Individual, intergroup and nation-level influences on belief in conspiracy theories

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ABSTRACT

Conspiracy theories are part of mainstream public life, with the potential to undermine governments, promote racism, ignite extremism, and threaten public health efforts. Psychological research on conspiracy theories is booming, with more than half of the academic articles on the topic published since 2019. In this Review, we synthesize this literature, with an eye to understanding the psychological factors that shape willingness to believe conspiracy theories. We begin at the individual level, examining the cognitive, clinical, motivational, personality, and developmental factors that predispose people to believe conspiracy theories. Drawing on insights from social and evolutionary psychology, we then review research examining conspiracy theories as an intergroup phenomenon that reflects and reinforces societal fault lines. Finally, we examine how conspiracy theories are shaped by the economic, political, cultural, and socio-historical contexts at the national level. This multilevel approach offers a deep and broad insight into conspiracist thinking that increases understanding of the problem and offers potential solutions.

[H1] Introduction

In laying out a case for revolution, the authors of the Declaration of Independence relied heavily on a conspiracy theory[1]: Policies such as taxes on tea were not, as Parliament claimed, merely a way of having colonies pay their fair share for the costs of keeping them in the British Empire. Rather, they were part of a hidden agenda to exert an oppressive dictatorship over what later became the United States of America. The Declaration of Independence example illustrates that conspiracy theories do not just reside in the mind or heart of individuals. Frequently, they are positioned within intergroup contests, and are shaped also by sociopolitical, economic and cultural factors. Examples like this are also a reminder that conspiracy theories are not new phenomena. Although it is common wisdom that society is increasingly prone to conspiracy theories—or that society is entering a golden age of conspiracy theories—historical analyses find no support for this notion[2,3]. Rather, there has been a steady drumbeat of conspiracy theories for centuries, and some have argued that the propensity to engage with them has an evolutionary basis[4].

Although belief in conspiracy theories is not a new phenomenon, what is relatively new is to treat conspiracy theories as an issue worthy of psychological inquiry. More than half of academic publications on conspiracy theories in psychology have been published since 2019. The growth in research interest is partly grounded in the position that conspiracy theories can have serious, negative effects that need to be managed. For example, conspiracy beliefs are implicated in a number of anti-science attitudes, slowing society's ability to respond to challenges associated with climate change[5-9] and public health crises[10-16]. Conspiracy theories also trigger political aggression: they are used as tools to derogate political opponents[17], encourage political violence[18,19], promote prejudice[18,20,21], and recruit terrorists[22]. More generally, conspiracy beliefs help accelerate and consolidate mistrust of—and anxiety about—established institutions, including government[23,24]. Although a degree of

healthy skepticism about official accounts of events should be encouraged, chronic skepticism becomes a problem as people ignore established facts and resist solutions to societal problems. As such, the 'conspiracy theorist' has become emblematic of what some have called the anti-enlightenment movement[25] and others have called the post-truth society[26].

In this Review, we provide a narrative synthesis of the literature on belief in conspiracy theories organized by level of analysis (Fig. 1). First, we describe the individual-level factors that might predispose individuals to believe conspiracy theories (micro level of analysis). Next, we review research examining conspiracy theories as an intergroup phenomenon (meso level of analysis), which recognises that conspiracy theories are reinforced and negotiated among collectives, reflecting and creating societal fault lines. We then examine how belief in conspiracy theories is shaped by economic, political, cultural, and socio-historical contexts (macro level of analysis). We conclude by considering how insights at these different levels can be integrated, and offer suggestions for future research .

Before beginning, some definitional housekeeping is required. There is debate in both the psychological and philosophical literature about what beliefs warrant the label 'conspiracy theory'[27-29]. Here we rely on the definitions typically used in the psychological literature, according to which a conspiracy theory is an explanation for important events and circumstances that involve secret plots by groups with malevolent agendas[30]. For the sake of conciseness, we use the term 'conspiracy belief' to refer to both belief in specific conspiracy theories and the more general worldview that conspiracies are common. We also note that conspiracy theories are conceptually distinct from the broader term 'misinformation'. For example, the belief that 5G causes COVID-19 is not a conspiracy theory. But the belief that telecommunication companies know that 5G causes COVID-19 and have suppressed the

evidence, or that the installation of 5G technology is part of a broader plot to depopulate the earth, are conspiracy theories.

Finally, in line with most academic accounts, we use the term ‘conspiracy theory’ in a way that is agnostic about whether the theory is true. The notion of what constitutes evidence for a theory is subjective, so it would be unsustainable as a definitional practice to draw clear lines separating plausible from implausible conspiracy theories. However, such distinctions are frequently invoked in the literature; indeed, researchers are often drawn to understanding conspiracy theories precisely because they can be fanciful and so discrepant from consensual accounts of reality that they cause problems. We therefore write this Review sympathetic to the notion that motives of powerful elites should be interrogated, and fully aware that conspiracy theories might one day be proven to be true, but also guided by the principle that not all subjective truths are equally valid proxies for reality.

[H1] Individual-level factors

The vast majority of psychological literature on conspiracy belief has focused on factors that predispose individuals to endorse conspiracy theories. There are five broad sub-domains of investigation: cognitive, clinical, motivational, personality, and developmental. Figure 2 presents a summary of meta-analytic evidence for relationships between conspiracy belief and individual-level variables from each of these domains, where available. Because of the sheer quantity of studies on individual-level factors, it is not possible to provide an exhaustive review of all relevant variables. We have attempted to cast the nomological net wide, but were particularly likely to include variables if the field as a whole deemed it to be important (as evidenced by a large number of studies) and/or we judged that the variable is important, illuminating, or potentially generative in terms of understanding the psychology of conspiracy theories. Note that we do not cover research on demographic differences in conspiracy belief because many of these differences are potentially better explained by the

psychological variables that underpin them (for example, effects of education might be explained by other variables such as powerlessness).

