, from a list of several conspiracy theories, including one that said: “the truth about the harmful effects of vaccines is being deliberately hidden from the public”. By this measure, 10% of respondents believed a vaccine conspiracy theory.²¹ In another survey however, respondents were asked to what extent they agreed with the statement that “vaccinations have harmful effects which are not being fully disclosed to the public”.²² By this second measure, a whole 20% of respondents were seen to endorse vaccination conspiracy theories. Both surveys were conducted by YouGov on samples representative of British adults, and were administered just six months apart. But different questions yield different results.

This brings us to the third limitation of surveys about conspiracy beliefs: interpretation. One headline that made several front pages in 2018 was that “60% of Britons believe in conspiracy theories”.²³ On a closer look, this refers to one of the YouGov polls, where only 40% of respondents chose “none of this is true”, when presented with a series of conspiracy beliefs. The remaining 60% chose at least one, but we cannot assume that they believe all statements presented in the survey. In fact, the conspiracy theory selected most frequently, by 44% of respondents, was

17 See, for instance James H. Jones, *Bad Blood* (Simon and Schuster, 1993).

18 Dora-Olivia Vicol, ‘Who Believes and Shares Misinformation?’ (London: Full Fact, 2020), fullfact.org/media/uploads/who-believes-shares-misinformation.pdf.

19 YouGov, ‘YouGov Cambridge Globalism Project - Conspiracy Theories’, 2019, d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/2c6lta5kbu/YouGov%20Cambridge%20Globalism%20Project%20-%20Conspiracy%20Theories.pdf.

20 Art Swift, ‘Majority in U.S. Still Believe JFK Killed in a Conspiracy’, Gallup.com, 15 November 2013, news.gallup.com/poll/165893/majority-believe-jfk-killed-conspiracy.aspx.

21 de Waal, ‘Brexit and Trump Voters Are More Likely to Believe in Conspiracy Theories | YouGov’.

22 Waldersee, ‘Which Science-Based Conspiracy Theories Do Britons Believe?’

23 Esther Addley, ‘Study Shows 60% of Britons Believe in Conspiracy Theories’, *The Guardian*, 23 November 2018, sec. Society, theguardian.com/society/2018/nov/23/study-shows-60-of-britons-believe-in-conspiracy-theories.

that “even though we live in what’s called a democracy, a few people will always run things in this country anyway”. This may well refer to the Cabinet, or to perceptions of social inequality. As a number of authors write in an excellent thesis on conspiracy beliefs, people’s tendency to believe that official accounts are false, and to believe that malevolent groups are conspiring, are not necessarily the same thing.²⁴

Finally, there is the question of political partisanship. A number of researchers have noted that a person may hold conspiracy beliefs because they are told by trusted elites that a conspiracy exists. Take, for instance, climate scepticism. Research with US participants finds that the strongest predictor of climate change denialism is Republicanism.²⁵ Similarly, the conspiracy accusing the Bush administration of staging the 9/11 attacks is far more likely to be believed by Democrat respondents.

Regular believers

If surveys capture beliefs in specific conspiracies at one point in time, for some people belief in conspiracy theories is a regular occurrence. Ever since the 1990s psychologists in the US, and gradually elsewhere, have argued that belief in conspiracy theories may not just be an isolated phenomenon, but could even be a general way of interpreting events, captured by the fact that some people do not just believe in one, but in several unrelated, and at times completely contradictory, conspiracy theories.

In one of the first studies on this topic published in 1994, Ted Goertzel surveyed 347 respondents in one US state.²⁶ He observed that those who believed in the JFK conspiracy theory were also more likely to believe that the federal government had deliberately used HIV to infect gay and black Americans, that flying saucers were real but hidden by the Air Force, and that “the Japanese [were] deliberately conspiring to destroy the American economy.”

A similar, and arguably even more puzzling finding, emerged from a more recent study of respondents from a British university. The 2013 survey of 137 students learnt that, not only did some of them hold several conspiracy beliefs, but those who believed that Princess Diana had faked her own death were also more likely to believe that she had been killed.²⁷

These findings have been supported by the development of several metrics, designed to measure a person’s general tendency to believe in conspiracy theories. Take

24 Douglas et al., ‘Understanding Conspiracy Theories’.

25 Joseph E. Uscinski, Casey Klofstad, and Matthew D. Atkinson, ‘What Drives Conspiratorial Beliefs? The Role of Informational Cues and Predispositions’, *Political Research Quarterly* 69, no. 1 (2016): 57–71.

26 Ted Goertzel, ‘Belief in Conspiracy Theories’, *Political Psychology*, 1994, 731–742.

27 Michael J. Wood, Karen M. Douglas, and Robbie M. Sutton, ‘Dead and Alive: Beliefs in Contradictory Conspiracy Theories’, *Social Psychological and Personality Science* 3, no. 6 (2012): 767–773.

the Belief in Conspiracy Theories Inventory (BCTI), first published in 2011. The BCTI measures conspiracism by looking at beliefs across 15 specific claims. Other metrics have since sought to transcend the limitations of time and context-specific propositions, with questions about the state of the world in general. The Generic Conspiracist Beliefs Scale, for instance, examines general beliefs in government, extraterrestrial, international control, personal wellbeing and malevolent conspiracies, based on 15 questions. A different, 12-item Conspiracy Mentality Scale, avoids mentioning any specific theory or powerful groups. Respondents simply get asked to what extent they agree with statements like “[m]ost people do not recognise to what extent our life is determined by conspiracies that are concocted in secret”.

These metrics tend to strongly correlate with each other, and suggest that conspiracism can be viewed as a general tendency which goes beyond belief in a single statement. And while, as is often the case in academic research, they have been designed and mainly tested in the US, evidence is also emerging that this tendency to believe conspiracy theories can be measured reliably across different cultural contexts - though still mostly in the Global North. The Conspiracy Mentality Questionnaire developed in 2013, found that scores from its short set of 5 items were able to predict belief in specific conspiracy theories across the UK, US, Ireland, Germany and Turkey, with comparable levels of accuracy (see Figure 1).²⁸

Naturally, believing in one conspiracy theory does not indicate that a person will believe in all of them. But when support for conspiracy theories is regular, it can be measured. We can all take a critical look at how we think.

I think that...

... many very important things happen in the world, which the public is never informed about ... politicians usually do not tell us the true motives for their decisions ... government agencies closely monitor all citizens ... events which superficially seem to lack a connection are often the result of secret activities ... there are secret organizations that greatly influence political decisions....

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
Certainly not	Extremely unlikely	Very unlikely	Unlikely	Somewhat unlikely	Undecided	Somewhat likely	Likely	Very likely	Extremely likely	Certain

Fig 1. Items in the Conspiracy Mentality Questionnaire. Source: Martin Bruder et al., ‘Measuring Individual Differences in Generic Beliefs in Conspiracy Theories Across Cultures: Conspiracy Mentality Questionnaire’, *Frontiers in Psychology* 4 (2013), doi.org/10.3389/fpsyg.2013.00225.

28 Martin Bruder et al., ‘Measuring Individual Differences in Generic Beliefs in Conspiracy Theories Across Cultures: Conspiracy Mentality Questionnaire’, *Frontiers in Psychology* 4 (2013), doi.org/10.3389/fpsyg.2013.00225.x

What drives belief in conspiracy theories?

Why questions are notoriously difficult to ascertain. We know a lot more about the number of people who support one conspiracy theory or another, than we do about their personal life stories, their motivations, and the complex ways in which beliefs contribute to their sense of self. Academic research in this area is also very new. But inquiries to date have suggested a number of reasons.

Conspiracy beliefs can play an epistemic role by plugging our explanatory gaps, and providing us with the comfort of knowing - why the twin towers collapsed, why a plane exploded mid air, and so on. They can also play an existential role, by providing a sense of explanation for socioeconomic disadvantage, and a social role, by allowing us to build a positive sense of ourselves and our in-group, in the face of disconfirmatory evidence. Then there is the element of politics. Support for some conspiracy theories not only runs along partisan lines, but can also flourish in times of political uncertainty.²⁹

It is important to remember that we do not yet know whether these motives for believing in conspiracy theories lead to the desired effects in practice. For instance, believing in a conspiracy theory about vaccine safety doesn't necessarily make you feel healthier - nor does believing in a global elite make you feel more powerful. But it is only by paying attention to these motivations, that we can begin to understand how conspiracy theories come to last. Let us take them in turn.

Conspiracy theories can preserve beliefs in the face of uncertainty and contradiction

Finding causal explanations for events is a key part of our way of understanding the world. As we've noted in a different briefing, the need to know is a natural need of human beings, and uncertainty is a stressful psychological state to be in. Conspiracy theories can satisfy our need to know when information is unavailable, conflicting, random, or misaligned with our views.

Unlike other causal explanations furthermore, conspiracy theories are speculative, and non-falsifiable. They are not based on what can be observed in experimental conditions. On the contrary, they are based on what is presumed to happen behind closed doors - thus, by definition, on what cannot be observed. This is why conspiracy theories are inherently resistant to debunking. If a regular scientific explanation can always be disproved with empirical testing, believers in conspiracy theories can easily discount

29 Karen M. Douglas, Robbie M. Sutton, and Aleksandra Cichocka, 'The Psychology of Conspiracy Theories', *Current Directions in Psychological Science* 26, no. 6 (1 December 2017): 538-42, doi.org/10.1177/0963721417718261.

debunks with allegations that their authors are part of the conspiracy itself. In this sense, conspiracy theories can infinitely protect cherished beliefs from disconfirmatory evidence.

Literature reviews of conspiracy research find that, when it comes to epistemic motives, conspiracy theories are correlated with: lower levels of analytical thinking; lower levels of education; a higher need for cognitive closure; a tendency to see patterns of events; a tendency to believe that things happen for a reason, rather than randomly; experiencing large scale events without adequate explanations.³⁰

Causal explanations can also provide a sense of safety and control of our environment

Studies have shown that people are also likely to turn to conspiracy theories when they experience a state of anxiety and powerlessness. It is no wonder that conspiracy theories flourish during pandemics. Historically, the Bubonic Plague outbreak in 1576 Italy was accompanied by a pamphlet claiming that the disease was spread intentionally, with infected ointments rubbed on door handles and knockers. During the Spanish flu pandemic which started towards the final months of World War I, a conspiracy theory claiming that the virus was being spread by German aspirin, prompted US Public Health Service to test Bayer Aspirin to disprove it.³¹ Our health briefing documents similar outbreaks of conspiracy theories during the more recent outbreaks of Zika, Ebola, and most recently Covid-19.³²

It is important to note that conspiracy belief is strongly related to a lack of sociopolitical control, and should not be seen as a reaction to a few fleeting moments of powerlessness experienced by individuals in isolation. Studies have consistently shown associations between conspiracy theories and participants being in positions of low societal power, such as unemployment and racial marginalisation.³³ In a nuanced piece on the topic, a team of psychologists note that it is often the case that conspiracy believers are in fact marginalised.³⁴ Unemployment and racism are real. Electoral loss is also real. The problem of conspiracism however, arises when real socioeconomic disadvantage is attributed to imagined causes – and the intentions and effectiveness of the conspiring enemy are exaggerated.

30 Douglas et al., 'Understanding Conspiracy Theories'; Douglas, Sutton, and Cichocka, 'The Psychology of Conspiracy Theories'.

31 Steven Taylor, *The Psychology of Pandemics: Preparing for the Next Global Outbreak of Infectious Disease* (Cambridge Scholars Publishing, 2020).

32 Dora-Olivia Vicol and ACE, 'Health Misinformation in Africa, Latin America and the UK: Impacts and Possible Solutions' (London: Full Fact and Africa Centre for Evidence, 2020), fullfact.org/media/uploads/en-tackling-health-misinfo.pdf.

33 Bruder et al., 'Measuring Individual Differences in Generic Beliefs in Conspiracy Theories Across Cultures'.

34 Aleksandra Cichocka et al., "'They Will Not Control Us": Ingroup Positivity and Belief in Intergroup Conspiracies', *British Journal of Psychology* 107, no. 3 (2016): 4–5.

Research has found that conspiracy beliefs are associated with: feelings of relative deprivation; a lack of personal control; and a lack of understanding of socio-political realities.³⁵

Conspiracy theories can make us feel better about the social groups we belong to

Conspiracy beliefs also presume a group dimension - pharmaceutical companies, corporations, “the system”, a form of powerful and malicious they. This, psychologists argue, may be explained by collective narcissism. For people with narcissistic attitudes, conspiracy theories can form a defence mechanism, providing an explanation of disadvantage, while simultaneously removing a sense of culpability for that position.

“Collective narcissism” is a form of in-group positivity that reflects a belief in the group’s greatness, and a feeling of under-appreciation. Simply feeling good about one’s community is not narcissistic in and of itself. Collective narcissism derives from the feeling of under recognition by others. This is why, psychologists argue, people who rank high on the collective narcissism scale find comfort in disregarding criticism by viewing it as part of a malicious agenda. For instance, a study with Polish respondents found that participants who viewed their nation as a gifted, but historically underappreciated community, were also more likely to believe antisemitic conspiracy theories.³⁶ Subsequent research by the same authors with Polish and US samples replicated this finding - with the important addition that feeling positive about one’s community, without the element of under-appreciation, made participants less likely to believe conspiracy theories.

Political uncertainty can heighten belief in conspiracy theories

Politics can also feel like a game of us and them. While foundational to the democratic process, heated elections can create the appearance of winners and losers, the powerful and defeated. Conspiracy theories frequently arise from political events that generate feelings of powerlessness, uncertainty, and unpredictability.

Academics investigated the relation between political scandal and popular beliefs in conspiracy, by running two virtually identical sets of experiments, at two very different political moments: a quiet one, and one characterised by a flurry of allegations.³⁷ The month of January 2013 was characterised by an average of 200 references to “political scandal” in the main US dailies. This was similar to surrounding months, leading the authors to label January as the “quiet” political month. By contrast, the

35 Cichocka et al., “They Will Not Control Us”.

36 Aleksandra Cichocka et al., “They Will Not Control Us”: Ingroup Positivity and Belief in Intergroup Conspiracies’, *British Journal of Psychology* 107, no. 3 (2016): 556–576.