[H3] **Cognitive approach**

The cognitive perspective focuses on the logical fallacies displayed by those who believe conspiracy theories. Examples of logical fallacies include confirmation biases (focusing only on evidence that confirms the theory and disregarding inconsistent evidence)[31], identification of illusory patterns in random events[32,33], flawed heuristics such as 'nothing happens by accident' or 'big events must have big causes'[34,35], and willingness to hold conspiracy beliefs that appear to be mutually incompatible (for example, simultaneously believing that Princess Diana is still alive and that she was murdered)[36]. This body of research implies that conspiracy beliefs are based on faulty logic rooted in styles of thinking.

One well-established pattern is that conspiracy belief is associated with relatively low levels of analytic thinking and high levels of intuitive thinking. In other words, people who self-report as preferring slow, deliberative, emotionally neutral thinking are less likely to believe conspiracy theories. People who prefer fast, heuristic thinking—grounded in gut feeling and emotion—are more likely to believe conspiracy theories. This relationship has been reported consistently across multiple contexts and measures[37-43] and has also been demonstrated experimentally: compared to control conditions, conspiracy beliefs were reduced when participants were given tasks that elicited analytic thinking[38] and critical thinking[44].

Although analytic thinking is highly correlated with general cognitive ability (e.g., numerical and verbal skill) the two constructs are conceptually separable. Interestingly, when both are measured simultaneously there is evidence that cognitive ability is a somewhat more robust (negative) predictor of conspiracy belief than analytic thinking[45]. This suggests that cognitive ability might be a protective factor in terms of believing conspiracy theories,

perhaps because it helps people make realistic judgements in the face of high quantities of information. As can be seen in Fig. 2, meta-analysis indicates a modest but reliable tendency for people to have stronger conspiracy beliefs the lower their cognitive ability[46]. It is notable that this is the only cognitive construct that is represented in the published meta-analyses to date. As the quantity of studies grow, it is hoped that future meta-analyses can lend greater nuance to the question of how cognitive style is associated with conspiracy beliefs.

An example of this nuanced approach is research examining whether conspiracy belief is linked to a biased tendency to attribute intent. Conspiracy beliefs have been associated with anthropomorphism[47,48], assumptions that inanimate objects are animate[49], and willingness to attribute purpose and consciousness to the movements of geometrical shapes[48]. These variables might reflect a hyper-sensitivity to detecting agency and intent, which could in turn could lead to an intuitive worldview that someone is 'pulling strings' behind random events.

Another line of research has examined whether believers in conspiracy theories display a dispositional propensity to misunderstand the nature of randomness. Data on this issue are mixed. On one hand, conspiracy belief is unrelated to people's ability to judge the randomness of binary strings of Os and Xs[50]. On the other hand, studies have found correlational[51,52] and experimental[53] relationships between conspiracy beliefs and a bias toward overestimating the likelihood of co-occurring or spatially adjacent events, and drawing causal links between them, such as the co-occurrence of COVID-19 cases with 5G infrastructure (the conjunction fallacy). This suggests that those who believe in conspiracy theories have a tendency to base judgements on subjective perceptions of coincidences rather than objective assessment of probabilities.

Finally, a small body of research has examined the tendency to reach conclusions impulsively and based on limited information. This jumping-to-conclusions bias is typically

measured through variants of the bead task: participants are shown two containers holding two types of beads in reversed ratios (for example, one contains 60% orange beads; the other 40% blue beads). Beads are then 'drawn out' one by one and participants declare which container they come from once they feel ready to decide. People who are more likely to believe conspiracy theories tend to make their decision earlier[54] . This bias is also a reliable measure of psychosis-proneness[55], consistent with links between psychosis and conspiracy belief, as discussed in the next section.

[H3] **The clinical approach**.

The cognitive approach focuses on how everyday thinking styles and biases predispose people to believe conspiracy theories. Scholars taking a clinical approach have taken this notion a step further, documenting how conspiracy beliefs can reflect more pervasive disorders of thought. For example, there are links between conspiracy beliefs and almost all personality disorders (which are characterized by disruptive patterns of thinking).[56] Furthermore, paranoid delusions—associated with schizophrenia, bipolar disorder, and some forms of dementia—frequently incorporate conspiracy beliefs.

Schizotypy (a continuum of characteristics ranging from 'normal' levels of unusual thinking to psychosis) is the most commonly examined clinical construct, probably because it can be meaningfully measured in both clinical and sub-clinical populations. Several studies have found that people who are higher in conspiracy beliefs also score higher on self-report measures of schizotypy[37,57,58]. A meta-analytic synthesis of this research found a medium-sized correlation overall (see Fig. 2)[46].