37 Katherine Levine Einstein and David M. Glick, ‘Scandals, Conspiracies and the Vicious Cycle of Cynicism’, in *Annual Meeting of the American Political Science Association*, 2013.

second experiment was conducted in May 2013 – a month when newspapers contained three times as many references to scandal, including accusations that the Obama administration had concealed information about the killing of Americans in Benghazi, inappropriately obtained reporter phone records, and used the IRS to unfairly target conservative political organisations.

The study found that conspiracy beliefs were significantly higher in the turbulent month of May, than in the comparably calmer January. Interestingly, the conspiracy tested was not even a popular one at the time. The claim in question alleged that the Obama administration had manipulated unemployment data for political gain.³⁸ This had been popular during the 2012 presidential elections in the fall, but debunked since, and had vanished from mainstream political debate by the time the experiment was conducted.

Overall, the authors concluded, political scandals which spur a climate of cynicism, can make individuals more likely to believe in conspiracy theories. It is not just that people with existing conspiracy beliefs exhibit lower levels of trust in government. Political scandals can also erode trust, leading in turn to more conspiracy beliefs. Similar findings emerge from research which looked at the relation between elections and conspiracy beliefs. The heightened polarisation of elections also coincides with fear of voter fraud - and electoral losers were found to be more likely to believe that fraud had occurred than winners.³⁹

38 Matthew O'Brien, 'There Is No Jobs-Report Conspiracy: The Jobs Recovery Is Still Meh', *The Atlantic*, 5 October 2012, theatlantic.com/business/archive/2012/10/there-is-no-jobs-report-conspiracy-the-jobs-recovery-is-still-meh/263288.

39 Jack Edelson et al., 'The Effect of Conspiratorial Thinking and Motivated Reasoning on Belief in Election Fraud', *Political Research Quarterly* 70, no. 4 (2017): 933–946.

How can we tackle harmful conspiracy theories?

When it comes to tackling conspiracy theories, the short answer is that there is no silver bullet. Historically, we know that conspiracy theories can be tackled in the long term, through concerted efforts by public figures and the media.

Take the early 1950s US, when the country witnessed the rise of the Red Scare conspiracy theory, spearheaded by Senator Joseph R. McCarthy. Elected in 1946, McCarthy made a political calling card of accusing US officials and academics of infiltrating the American government with communist interests - until 1954, when a 36-day hearing held in the Senate and broadcast to 40 million viewers exposed McCarthy, and the hollowness of his Red Scare.⁴⁰

But if history holds some inspiring examples of our ability to rise above conspiracy theories in the long term, it is also replete with examples of big budget productions which, deliberately or not, fan the flames of conspiracy theories - just think of the X-files. Our media ecosystem today is also increasingly diffuse, which brings challenges in identifying the spread of conspiracy theories but also in getting corrective messages to mass audiences. What, then, can fact checkers do?

In this section we look at two strategies. First, corrections. We look at how participants respond to debunks which tackle belief in conspiracy theories with evidence. Second, inoculation. We look at the effectiveness of messages designed to help audiences recognise the factual inconsistencies and logical fallacies deployed in conspiracy theories. Finally, we take a look at how fact checkers can prevent conspiracy theories from taking root, by cultivating analytical thinking.

Correcting conspiracy beliefs

Text-based corrections which give readers the facts have generally been found to lower belief in conspiracies. This emerged in studies with three conspiracy theories, which concerned the moon landing, the explosion of the TWA flight in the US in the late 1990s, and vaccines safety. But format and tone matter a great deal. In the vaccination literature, fear-inducing images (such as of non-vaccinated children who got sick), did more harm than good. In the TWA Flight 800 case, text which appeared redacted as if information was being withheld was also less successful than clean text.

⁴⁰ Allida Black, ed., 'Joseph R. McCarthy (1908-1957)', in *Eleanor Roosevelt, John Kennedy, and the Election of 1960: A Project of The Eleanor Roosevelt Papers* (Washington DC: George Washington University, 2003), gwu.edu/~erpapers/mep/displaydoc.cfm?docid=erpn-josmcc.

It is important to remember that research in this area is just beginning. The moon landings and flights explosion experiments are small and non generalisable. The literature on anti-vaccination, which is much larger, finds that there is also a lot we don't know: about whether corrections can last in time, and more notably, about the extent to which correcting beliefs turns into health protective behaviours. These examples give an overview of what's possible. Only further field research can determine whether conspiracy theories can be successfully debunked in the long term.

Moon landing

More than 50 years after the first people landed on the moon, in the 1969 Apollo 11 expedition, the theory that the lunar landing was a hoax lives on. A small but relatively constant 5% of US respondents believe it - preceded by a suite of pop culture references, from a 1971 Bond film, to the 1990s X-Files.⁴¹

A group of psychologists set out to study this.⁴² Just under 200 German-speaking participants were randomly assigned to one of three experimental conditions. In the first phase, everyone was presented with moon landing photographs typical of those used by conspiracy supporters. One group was then shown some general text explaining the scene - this was the control. Another saw an argument routinely used in the fake moon landing conspiracy support forums, namely that the positioning of objects in front of (rather than behind) the camera crosshairs indicated manipulation. In the third group participants saw a text outlining the conspiracy claim, followed by a debunk which clearly explained the fact that the anomalous details in the picture had been caused by the number of times it had been reproduced and over exposed.⁴³

Results indicated that there was a substantial decrease in conspiracist beliefs among participants who saw a debunk - in the same way that those who saw just an argument for the conspiracy theory, increased their conspiracy beliefs.

Vaccine safety

According to the WHO, vaccine hesitancy is one of the top 10 public health concerns. Worldwide, just 79% of people agreed that vaccines are safe - with a strong majority of 92% in countries in Eastern Africa, but as little as 50% in Eastern Europe.⁴⁴

41 Elizabeth Howell and 2019, 'Moon-Landing Hoax Still Lives On, 50 Years After Apollo 11. But Why?', Space.com, accessed 22 July 2020, [space.com/apollo-11-moon-landing-hoax-believers.html](https://www.space.com/apollo-11-moon-landing-hoax-believers.html).

42 Viren Swami et al., 'Lunar Lies: The Impact of Informational Framing and Individual Differences in Shaping Conspiracist Beliefs about the Moon Landings', *Applied Cognitive Psychology* 27, no. 1 (2013): 71-80.

43 Over-exposed reproductions led bright areas of the image to "bleed" over the crosshairs (the net of lines in the eyepiece of a sighting device), creating the illusion that objects were in front of it (which would suggest artificial manipulation), rather than behind it.

44 Wellcome Trust, 'Chapter 5: Attitudes to Vaccines', Wellcome Global Monitor 2018 (London: Wellcome Trust, 2018), [wellcome.ac.uk/reports/wellcome-global-monitor/2018/chapter-5-attitudes-vaccines](https://www.wellcome.ac.uk/reports/wellcome-global-monitor/2018/chapter-5-attitudes-vaccines).

This matters a great deal when belief turns into behaviours, and whole countries' immunisation rates drop. One review of the literature on anti-vaccination conspiracy theories we conducted in 2020, found that, while corrections are only one way of tackling vaccine hesitancy, they paint a mixed picture at best.⁴⁵

First, we can change beliefs in vaccine safety. Studies found that short debunks which presented participants with official health information could remedy beliefs in the myth that the MMR jab can cause autism, or that the flu jab can give you the flu. But this depends on the format of corrections. Text-based explanations have been generally found to work. But interventions which used fear-inducing text or visual corrections found that they either didn't work or, for a minority of participants backfired, making a small group of convinced vaccine deniers even more entrenched in their positions.