Some researchers have suggested that paranoid ideation (thinking that is dominated by suspicious or persecutory content, and a symptom of several clinical disorders) might link clinical issues to conspiracy beliefs. Indeed, at least twenty studies have documented a relationship between paranoid ideation and conspiracy beliefs[59,60] and meta-analyses

194 demonstrate a medium-sized relationship (see Fig. 2)[46]. However, there are important
195 empirical and conceptual differences between conspiracy beliefs and paranoid ideation[59,61].
196 Whereas paranoia implicates a broad range of sinister actors, conspiracy beliefs tend to
197 specifically implicate powerful elites. Furthermore, people experiencing paranoid ideation
198 tend to see the self as a target of persecution, whereas those who believe conspiracy theories
199 tend to see society more generally as the target. Overall, the research indicates that there may
200 be a pathological underpinning to some conspiracy beliefs, but there is certainly no evidence
201 that conspiracy beliefs are reducible to paranoia.

202 A second stream of clinical literature examined relationships between conspiracy
203 beliefs and affective states. People who are predisposed to believe conspiracy theories tend to
204 feel high levels of self-related threat[62,63] and are more prone than the rest of the population to
205 report emotional distress such as anxiety and depression[64-66]. However, the causal
206 relationship between conspiracy beliefs and emotional distress is unclear. One possibility is
207 that belief in conspiracy theories is a consequence of distress. For example, a conspiracy
208 theory could be a palliative response to rejection[67], a consequence of avoidance coping[68], or a
209 projection of feelings of threat onto an outgroup[64]. Another possibility is that conspiracy
210 theories are a cause of distress; that the notion of elites conducting malevolent hoaxes on the
211 public is inherently depressing and anxiety-provoking. Of course, both causal directions
212 could be true. Indeed, longitudinal research suggests that negative feelings and conspiracy
213 beliefs mutually reinforce each other, creating negative feedback loops of anxiety and
214 mistrust[69].

215 [H3] **The motivational approach**.

216 A broader line of reasoning (mostly in the social psychology literature) proposes that
217 conspiracy theories are motivated beliefs endorsed in an attempt to satisfy unmet
218 psychological needs and desires[30]. For example, in one study participants asked to recall a

threatening experience in which they did not have control endorsed conspiracy theories more than those asked to recall a threatening experience in which they did have control[70]. This result was interpreted to reflect a broader phenomenon, whereby thwarted control motivates people to see illusory patterns in random events as a way of introducing order and predictability to life[70-72]. Subsequent correlational research confirmed the relationship between control and conspiracy beliefs[73,74].

However, not all literature is sympathetic to the control argument. Some studies highlight a paradox: although people display stronger conspiracy belief when denied control, exposure to conspiracy theories typically reduces people's sense of control and autonomy[6,12,75]. In addition, there has been mixed success in replicating the experimental effects of control; some studies have shown similar effects to those reported above[76,77] but others have reported null effects[73,78,79] and one even reported the reverse effect[80]. Overall, a meta-analysis revealed a non-significant relationship between control and conspiracy beliefs (see Fig. 2)[81]. The mixed experimental evidence calls into question the notion that lack of control has a causal effect on conspiracy beliefs.

Others have found effects of the parallel construct of power: correlational research shows that conspiracy beliefs are associated with perceived powerlessness[23,82-84] and powerlessness might explain why conspiracy belief is somewhat higher among those with less education[85]. However, there is no experimental evidence that causally links power to conspiracy beliefs.

Like the need for control and power, the need for belonging is a well-established human drive[86]. It might seem paradoxical that a need for belonging could be implicated in people's willingness to believe conspiracy theories given that 'conspiracy theorists' are frequently targets for stigma and ridicule. However, the internet has realigned traditional notions of inclusion and exclusion. In the face of stigma, people turn to supportive sub-

communities to provide emotional and social ballast[87,88], and these sub-communities are easy to find on social media. People might choose to engage with reinforcing online conspiracist communities for social nourishment when they feel isolated or lonely[89]. Evidence that conspiracy beliefs are higher among those experiencing isolation, loneliness, and rejection[66,67,90] reinforce the notion that people might be drawn to conspiracy theories to nourish a need for belonging.

Related to the need for belonging is the need for self-esteem. Despite the risk of stigma, subscribing to conspiracy theories might help people feel clever, unique, or special. At the heart of many conspiracy theories are several presumptions that are potentially self-enhancing: that those who believe these theories have access to secret knowledge that the mainstream is not sophisticated enough to access (the 'do your research' argument); that those who believe conspiracy theories are flexible free-thinkers, compared to the blinkered or sheep-like minority (the 'wake up' argument); and that those who believe conspiracy theories are on a critical mission and represent a brave minority working to revolutionise how society operates (the 'speaking truth to power' argument)[91]. Although there is no empirical evidence for these self-enhancing benefits, research has shown that conspiracy beliefs increase when one's personal image is threatened[92] and are somewhat higher among those who have a strong need for uniqueness[93,94].

Finally, there is emerging evidence that conspiracy beliefs satisfy a desire for entertainment. Certainly, there is a large viewership for online conspiracy channels—many of which seem explicitly geared toward fun and entertainment—and many thrillers and dramas use conspiracies as a plot device owing to the sense of mystery and puzzle-solving that they evoke. Indeed, there is empirical evidence that conspiracy theories satisfy a desire for entertainment: conspiracist narratives were rated as more entertaining than non-conspiracist

texts, and people were more likely to believe conspiracy theories that they found entertaining[95].

[H3] **The personality approach**.

Consistent with the entertainment argument, conspiracy beliefs are positively associated with a trait-like disposition toward sensation-seeking[95]. This finding reinforces the notion that personality might play a role in understanding who believes in conspiracy theories (and why). Indeed, theoretical arguments have been advanced for how Big Five personality variables could be used to create a profile of those who believe conspiracy theories. These arguments include that openness to experience should play a role in conspiracy belief via the tendency to seek novel and unusual ideas[96], that those low in agreeableness will harbour levels of suspicion and antagonism that characterize many conspiracy beliefs[96-99], and that people high in neuroticism are more likely to experience uncertainty and anxiety, both of which characterize those who believe conspiracy theories[100,101]. However, two meta-analyses found mostly non-significant relationships between conspiracy beliefs and Big Five variables; the largest correlation (between conspiracy beliefs and agreeableness) was only -.07 (see Fig. 2)[46,102].

More fruitful have been efforts to link conspiracy beliefs with the Dark Triad: narcissism[92,94,103], Machiavellianism[58,104], and psychopathy[37,58]. All three Dark Triad traits are associated with conspiracy belief, which suggests that those who believe conspiracy theories have relative disregard for the interests of others. The 'selfish actor' model of those who believe conspiracy theories has been reinforced by research during the COVID-19 pandemic: people who endorsed COVID-19 conspiracy theories were more likely to stockpile[105] and less likely to engage in actions that protected others (such as social distancing) [10,106-108]. Furthermore, endorsement of COVID-19 conspiracy theories was positively associated with

anxiety about one's own health and negatively associated with anxiety about the health of others[108,109].

[H3] **The developmental approach**.

Finally, although there has been progress creating measures of conspiracy belief suitable for children and adolescents[110], there has been little research on how conspiracy beliefs develop across the lifespan. Some have suggested that developmental experiences can impact willingness to believe conspiracy theories owing to their role in shaping attachment styles. For example, one study found that conspiracy beliefs were associated with anxious but not avoidant attachment[111]. However, another study found the opposite pattern of findings[112]. Although these associations with anxious and/or avoidant attachment styles suggest that the propensity to believe conspiracy theories might be rooted in early childhood experiences, the conflicting results highlight the need to further study the relationship between attachment and conspiracy belief. More generally, it is clear that research on the developmental aspects of conspiracy beliefs is in its infancy and should be a priority for research going forward.

[H3] **Summary of individual-level factors**

Hundreds of studies have investigated conspiracy theories at the individual level, many of which have been published in the past three years. Perhaps unsurprisingly, there is still a tendency for these research streams to be siloed within disciplinary boundaries. In the early days of understanding a phenomenon this is not always a problem: after all, diverse disciplinary norms bring diverse perspectives, methodologies, and theoretical approaches. Having said that, it is time for greater cross-disciplinary interaction in the study of conspiracy beliefs, and signs are positive in this regard: references from the 2020s suggest an increase in interdisciplinary collaborations, particularly between cognitive and social perspectives.

Inspection of Figure 2 suggests some dead ends: there has been disproportionate interest in Big Five personality explanations which have amounted to little in terms of

explaining conspiracy beliefs. Furthermore, the field has suffered from methodological narrowness: there has been a heavy reliance on cross-sectional correlational studies, and where experiments have been conducted they often relied on lab-based paradigms with questionable generalisability and reproducibility. There is currently little in the way of secondary analyses of big data, research that tracks conspiracy beliefs over time, or developmental approaches. In the past three years these methodological choices have been partly dictated by the need for quick answers to the pressing problems associated with the COVID-19 public health crisis. But as this time-urgency fades, and as individual researchers coalesce into global research consortia, there will be more capacity for ambitious, large-scale, longitudinal research.

[H1] Intergroup dynamics

An implication of the individual-level approach is that there are some people who are prone to believing conspiracy theories, and others who are not. By contrast, an intergroup approach highlights the extent to which everybody is prone to conspiracy theories depending on the sociohistorical context. Indeed, according to the adaptive conspiracism hypothesis[4] the predisposition to believe conspiracy theories evolved as an adaptive tendency to be alert to—and to protect against—hostile coalitions or outgroups. Although these evolutionary underpinnings are difficult to prove (or falsify) the adaptive conspiracism hypothesis reinforces an uncontroversial point: by definition, conspiracy theories involve beliefs about the actions and agendas of coalitions of individuals, and they frequently have an intergroup element that crosses ideological, national, ethnic, religious, or political fault lines. Conspiracy theories alert group members to potential threats, and can be used to rationalize ingroup aggression toward others[113]. This feedback loop, whereby feelings of victimhood simultaneously reinforce and are used to weaponise conspiracy theories, can be extremely dangerous (see Box 1).

342 According to social identity theory, intergroup context shapes appraisals of
343 information[114]. Salient intergroup contexts lead to a perceived enhancement of ingroup
344 similarities and outgroup differences, which biases perceptions of whether a message is
345 truthful and well-intentioned[115]. In line with this perspective, an individual's conspiracy
346 belief is partly influenced by the extent to which other group members also believe that
347 conspiracy theory[116]. Furthermore, social identity theory is based on the simple observation
348 that there is a general bias toward wanting to think the best of groups to which one
349 belongs[117,118]. A simple extrapolation from this notion is that people might be more likely to
350 believe outgroups are capable of sinister acts of collusion compared to ingroups.