Second, we also don't know how beliefs about vaccine safety change in time. The only two studies that traced it found that, one week after the intervention, concerns with vaccine safety got worse. We don't know why this happens, and the findings need replication – the samples tested were small, and not nationally representative, and we cannot apply them across countries. But this highlights the importance of thinking about how beliefs change, or rather return to earlier beliefs, in time.

Third and finally, there is a long road between changing belief about vaccine safety, and influencing behaviours. From all the studies reviewed, where researchers explicitly asked participants about their intention to vaccinate, only one found an improvement. Furthermore, self-reported intention to do something new is not always followed through. A study which asked parents if they would vaccinate their daughters against HPV, for instance, found that while 90% who said “no” stuck to this in their behaviour, only 38% of those who said yes did vaccinate their daughters. As the authors note, inaction is an easier goal to meet.⁴⁶ Our health misinformation briefing covers this in detail.

TWA flight 800

In 1996, a Trans World Airlines (TWA) jumbo jet airliner bound for Paris broke up 8 miles off the Long Island coast, crashing into the Atlantic Ocean and killing all 230 people on board. An inquiry by the National Transportation Safety Board established that the cause of the tragic crash was an explosion of a combustible mixture of fuel and air, which was ignited by an electrical short circuit. Despite this however, alternative explanations abounded. Leading from eyewitness accounts who recalled seeing streaks of light before the crash, one conspiracy theory claimed that the plane had been

45 Vicol and ACE, 'Health Misinformation in Africa, Latin America and the UK: Impacts and Possible Solutions'.

46 Noel T. Brewer et al., 'Increasing Vaccination: Putting Psychological Science Into Action', *Psychological Science in the Public Interest* 18, no. 3 (1 December 2017): 149–207, doi.org/10.1177/1529100618760521.

downed by a rogue US Navy strike, which the government was trying to cover up. The streaks of light seen were likely burning fuel, not an impending missile. But as it often happens when shocking events occur and the public look for a reason, a drop of truth ballooned into a cloud of unsubstantiated explanations.

One group of authors found that belief in the TWA flight conspiracy theory could be corrected. But the format of the correction mattered a great deal.⁴⁷ Government documentation is often released in redacted form. Academics investigated the extent to which documentation released to assuage beliefs in conspiracy theories did so, or whether the presence of redacted text made erroneous beliefs even stronger.

Over 2,500 participants recruited from Amazon's Mechanical Turk in 2014 were asked to read an article which described the official story, the counter account, and a vivid picture of the reconstructed plane - similar to what the public would see in the media. All participants were then shown the same three documents by the National Transportation Safety Board and other government sources, evidencing the technical faults behind the accident. But to simulate the experience of redaction, one group saw a version where the blank spaces between paragraphs had been covered with black boxes, as to create the appearance that some information was being withheld.

The authors found that even though seeing corrective materials reduced conspiracy beliefs on average, compared to seeing nothing at all, seeing the "redacted" version made no difference to beliefs.

Notably, individuals who were predisposed to hold high conspiracy beliefs were more likely to believe the conspiracy regardless of any of the available information. For them, neither the clean, nor the "redacted" versions were successful in lowering conspiracy beliefs. However, this was found to improve in a further study which gave participants a reason for the redactions. While conspiracy beliefs were, once again, higher in the redacted than in the unredacted condition, both treatments did better than the controls.

Preventing beliefs from taking root

If evidence of our ability to correct belief in conspiracy theories is mixed and would benefit from further research, there may be more hope in our ability to prevent: through inoculation, and the power inherent in our own ability to think critically.

Prevention through inoculation

The theory of information inoculation argues that, just as vaccines build our immunity against a disease by exposing us to a controlled dose of antigens, a preemptive message

⁴⁷ Brendan Nyhan et al., 'Classified or Coverup? The Effect of Redactions on Conspiracy Theory Beliefs', *Journal of Experimental Political Science* 3, no. 2 (2016): 109–123.

can protect against future exposure to persuasive but false content. Every inoculation message contains, in effect, two essential components: a warning against possible future manipulation, and a refutation which gives readers the arguments or evidence to enable them to counter future messaging.

Research on inoculation has flourished in the past two decades.⁴⁸ This section looks at studies that have recently begun applying these tactics to prevent belief in conspiracy theories - namely, surrounding 9/11, anthropogenic climate change, and vaccination. Overall, we find that inoculation can successfully lower belief in specific conspiracy theories. On average, readers who were first shown factual information were less likely to believe inaccurate information.

Having said this however, this research is based on small scale experiments. As with the corrections literature, the studies reviewed here give us a sense of what is possible. The extent to which they can be scaled up and used by fact checkers in the real world will become apparent with further field research.

9/11

On 11 September 2001, four passenger planes were hijacked by radical Islamist terrorists. Almost 3,000 people were killed as the aircraft were flown into the World Trade Centre, the Pentagon, and a field in Pennsylvania.⁴⁹ For years the motivations of the attackers, the technical details of the planes and buildings, and the tragedy of lives lost made the incident the object of public scrutiny. But they also gave rise to countless conspiracy theories which accused the US government of staging and covering up the attacks - on internet forums, and in hours of “documentary” films.

One study sought to inoculate students against Loose Change, a conspiracy supporting documentary, broadly targeted at young audiences.⁵⁰ A subset of a 300 odd student sample recruited from a university in the US, viewed a short text (approximately 650 words) which warned them of the conspiracy theory, then pointed to the factual errors used to support it. Another group saw the same warning, followed by a text which pointed to the flawed logic of the 9/11 conspiracy theory, such as its poor quality sources and convoluted argument. Interestingly, half of participants also saw a treatment known as metainoculation beforehand. In this case, they were warned against the possibility that “some people” might want to change their way of thinking about issues, and urged to make up their own mind. This was to test the possibility that an excess of scepticism could make participants discount everything - the conspiracy supporting film, but also

48 John A. Banas and Stephen A. Rains, ‘A Meta-Analysis of Research on Inoculation Theory’, *Communication Monographs*, 1 September 2010, doi.org/10.1080/03637751003758193.

49 Chris Bell, ‘The People Who Think 9/11 May Have Been an “inside Job”’, *BBC News*, 1 February 2018, sec. BBC Trending, [bbc.com/news/blogs-trending-42195513](https://www.bbc.com/news/blogs-trending-42195513).

50 John A. Banas and Gregory Miller, ‘Inducing Resistance to Conspiracy Theory Propaganda: Testing Inoculation and Metainoculation Strategies’, *Human Communication Research* 39, no. 2 (2013): 184–207.

the correct, factual information they were shown. Participants in all groups then saw a 40min extract from Loose Change, before reporting their views.

Results indicated that inoculation treatments were successful - and particularly so in the fact-based condition. People who saw the treatments were more likely to disagree with the conspiracy theory and to disbelieve the film, than the control. By contrast, students in the control group, who hadn't been forewarned, increased their belief in the 9/11 theory by as much as 21% (1.5 points on a 1-7 agreement scale). It is important to note however, that inoculation is not infallible - and can actually work against itself. When participants had been urged to think independently on a general or meta level, before being shown the fact-based inoculation and finally the film, the effectiveness of the inoculation was lowered - though not cancelled.

Vaccine safety

A study which investigated the effects of anti-conspiracy arguments also found that corrections could increase intentions to vaccinate (a fictitious child), when presented prior to conspiracy theories.⁵¹

A total of 260 US adults, half of whom were parents, were randomly distributed across four test groups. One group saw a variant of an anti-vaccine conspiracy theory, designed to reproduce the type of generic, non-referenced information people come across in everyday life ("there is a significant amount of evidence that vaccines can hurt more than they help. For example, by the year 2002, tens of thousands of reactions to vaccines, including deaths, were reported..."). A second group saw information debunking this conspiracy theory. Group three were shown both the conspiracy theory and its debunk, while the final group, number four, saw this in reverse order, with the anti-conspiracy material first. All participants were then asked to state the extent to which they agreed with statements such as "vaccines lead to allergies", designed to test confidence in vaccine safety, and to imagine a scenario in which they were the parents of a child suffering from a disease.

The study found that vaccination intentions improved if participants saw the anti-conspiracy material first, but not after. Beliefs become significantly more difficult to dislodge once they had taken hold of participants' imagination. Notably, and in line with previous research, exposing participants to conspiracy-supporting materials increased belief in this direction, while also decreasing intention to vaccinate.⁵²

51 Daniel Jolley and Karen M. Douglas, 'Prevention Is Better than Cure: Addressing Anti-Vaccine Conspiracy Theories', *Journal of Applied Social Psychology* 47, no. 8 (August 2017): 459-69, doi.org/10.1111/jasp.12453.

52 Daniel Jolley and Karen M. Douglas, 'The Effects of Anti-Vaccine Conspiracy Theories on Vaccination Intentions', *PLOS ONE* 9, no. 2 (20 February 2014): e89177, doi.org/10.1371/journal.pone.0089177.

Climate change

A similar study investigated the effect of misinformation on the acceptance of human-caused global warming, and the possibility of neutralising it with preemptive messages.⁵³

A sample of 751 participants representative of the US population were shown either a summary of the scientific consensus on global warming, or a short explanation of ‘false balance’ messaging tactics - the type of messaging that gives equal, uncritical exposure to scientific consensus and unproven views, but that in doing so in the name of journalistic equity, risks legitimising unsubstantiated claims.⁵⁴ One group of participants saw both the facts and the warning. Everyone was then shown a mock news article drafted along these lines of false balance, where scientific consensus and unsubstantiated claims about climate change were presented side by side, as if they represented equally valid views.

Results indicated that showing participants the facts on climate change before exposure to misinformation nullified its negative influence. Participants in this group increased belief in human-caused global warming. There was no overall change in perceived climate consensus after seeing inoculation only materials (the ones about false balance tactics), but this did work in combination with the factual summary of the scientific consensus.

This result ran counter to an earlier study which found that the positive effect of consensus information was cancelled out by misinformation. In that case, the misinformation example was a more direct attack on climate science, taken from the Oregon Petition Project.⁵⁵

To test these results further with a more direct attack, the authors ran a second experiment looking at preempting misinformation which explicitly manufactures doubt. A total of 400 participants were shown a text by the Global Warming Petition Project. According to this website, 31,000 signatories with science degrees signed a statement claiming that human generated greenhouse gases are not disrupting the Earth’s climate. This, the authors argue, is the “fake expert strategy” – using actors who appear to be experts, but are not sufficiently qualified to provide an evidence-based assessment, to lend credibility to a contrarian claim.

53 John Cook, Stephan Lewandowsky, and Ullrich KH Ecker, ‘Neutralizing Misinformation through Inoculation: Exposing Misleading Argumentation Techniques Reduces Their Influence’, *PLoS One* 12, no. 5 (2017): e0175799.

54 Graham N. Dixon and Christopher E. Clarke, ‘Heightening Uncertainty around Certain Science: Media Coverage, False Balance, and the Autism-Vaccine Controversy’, *Science Communication* 35, no. 3 (2013): 358–382.

55 Sander Van der Linden et al., ‘Inoculating the Public against Misinformation about Climate Change’, *Global Challenges* 1, no. 2 (2017): 1600008.

To achieve the inoculation, a subset of participants were shown a short (approx 350 words) text and a figure, which drew their attention to a similar use of unqualified expertise in the tobacco ad campaign. The text did not directly address the Oregon petition project, but did note that similar tactics are used to discredit climate science.

The authors found that in this case too, the group who saw the warning (inoculation) material showed less polarisation than those who only saw the misinformation. We don't know with certainty why that occurred. One explanation may be that information about the misleading techniques resonated well with climate sceptics - who, the authors found, were also free market supporters, and might see misinformation as a violation of individual rights to be informed. Another explanation is that the inoculation stimulated analytical thinking. As we will see in the final section of this briefing, taking one's time to think slow can also moderate belief in inaccurate information.

Prevention through analytical thinking

Another way to tackle conspiracy beliefs in the long term is to cultivate audiences' own abilities to detect and question poor quality content. In a previous briefing, we have drawn attention to the power of media literacy interventions to cultivate critical thinking. We have found that classes and workshops held in schools, or even short online games for adults, can cultivate audiences' awareness of media framing, the manipulation of emotive reactions for virality, and of misinformation tactics, at least in the short term.⁵⁶ Interestingly, what we have found here is that even short bursts of effort to think more analytically for the moment, may enable us to see through the lure of conspiracy theories.

In the world of professional fact checking, attention to detail is key. Every claim is minutely traced and weighed in light of available evidence, in an effort to establish accuracy. But this isn't how most ordinary people form their beliefs. Every now and again, we put a lot of effort into thinking in detail, but a lot of the time we simply use heuristics - cognitive shortcuts that save us the effort, and quite literally the energy, it takes to focus.

In a landmark contribution to psychology Daniel Kahneman captured this distinction between analytical depth and mere browsing as two systems of thinking: a fast, intuitive system 1; and an analytically engaged system 2.⁵⁷ A number of experiments conducted in the US have found that participants who don't engage their analytical

⁵⁶ ACE and Dora-Olivia Vicol, 'Media and Information Literacy: Lessons from around the World.' (London: Full Fact and Africa Centre for Evidence, 2020), fullfact.org/media/uploads/media-information-literacy-lessons.pdf.

⁵⁷ Daniel Kahneman, *Thinking, Fast and Slow* (Macmillan, 2011).

thinking are more susceptible to believing misinformation.⁵⁸ A recent study with a British sample has found the same applied to belief in conspiracy theories.⁵⁹

The authors began by looking for correlations between participants' scores on the BCTI, one of the several scales used to measure belief in conspiracy theories, and their scores on a scale which captures self-reported preferences for thinking analytically (with questions like 'I enjoy problems that require hard thinking'), or intuitively ('I often go by my instincts when deciding on a course of action').

As expected, conspiracy beliefs were stronger for intuitive thinkers, and weaker for the deliberative types - and for participants who scored high on a metric of open mindedness. What is also interesting to observe however, is that subsequent experiments also found that conspiracy beliefs could be moderated by tasks which primed participants to think more analytically, as follows.

In one version of the experiment, just over 100 student participants were asked to complete the BCTI scale measuring conspiracy belief, together with a series of other unrelated questionnaires, included to mask the purpose of the study. Five weeks later, the same participants were called back, and asked to engage in a short verbal exercise.