351 Examples of this phenomenon abound. In the 2000s, numerous polls revealed massive
352 international differences in subscription to 9/11 conspiracy theories: whereas 22% of
353 Canadians endorsed the notion that 9/11 was an inside job orchestrated by the US
354 government, 78% of individuals in seven Muslim countries supported this view[119] (see also
355 ref[120]). Similarly, Chinese participants were much more likely to endorse the statement 'The
356 American government is secretly conspiring to harm China' than 'The Chinese government is
357 secretly conspiring to harm America'; but the reverse is true for American participants[121].
358 Finally, New Agers are more likely than Christians to believe the conspiracy that the Catholic
359 Church kept secret Jesus' marriage to Mary Magdalene, and that there is a secret organization
360 protecting the 'holy lineage' that flowed from that union[122]. Clearly, group loyalties
361 powerfully impact which conspiracy theories people are willing to believe[123-125] to the point
362 that one's choice of conspiracy theories can signal group loyalties[126]. Furthermore, there is
363 evidence that people's choices of which coalitions to accuse of secret, malicious activity are
364 motivated by system justification: people might blame negative events on outgroups or
365 malevolent actors within the group[127,128] to preserve the notion that their own social system is
366 fair and legitimate.

The adaptive conspiracism hypothesis[4] suggests that conspiracy theories evolved to help manage outgroup threats. Evidence that some conspiracy theories are triggered by feelings of intergroup threat and powerlessness aligns with this argument. For example, in Indonesia, anti-Western conspiracy theories are correlated with self-reported perceptions of threat and the perception that Western influences have fundamentally changed Muslim identity[129]. Similarly, intergroup conspiracy theories are associated with victimhood-based social identities, perceptions of relative deprivation, and heightened rumination about historical trauma[20,130,131]. Importantly, the role of threat has also been demonstrated experimentally: when participants in Indonesia read an article designed to increase intergroup threat, their endorsement of anti-Western conspiracy theories was higher relative to a low-threat condition[132].

The notion that identity vulnerability is a precursor of conspiracy belief is also reinforced by work on collective narcissism. Collective narcissism reflects fragile group self-esteem: endorsement of the ingroup's greatness combined with a sense that the group is not valued enough by others (for example, 'Not many people seem to fully understand the importance of the Polish nation'). Measures of collective narcissism (but not national identification) are associated with a range of defensive responses, including endorsement of intergroup conspiracy theories in which the ingroup is a target of outgroup aggression[133-135] (see Fig. 2).

From a social identity perspective, collective perceptions should predict endorsement of explicitly intergroup conspiracy theories more strongly than individual processes. For example, research in the Middle East and Africa suggests that endorsement of anti-Western and antisemitic conspiracy theories were associated with (self-reported) collective political consciousness, much more so than by individual feelings of personal control[79]. Accordingly,

some theorists caution against individual-level interventions, arguing instead that conspiracy theories are a form of motivated collective cognition[136].

In sum, there is a growing awareness that conspiracy theories cannot be examined exclusively as an individual-level phenomenon, but the empirical base for the intergroup level of analysis is still emergent. One strength of the research reviewed above is its global and temporal reach: compared to research on individual-level factors, research at the intergroup level is more likely to be situated within countries outside Western, industrialised contexts, and more likely to grapple with collective history and collective memory. However, like individual-level research, the field is overly reliant on cross-sectional, correlational research. A relative scarcity of experimental evidence limits claims of causality, and thereby the potential for interventions that target the intergroup level.

[H1] International differences

In the last five years there has been a growth in understanding of how conspiracy beliefs are shaped by macro-forces embedded in a nation: factors such as culture, economic variables, and trust-sensitive political realities. Early attempts to identify international differences in conspiracy beliefs took a conceptual or anecdotal approach rather than a truly comparative approach. For example, one paper[137] drew on observations of child-rearing practices, sexual mores, and norms of secrecy to make the case that the "Arab-Iranian-Muslim Middle East" created a culture of conspiracist thinking, one that could be understood through a psychoanalytic frame. Also influenced by psychoanalytic theory was the case that US politics (and particularly conservative politics) is geared toward suspicious discontent and conspiracy theorising (a culturally embedded 'paranoid style') .[138]

It is only in the past five years that scholars have begun collecting and interpreting data across multiple nations, with the aim of drawing empirically grounded conclusions about which countries are most prone to conspiracy beliefs (and why). In two cross-national

datasets, participants rated their agreement with globally recognized conspiracy theories (for example, that the moon landing was faked or that 9/11 was an inside job)[139,140]. Three other datasets[141-143] used measures that assess an overall conspiracist mindset or worldview but do not make reference to any single conspiracy theory (for example "events which superficially seem to lack a connection are often the result of secret activities"[98] or "I think that the official version of the events given by the authorities very often hides the truth"[144]).

Unfortunately, these studies do not provide a strong foundation for conclusions about the effects of macro-factors on conspiracy beliefs because the datasets are too small to include relevant controls. Many nation-level factors are highly inter-correlated[145] so it is statistically unreliable to enter more than one group-level variable in a regression at a time. Consequently, scholars are forced to examine bivariate correlations which might be an artefact of covariation with a latent third variable rather than a 'real' relationship. Thus, significant effects must be interpreted with caution and should not be over-interpreted. However, confidence in a relationship grows when it replicates across multiple datasets using different measures, replicates at both the group and individual level of analysis, and can be plausibly explained by theory.

Moreover, some macro-variables have more explanatory power when measured at the individual-level (for example, as perceptions or individual orientations) than when measured using genuinely group-level data. For example, it would make theoretical sense that the cultural variable of uncertainty avoidance[146] would predict conspiracy beliefs, given the demonstrated associations between epistemic anxiety and conspiracy beliefs[30]. However, although individuals who self-report uncertainty avoidance are higher in conspiracy belief, there is limited evidence that cultures with high levels of uncertainty avoidance are prone to believing conspiracies[145]. Similarly, individual perceptions of economic inequality within a nation are robustly associated with conspiracy beliefs[147], but the pattern is not reliably

observed when objective levels of inequality (such as the GINI coefficient[143]) are used. Finally, people with stronger collectivist (versus individualist) orientations have higher conspiracy beliefs [10,141]. There is some evidence that this pattern replicates at the national level: in most (but not all) cross-national datasets, conspiracy belief is higher in collectivist (versus individualist) countries[145]. However, the mechanism underlying these results remains unclear. One possibility is that those with a collectivist orientation are more likely to provide relational explanations for random events and to rely on unofficial sources of information as proxies for reality[10,141], but this explanation remains to be tested in relation to conspiracy theories.

To date, researchers have identified only two nation-level variables that consistently predict conspiracy beliefs across multiple datasets: economic vitality and corruption. First, countries with lower GDP per capita are more likely to endorse conspiracy theories[143]. This dovetails with political science research showing that trust in government tends to increase when the economy is strong and decline when the economy struggles[148-152]. Drawing on institutional theories[153] and democratic theories[154], scholars have argued that economic vitality is a proxy for government competence, and so a valid indicator of whether the government can be trusted. Somewhat consistent with this notion, individual-level data show that people believe conspiracy theories more when their perceptions of current and future economic performance within their nation is relatively poor[143].

Second, conspiracy beliefs are higher in countries that are relatively high on Transparency International's Corruption Perceptions Index[145,155]. These nation-level data dovetail with individual-level data on anomie: conspiracy beliefs are higher when people feel that social bonds of trust are deteriorating [108]. However, GDP per capita and the Corruption Perceptions Index are highly correlated[156], so it is difficult to disentangle whether one or both are the 'active ingredients' shaping conspiracy beliefs.

Another potential macro-level factor that could contribute to conspiracy belief is where a nation lies in terms of the spectrum of democracy versus authoritarianism. Where electoral processes are distorted, civil liberties restricted, and official media are a mouthpiece for propaganda, a conspiracist worldview might be less irrational and more akin to functional cynicism. Indeed, countries that score higher on the Democracy Index (as curated by the Economist Intelligence Unit) tend to be less prone to believing conspiracy theories than are more authoritarian regimes[145]. However, interpreting the robustness of this relationship is not easy. On one hand, this association is less consistent than the associations with GDP per capita and corruption perceptions. On the other hand, the relationship between conspiracy belief and the Democracy Index might be under-estimated, because participants from authoritarian nations might be wary of revealing true levels of suspicion about the actions and motives of elite institutions within their country.

[H1] Integrating levels of understanding

A critical mass of research exists on drivers of conspiracy beliefs at micro (individual), meso (intergroup) and macro (national) levels of analysis, but these typically operate as discrete bodies of literature. Compartmentalisation of literature is not necessarily a problem: it is natural (and sometimes beneficial) for levels of analysis to have their own language, approaches, and theoretical touchstones. However, it is reasonable to ask how the micro, meso and macro explanations of conspiracy beliefs relate to each other, and to consider whether they be integrated into a cohesive whole.

In trying to answer these questions, we recommend lowering expectations that Fig. 1 can be turned into a neat and tidy conceptual model, or that the relationships between the levels can be captured empirically. Hygienic models where constructs relate in predictable and elegant ways might do a disservice to the complexity of the phenomenon at hand, particularly given that the psychology of conspiracy beliefs could change dramatically

491 depending on the conspiracy theory content[18]. For example, it might not be reasonable to
492 expect that the same model applies to conspiracies about a New World Order, Jeffrey
493 Epstein, and vaccines. Rather than envisaging unidirectional arrows between levels,
494 conspiracy theories might be better understood in terms of a systems model where micro,
495 meso, and macro levels mutually reinforce each other in complex and recursive patterns that
496 might shift depending on the conspiracy domain.

497 That said, theory and prior research suggest certain testable propositions about how
498 different levels might relate to each other, which we lay out below. All these pathways
499 involve top-down processes, where more abstract, higher levels contextualise, shape, or
500 moderate lower-level factors. This does not rule out bottom-up processes; micro factors could
501 cause meso or macro processes, analogous to a series of dots forming a gestalt whole in a
502 pointillist painting. However, the theories we draw on are more consistent with top-down
503 processes, and the flow from macro to micro processes is consistent with the logic of
504 multilevel analyses in other literatures.

505 First, although we are not familiar with any research that has explicitly addressed
506 ways in which macro processes (like economic conditions and culture) might shape
507 intergroup processes with regard to conspiracy theories, there is theoretical precedent to make
508 the case. According to the adaptive conspiracism hypothesis[4], socio-ecological factors such
509 as economic crises can cue evolved readiness to attribute events to the deliberate actions of
510 enemy groups. From this perspective, macro level factors might trigger latent predispositions
511 for intergroup conspiracy theories. Other literatures can be drawn on to make a similar case
512 that macro factors can shape whether (and in what way) conspiracy theories manifest at the
513 intergroup level. For example, a key insight in the cross-cultural literature is that collectivist
514 cultures are more prone to self-organising by group identity than individualist cultures. By
515 extension, it could be that culture shapes whether conspiracy theories coalesce into

communities and intergroup contests (as opposed to conspiracy theories that are nurtured by individuals as 'loners'). It is similarly possible that economic inequality and/or populist governments might nudge people toward seeing conspiracy theories through an intergroup lens (such as elites versus the rest or the powerful versus the dispossessed; see Box 2).