Imagine seeing a list of five words: "man away postcard the walked". The exercise requires you to remove one word, then reassemble the others to form a sentence. If it takes some time to figure out, it's because the exercise is deliberately designed to require you to focus. Within a few seconds, you would likely extract "postcard" from the list, and form a new sentence that reads: "the man walked away". The experiment would then ask you to retake the BCTI questionnaire, together with a series of distractor questions.

The authors found that the group who had been stimulated to think analytically had significantly lower conspiracy belief scores than the control group. This was then replicated in subsequent studies of students, and the general (but not representative) population, which found the same tendency: thinking analytically can offer some defence against conspiracy beliefs.

58 Gordon Pennycook and David G. Rand, 'Lazy, Not Biased: Susceptibility to Partisan Fake News Is Better Explained by Lack of Reasoning than by Motivated Reasoning', *Cognition* 188 (2019): 39–50.

59 Viren Swami et al., 'Analytic Thinking Reduces Belief in Conspiracy Theories', *Cognition* 133, no. 3 (1 December 2014): 572–85, doi.org/10.1016/j.cognition.2014.08.006.

Recommendations

For some people, we do not yet know how many, conspiracism may become all consuming. There may not be much we can do to change this, and research in this area is just emerging. But if our target is the general public, there are still things we can do: to correct the record, to prevent unsubstantiated beliefs from traveling to the general public, and to pre-emptively raise awareness of the situations in which conspiracy theories thrive.

Corrections

If you find yourself sharing a platform with a conspiracy supporter, refute.

Don't leave unsubstantiated theories unchallenged

Several studies of conspiracy theories about vaccine safety, climate change, and 9/11 have shown that presenting an audience with conspiracy supporting materials without making it clear where the evidence lies, increases belief in those theories. If you find yourself in a press interview, a radio show, or any other format where a conspiracy theory is voiced, leave no doubt about where the evidence lies. Avoid a “false balance” format, where scientific consensus and unsubstantiated speculations are given equal weight.

Correct conspiracy theories when they have reached public debate

The research we reviewed found that, in general, corrections can lower conspiracy beliefs. Text-based explanations which give readers the facts, and that steer clear of fear-inducing imagery and other format features that might suggest a redaction, have been found to lower participants' conspiracy beliefs. There are still substantial methodological limitations, primarily the absence of field research. But the least we can do until more research becomes available, is correct the record. While questions remain around the most effective format for corrections, we do know that not correcting unsubstantiated theories can give them traction.

But ask yourself if, and where, every correction is worth publicising

When you publicise a fact check, you are also giving the claim renewed exposure - especially if you bring it to the attention of people who wouldn't see it otherwise. While survey-based experimental research suggests that a clear fact check accompanying the claim should ensure audiences take away the correct information, there is still a risk that the overall publicity of the fact check increases attention to the original set of

claims.⁶⁰ A social media user could make up an allegation about the flu vaccine every day on social media, such as: “it makes your skin itch”, or “no vaccine has been tested to see if it causes tooth decay”. Interventions by media or internet companies using fact checkers’ work can help prevent them from spreading. But if we then share these fact checks on other channels, the sheer volume of anti-vaccination stories we unearth might make the audience think that: “there must be some substance behind these claims, because there’s no smoke without fire”. Admittedly, it’s hard to determine at what point a claim is viral, and on which channels. But before we tackle a conspiracy theory, it is worth asking ourselves: are audiences likely to hear or have heard this myth.

When you cover anti-vaccination attitudes, don’t use fear-inducing materials

We have looked at this in depth in a separate briefing, but it’s worth reiterating.⁶¹ Studies which have used fear-inducing images of sick children, or dramatic narratives of sickness have generally found an increased belief in inaccurate claims about vaccine safety, and either the same with intention to vaccinate, or no effect. Stick to factual evidence.

Prevention

Remind public figures that the tone of public debate influences belief in conspiracies

A substantial body of research has found that belief in conspiracy theories is correlated with feelings of uncertainty and powerlessness. But we are not born feeling powerless. This is also something we experience in crises and scandal-filled political moments which erode our trust in government, and in highly polarising scenarios where it feels like the government only works for some. Fact checkers have a responsibility to work with public figures to raise the standard of public debate. We can call for a higher standard of transparency and rigour, to seek to build public trust. And we can ask that the usual deliberations which are part of the democratic process do not spiral out into a game of us and them, which can make whole sections of the public feel like political losers.

⁶⁰ Victoria Kawan, ‘Responsible Reporting in an Age of Information Disorder’ (First Draft, 2019), firstdraftnews.org/how-journalists-can-responsibly-report-on-manipulated-pictures-and-video.

⁶¹ Dora-Olivia Vicol and ACE, ‘Health Misinformation in Africa, Latin America and the UK: Impacts and Possible Solutions’ (London: Full Fact and Africa Centre for Evidence, 2020), fullfact.org/media/uploads/en-tackling-health-misinfo.pdf.

Encourage public figures and information institutions to preempt conspiracy theories by filling information gaps

A big part of conspiracy beliefs is our need to know. The research we reviewed made it clear that we sometimes turn to conspiracy theories in an attempt to understand major disruptive events, and make sense of novelty. Fact checkers can work with public communicators to fill that explanatory gap.

Teach the public how they can defend themselves against conspiracy beliefs, by exposing the tactics of conspiracy supporters

The literature on inoculation makes it clear that providing accurate information and exposing the tactics used by conspiracy supporters can equip the public with the tools to defend themselves. Find the tactics frequently used in conspiracy theories (such as the use of false experts and false balance), and expose them.

Cultivate analytical thinking

It is important to make it clear that we are not prisoners of our beliefs. We can get better at discerning fact from fiction, and at seeing through conspiracy theories, with a bit of analytical thinking. Teach the public how beliefs are formed, and what they can do to defend themselves.

Talking to a conspiracy supporter

Changing the minds of convinced conspiracy supporters is hard. The only recommendations we have come across in this sense come from a 2020 briefing by psychologists at the University of Bristol, and are derived from research on political extremism.⁶² This absence of research a lot about how much we have left to discover in understanding conspiracism.

Have and show empathy

If the goal is to develop our interlocutors' open-mindedness, communicators must lead by example.

Avoid ridicule

This risks instantly alienating convinced conspiracy supporters.

Affirm critical thinking

Remember that, in rejecting official accounts, conspiracy supporters indirectly affirm themselves as critical thinkers. Use this to build rapport, and redirect the power of critical thinking towards a re-examination of the theory.

62 Stephan Lewandowsky and John Cook, 'The Conspiracy Theory Handbook', 2020, 12.

If possible, use trusted sources

Counter-messages by former members of an in-group are evaluated more positively than those from external sources.

Ideas for further exploration

Can we all become more aware of how we think? We talk a lot about conspiracy theories that other people believe. But as psychologists have demonstrated, conspiracy beliefs are not just about whether we have the right information or not. They are also about how we process information. They are about our need to know, and to control uncertainty, a need to explain injustice, and to feel better about the social groups we are a part of.

Is this something we could teach, and would it increase our immunity to conspiracy beliefs in the future? For example, would learning that you generally tend to believe in conspiracy theories help moderate your beliefs? We don't yet have a blueprint for this exercise in public awareness raising. But this is an area fact checkers could think about, in the same way that we think about cultivating general media literacy programs.