Second, it is possible to construct theoretically-driven predictions about how intergroup context might moderate the relationship between individual-level factors and conspiracy beliefs. A fundamental premise of social identity theory is that, when an intergroup context is salient, strongly invested group members will converge around a fuzzy prototype of attitudes, behaviours, and emotions defined by the group identity[114,115]. In other words, strong intergroup contexts trump individual-level variables in terms of shaping attitudes and behaviour. A simple, testable prediction is that the role of individual-level factors in explaining conspiracy beliefs will be weaker when intergroup factors are more intense, for example, in conditions where there is intergroup threat, strong ingroup identification, and/or collective cognitions around historical victimisation.

Extrapolating this logic to the macro level, it could also be argued that individual-level factors will be less diagnostic when there are strong nation-level contexts (for example, in nations with high levels of corruption or economic dysfunction). However, the opposite prediction also seems sustainable: nation-level conditions might provide a backdrop of mistrust or dissatisfaction, which crystallise into conspiracy theories among those who have individual psychologies that predispose them to doing so. From this perspective, both nation-level and individual-level factors might be mutually reinforcing such that the presence of one enhances the role of the other. In other words, micro factors might be the seeds of conspiracist thinking, whereas macro factors provide the fertile ground from which they grow.

Finally, it is plausible to devise a cascade or trickle-down model where conditions established at the macro level (such as cultural, economic, or governance factors) help shape factors at the meso level which in turn influence factors at the micro level. For example, it could be that certain groups will feel marginalised within the specific power structure of their society, which then cascades down to create unmet psychological needs (such as deficits in feelings of control, power, or epistemic certainty).

Although the above propositions are informed by theory, they are still speculative and lack an empirical basis. This should not be surprising: operating at more than one level of analysis simultaneously is not easy—it often requires extensive funding and always requires methodological and theoretical virtuosity. Because it is too early to run sense-checks on the plausibility of the ideas raised above, we are in the somewhat dissatisfying state of presenting multiple pathways (some of which are contradictory). However, this also presents an opportunity by opening new questions and fields of enquiry for future researchers in this space.

[H1] Summary and future directions

In this Review, we synthesized the literature on the interpersonal, intergroup, and nation-level factors that drive conspiracy beliefs. To date, there is far more research documenting the causes of conspiracy beliefs than research that seeks to reduce conspiracy beliefs and their negative effects (see Box 3). This is partly because some of the most-researched factors lead to an intellectual cul-de-sac: if the problem lies in factors that are relatively hard to influence—such as people's pathologies, thinking styles, or personalities, —then this limits the extent to which the problem can be overcome. In addition to providing a more complete understanding of conspiracy beliefs, a multilevel approach suggests new possible solutions, and the next generation of research in this space should examine interventions more directly. That is, future research should look for ways to reduce

conspiracy theorising, or at least to break the link between conspiracy beliefs and behaviours that are destructive for individuals and societies.

Future research should also test the cross-national generalisability of individual-level predictors that have been established in existing literature. Testing the extent to which established correlates drawn from exclusively Western samples replicate in other parts of the world is important both theoretically and practically. The few attempts to test such generalizability have been revealing. For example, there is evidence that the link between conspiracy belief and climate scepticism—once considered universal—is especially pronounced in the U.S.[139]. Theoretically, this finding nuances assumptions that climate scepticism is an expression of a conspiracist worldview, and has implications for understanding the interplay between individual-level and nation-level factors in shaping climate scepticism. The practical benefit of cross-national research is that it allows practitioners, communicators and policy-makers to understand the psychological correlates of conspiracy theorising in their region so they are better equipped to devise and implement interventions.

Finally, a truly multilevel approach to understanding conspiracy theories requires cosmopolitanism not only in theories, methods, and approaches, but also in terms of how academics situate themselves, tonally. Migrating between micro, meso and macro level factors requires an empathic shift as much as an epistemic shift. When scholars have focused on the individual-level, the tone has drifted toward a deficit model defined by what those who believe conspiracy theories lack: they have ‘dark’ personalities, are prone to clinical disorders, demonstrate illogical ways of thinking, and have unmet psychological needs and selfish orientations. At the meso level, there is an emphasis on the destructive nature of conspiracies as a tool of prejudice and conflict. But analysis at the macro level suggests a more compassionate orientation: communities sometimes learn to mistrust elites because

those elites cannot be trusted, and people are doing their best in difficult circumstances to make sense of ambiguous events.

This underscores the importance of being reflexive about our academic stance: rather than seeing ourselves as calm and dispassionate arbiters of reasonableness, we must remember that the inherent reasonableness of official accounts of events might shift depending on the sociopolitical cultures within which one is situated. This creates a kaleidoscopic moral universe: conspiracies are both illogical and logical; truth is both sacred and relative; conspiracies do harm and they have the potential to meet important psychological needs. Scholars may find themselves toggling between a need to fight against destructive mistruths, and sensitivity to the notion that the best long-term solution to systemic mistrust is to demonstrate authentic trustworthiness in political, economic and institutional systems.

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HIGHLIGHTED REFERENCES

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This article outlines the use of an online game to inoculate people against misinformation.

Box 1: Case study

Antisemitic conspiracy theories can be traced to the Middle Ages, when Jewish people were accused of blood libel, host desecration, and well-poisoning. Since then, Jewish people have been accused of an astonishing variety of secret plots: to spread AIDS; to fabricate the Holocaust; to commit acts of terrorism; to make humans androgynous; to dominate the world through financial, media, and military control. Three key conclusions can be drawn from study of antisemitic conspiracy theories.