How we selected the studies

This briefing is primarily informed by two strands of literature from psychology and political science. First, we looked at recent literature reviews. This enabled us to summarise what is currently known about belief in conspiracy theories, the various ways of measuring it, and believers' motivations. Second, we took a closer look at studies which tested particular interventions, in an attempt to give fact checkers a set of practical tools for how to fight, or prevent, conspiracy beliefs.

Due to space constraints, we could not engage with literature from Cultural Studies and Science and Technology Studies - though it does provide a nuanced account of the social construction of expertise.

It is important to recognise that research on conspiracy theories suffers from a few caveats.

Caveats

Conspiracy theory research is still extremely new - even though, ironically, examples of conspiracy theories go back to at least the Middle Ages. A recent literature review noted that, from the total of 96 studies examined, more than half were published as recently as between 2015 and 2018.⁶³ The literature has also focused extensively on the United States and Europe. Nearly 80% of all studies reviewed were conducted on those two continents, with only four studies focused exclusively on the Global South.

This novelty and geographical bias matter. There are still debates about what explains belief in conspiracy theories. For instance, some studies found an association with paranormal beliefs, while others did not; some surveys found an association with open mindedness, but not others. The conversation of what exactly motivates this belief, beyond the three main axes discussed here (epistemic, existential, and social), is still developing.

There is also a level of debate on whether we can call the general tendency of some people to believe in more conspiracy theories an actual mindset. Several authors do.⁶⁴ But as a nuanced piece published in a behavioural sciences journal notes, we do not

63 Andreas Goreis and Martin Voracek, 'A Systematic Review and Meta-Analysis of Psychological Research on Conspiracy Beliefs: Field Characteristics, Measurement Instruments, and Associations with Personality Traits', *Frontiers in Psychology* 10 (2019): 205.

64 Martin Bruder et al., 'Measuring Individual Differences in Generic Beliefs in Conspiracy Theories Across Cultures: Conspiracy Mentality Questionnaire', *Frontiers in Psychology* 4 (2013), doi.org/10.3389/fpsyg.2013.00225.

yet know whether believing in multiple conspiracy theories reflects a particular set of attitudes, cognitive processes, or susceptibility.⁶⁵

Perhaps most notably, researchers are still testing ways of tackling belief in conspiracy theories - and here too we need a lot more field research with nationally representative samples to establish what really works.

This briefing thus marks a first stage in the conversation between academic research on conspiracy theories and fact checking. As with all pieces which seek to provide practical recommendations, it will benefit from field testing, feedback, and revision, in light of further available evidence.

⁶⁵ Robbie M Sutton and Karen M Douglas, 'Conspiracy Theories and the Conspiracy Mindset: Implications for Political Ideology', *Current Opinion in Behavioral Sciences* 34 (1 August 2020): 118–22, doi.org/10.1016/j.cobeha.2020.02.015.

Bibliography

- ACE, and Dora-Olivia Vicol. 'Media and Information Literacy: Lessons from around the World.' London: Full Fact and Africa Centre for Evidence, 2020. fullfact.org/media/uploads/media-information-literacy-lessons.pdf.
- Adley, Esther. 'Study Shows 60% of Britons Believe in Conspiracy Theories'. The Guardian, 23 November 2018, sec. Society. theguardian.com/society/2018/nov/23/study-shows-60-of-britons-believe-in-conspiracy-theories.
- Allington, Daniel, Bobby Duffy, Simon Wessely, Nayana Dhavan, and James Rubin. 'Health-Protective Behaviour, Social Media Usage and Conspiracy Belief during the COVID-19 Public Health Emergency'. *Psychological Medicine*, 2020, 1–7. doi.org/10.1017/S003329172000224X.
- Banas, John A., and Gregory Miller. 'Inducing Resistance to Conspiracy Theory Propaganda: Testing Inoculation and Metainoculation Strategies'. *Human Communication Research* 39, no. 2 (2013): 184–207.
- Banas, John A., and Stephen A. Rains. 'A Meta-Analysis of Research on Inoculation Theory'. *Communication Monographs*, 1 September 2010. doi.org/10.1080/03637751003758193.
- Bell, Chris. 'The People Who Think 9/11 May Have Been an "inside Job"'. BBC News, 1 February 2018, sec. BBC Trending. bbc.com/news/blogs-trending-42195513.
- Bilewicz, Michal, Mikołaj Winiewski, Mirosław Kofta, and Adrian Wójcik. 'Harmful Ideas, The Structure and Consequences of Anti-Smitic Beliefs in Poland'. *Political Psychology* 34, no. 6 (2013): 821–839.
- Black, Allida, ed. 'Joseph R. McCarthy (1908-1957)'. In *Eleanor Roosevelt, John Kennedy, and the Election of 1960: A Project of The Eleanor Roosevelt Papers*. Washington DC: George Washington University, 2003. gwu.edu/~erpapers/mep/displaydoc.cfm?docid=erpn-josmcc.
- Boghardt, Thomas. 'Soviet Bloc Intelligence and Its AIDS Disinformation Campaign'. *Studies in Intelligence* 53, no. 4 (2009). cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol53no4/pdf/U-%20Boghardt-AIDS-Made%20in%20the%20USA-17Dec.pdf.
- Brewer, Noel T., Gretchen B. Chapman, Alexander J. Rothman, Julie Leask, and Allison Kempe. 'Increasing Vaccination: Putting Psychological Science Into Action'. *Psychological Science in the Public Interest* 18, no. 3 (1 December 2017): 149–207. doi.org/10.1177/1529100618760521.
- Bruder, Martin, Peter Haffke, Nick Neave, Nina Nouripanah, and Roland Imhoff. 'Measuring Individual Differences in Generic Beliefs in Conspiracy Theories Across Cultures: Conspiracy Mentality Questionnaire'. *Frontiers in Psychology* 4 (2013). doi.org/10.3389/fpsyg.2013.00225.
- Cichocka, Aleksandra, Marta Marchlewska, Agnieszka Golec de Zavala, and Mateusz Olechowski. "'They Will Not Control Us": Ingroup Positivity and Belief in Intergroup Conspiracies'. *British Journal of Psychology* 107, no. 3 (2016): 556–576.
- Cook, John, Stephan Lewandowsky, and Ullrich KH Ecker. 'Neutralizing Misinformation through Inoculation: Exposing Misleading Argumentation Techniques Reduces Their Influence'. *PloS One* 12, no. 5 (2017): e0175799.
- Douglas, Karen M., Robbie M. Sutton, and Aleksandra Cichocka. 'The Psychology of Conspiracy Theories'. *Current Directions in Psychological Science* 26, no. 6 (1 December 2017): 538–42. doi.org/10.1177/0963721417718261.

- Douglas, Karen M., Joseph E. Uscinski, Robbie M. Sutton, Aleksandra Cichocka, Turkey Nefes, Chee Siang Ang, and Farzin Deravi. 'Understanding Conspiracy Theories'. *Political Psychology* 40 (2019): 3–35.
- Edelson, Jack, Alexander Alduncin, Christopher Krewson, James A. Sieja, and Joseph E. Uscinski. 'The Effect of Conspiratorial Thinking and Motivated Reasoning on Belief in Election Fraud'. *Political Research Quarterly* 70, no. 4 (2017): 933–946.
- Einstein, Katherine Levine, and David M. Glick. 'Scandals, Conspiracies and the Vicious Cycle of Cynicism'. In *Annual Meeting of the American Political Science Association*, 2013.
- Goertzel, Ted. 'Belief in Conspiracy Theories'. *Political Psychology*, 1994, 731–742.
- Goreis, Andreas, and Martin Voracek. 'A Systematic Review and Meta-Analysis of Psychological Research on Conspiracy Beliefs: Field Characteristics, Measurement Instruments, and Associations with Personality Traits'. *Frontiers in Psychology* 10 (2019): 205.
- Gottfried, Jeffrey, and Elizabeth Grieco. 'Younger Americans Are Better than Older Americans at Telling Factual News Statements from Opinions'. *Pew Research Center* (blog), 2018. [pewresearch.org/fact-tank/2018/10/23/younger-americans-are-better-than-older-americans-at-telling-factual-news-statements-from-opinions](https://www.pewresearch.org/fact-tank/2018/10/23/younger-americans-are-better-than-older-americans-at-telling-factual-news-statements-from-opinions).
- GPEI. 'Nigeria Three Years Free from Wild Poliovirus'. *Global Polio Eradication Initiative* (blog), 2019. polioeradication.org/news-post/nigeria-three-years-free-from-wild-poliovirus.
- Howell, Elizabeth, and 2019. 'Moon-Landing Hoax Still Lives On, 50 Years After Apollo 11. But Why?' *Space.com*. Accessed 22 July 2020. [space.com/apollo-11-moon-landing-hoax-believers.html](https://www.space.com/apollo-11-moon-landing-hoax-believers.html).
- Jolley, Daniel, and Karen M. Douglas. 'Prevention Is Better than Cure: Addressing Anti-Vaccine Conspiracy Theories'. *Journal of Applied Social Psychology* 47, no. 8 (August 2017): 459–69. doi.org/10.1111/jasp.12453.
- . 'The Effects of Anti-Vaccine Conspiracy Theories on Vaccination Intentions'. *PLOS ONE* 9, no. 2 (20 February 2014): e89177. doi.org/10.1371/journal.pone.0089177.
- Kahneman, Daniel. *Thinking, Fast and Slow*. Macmillan, 2011.
- Leal, Hugo. 'Disinformation and Conspiracy Theories'. In *Routledge Handbook of Conspiracy Theories*, 497–511. Abingdon and New York: Routledge, 2020.
- Lewandowsky, Stephan, and John Cook. 'The Conspiracy Theory Handbook', 2020, 12.
- Nyhan, Brendan, Franklin Dickinson, Sasha Dudding, Enxhi Dylgjeri, Eric Neiley, Christopher Pullerits, Minae Seog, Andy Simpson, Heather Szilagyi, and Colin Walmsley. 'Classified or Coverup? The Effect of Redactions on Conspiracy Theory Beliefs'. *Journal of Experimental Political Science* 3, no. 2 (2016): 109–123.
- Pennycook, Gordon, and David G. Rand. 'Lazy, Not Biased: Susceptibility to Partisan Fake News Is Better Explained by Lack of Reasoning than by Motivated Reasoning'. *Cognition* 188 (2019): 39–50.
- Popper, Karl R. *The Open Society and Its Enemies*. 5th ed. Princeton University Press, 1966.
- Schaeffer, Katherine. 'Nearly Three-in-Ten Americans Believe COVID-19 Was Made in a Lab'. *Pew Research Center* (blog), 2020. [pewresearch.org/fact-tank/2020/04/08/nearly-three-in-ten-americans-believe-covid-19-was-made-in-a-lab](https://www.pewresearch.org/fact-tank/2020/04/08/nearly-three-in-ten-americans-believe-covid-19-was-made-in-a-lab).
- Swami, Viren, Jakob Pietschnig, Ulrich S. Tran, Ingo W. Nader, Stefan Stieger, and Martin Voracek. 'Lunar Lies: The Impact of Informational Framing and Individual Differences in Shaping Conspiracist Beliefs about the Moon Landings'. *Applied Cognitive Psychology* 27, no. 1 (2013): 71–80.

- Swami, Viren, Martin Voracek, Stefan Stieger, Ulrich S. Tran, and Adrian Furnham. 'Analytic Thinking Reduces Belief in Conspiracy Theories'. *Cognition* 133, no. 3 (1 December 2014): 572–85. doi.org/10.1016/j.cognition.2014.08.006.
- Swift, Art. 'Majority in U.S. Still Believe JFK Killed in a Conspiracy'. Gallup.com, 15 November 2013. news.gallup.com/poll/165893/majority-believe-jfk-killed-conspiracy.aspx.
- Taylor, Steven. *The Psychology of Pandemics: Preparing for the Next Global Outbreak of Infectious Disease*. Cambridge Scholars Publishing, 2020.
- Uscinski, Joseph E., Casey Klofstad, and Matthew D. Atkinson. 'What Drives Conspiratorial Beliefs? The Role of Informational Cues and Predispositions'. *Political Research Quarterly* 69, no. 1 (2016): 57–71.
- Van der Linden, Sander, Anthony Leiserowitz, Seth Rosenthal, and Edward Maibach. 'Inoculating the Public against Misinformation about Climate Change'. *Global Challenges* 1, no. 2 (2017): 1600008.
- Vicol, Dora-Olivia. 'Who Believes and Shares Misinformation?' London: Full Fact, 2020. fullfact.org/media/uploads/who-believes-shares-misinformation.pdf.
- Vicol, Dora-Olivia, and ACE. 'Health Misinformation in Africa, Latin America and the UK: Impacts and Possible Solutions'. London: Full Fact and Africa Centre for Evidence, 2020. fullfact.org/media/uploads/en-tackling-health-misinfo.pdf.
- Waal, Joel R de. 'Brexit and Trump Voters Are More Likely to Believe in Conspiracy Theories | YouGov', 2018. yougov.co.uk/topics/international/articles-reports/2018/12/14/brexit-and-trump-voters-are-more-likely-believe-co.
- Waldersee, Victoria. 'Which Science-Based Conspiracy Theories Do Britons Believe? | YouGov', 2019. yougov.co.uk/topics/science/articles-reports/2019/04/25/which-science-based-conspiracy-theories-do-britons.
- Wellcome Trust. 'Chapter 5: Attitudes to Vaccines'. Wellcome Global Monitor 2018. London: Wellcome Trust, 2018. wellcome.ac.uk/reports/wellcome-global-monitor/2018/chapter-5-attitudes-vaccines.
- Wood, Michael J., Karen M. Douglas, and Robbie M. Sutton. 'Dead and Alive: Beliefs in Contradictory Conspiracy Theories'. *Social Psychological and Personality Science* 3, no. 6 (2012): 767–773.

Full Fact

2 Carlton Gardens
London
SW1Y 5AA



research@fullfact.org



[@FullFact](https://twitter.com/FullFact)



fullfact.org

Africa Check

Johannesburg



africacheck.org

Chequeado

Buenos Aires



chequeado.com

This research was supported by a grant from Luminate.

Published by Africa Check, Chequeado and Full Fact, May 2020. Updated July 2020.

Published under the Creative Commons Attribution-ShareAlike 4.0 International License.