First, endorsement of antisemitic conspiracy theories is particularly high among those who report low political control[157], strong collective victimhood[20], and frequent rumination about historical trauma[131]. These findings reinforce the notion that Jewish people have become specific scapegoats for abstract feelings of powerlessness, victimhood, and suffering. Conspiracy theories can also serve to rationalise historical acts of violence: experimental evidence showed that endorsement of antisemitic conspiracy theories increased when people were reminded of their own nation's history of anti-Jewish atrocities[158].

Second, antisemitic conspiracy theories are a proximal precursor for violence. Historically, stories of secret Jewish plots have been central features of propaganda campaigns that have precipitated ethnic cleansing. The conspiracy theory that Jewish people are plotting to displace Christian European populations has become a central feature of white supremacist ideology in the West, and appears in the manifestos of numerous domestic terrorists[159]. Research in Poland shows that, of all the varieties of antisemitic belief, conspiracy beliefs were the strongest predictors of antisemitic behavioral intentions[20].

Third, antisemitic conspiracy beliefs are not spontaneously formed by individual actors: they are constructed and disseminated by provocateurs as elements of organized campaigns designed to prepare people for violence (such as the Protocols of the Elders of

Zion pamphlet)[160]. This underscores that conspiracy theories are not just factoids discovered by vulnerable minds. They can also be features of infrastructures of misinformation that are authored, cultivated and designed with specific (and malicious) intent.

Box 2: Populism and conspiracy theories

Early research on political identity and conspiracy theories focused on traditional liberal-conservative dimensions. This research found that those who endorse conspiracy theories occupy both ends of the political spectrum, but conspiracy beliefs are particularly common among people who operate on the ideological extremes [142,161,162]. Populism, on the other hand, describes a political worldview defined by distrust that cuts across these traditional left-right distinctions. According to populist politicians, the world is dichotomized into 'elites' who are corrupt, malicious, and uncaring, and 'ordinary people', characterised by virtue and common sense. Populist politicians frame themselves as representatives of ordinary people who will work within the secretive and corrupt political system to revolutionise it, effectively destroying conspiracies[163]. It is therefore not surprising that populist attitudes and support for populist politicians are reliably associated with conspiracy beliefs[164,165]. For example, people who support former populist President Donald Trump are significantly more vaccine-hesitant than other Americans because they are more prone to conspiracy beliefs[166]. The success of populist politicians internationally in the past decade has prompted commentary that the world is entering an era of politics where the usual trust algorithm is inverted: instead of representing the political system, politicians receive support by affirming suspicions that the political system is untrustworthy and secretive[167]. This phenomenon reminds us that conspiracy beliefs do not always emerge spontaneously at the individual level; they can also be manufactured at the macro-level by political operatives and the media that support them. The interplay between community members and populist politicians is mutually reinforcing: populist politicians train individual actors to view issues through a conspiracist lens, and individual actors enable and reward those efforts with political loyalty.

Box 3: Interventions

Few studies have tested interventions to reduce negative effects of conspiracy beliefs, which either indicates low-hanging fruit for future research or a file-drawer problem. Rebutting a specific conspiracy theory with corrective information reduces support for that specific theory[96,168-171] although these are typically blunt manipulations in pre-post designs that are vulnerable to demand characteristics. Furthermore, there is no evidence that debunking a specific conspiracy theory reduces the broader conspiracy worldview[171,172] or that it is effective for people who have already strongly aligned themselves with the conspiracy. Interestingly, there is evidence that counterarguments are relatively ineffective when they are presented after conspiracist arguments, suggesting that 'prebunking' might be more effective than debunking[173].

A related approach is to 'inoculate' people against conspiracy theories by warning them about manipulative persuasive techniques to which they will be exposed. These strategies have often proved somewhat effective[174-176] although effects are again possibly inflated by demand characteristics. Similar critiques apply to studies that report positive effects of priming resistance to persuasion[177] or analytic thinking[38]; a study designed to manipulate analytic thinking in a way that reduced demand effects had inconsistent results[178].

It should not be surprising that cognitive interventions have only modest success: after all, conspiracy theories are notoriously difficult to falsify, and conspiracy beliefs are shaped in part by non-rational processes[136]. But alternative approaches designed to indulge the psychological needs that predispose people to conspiracy theories have also had mixed success. For example, early suggestions that self-affirmations[67] or control inductions[77] could be used to reduce conspiracy beliefs subsequently waned owing to the mixed evidence that lack of control has a causal effect on conspiracy beliefs[81,179]. However, in one of the few

studies that took an intergroup approach, inducing empathy toward Chinese people reduced endorsement of the Wuhan lab COVID-19 conspiracy[169]. Other studies have focused instead on the power of social norms to disrupt the relationship between conspiracy beliefs and problematic behaviours. For example, believing that important people in your life are pro-vaccination eliminates the well-documented relationship between a conspiracy worldview and vaccine hesitancy[15]. There is also evidence that people over-estimate the social prevalence of conspiracy beliefs[116], suggesting that there may be benefits in interventions that challenge these misperceived norms.

In the face of underwhelming outcomes from interventions, many argue it is easier to stop conspiracy theories from developing rather than to stop them once formed[136,180]. It is perhaps unrealistic to expect psychological studies to examine the macro-factors outlined in this Review, but there is general agreement on the need to play the long-game: fortifying the integrity of governments and other institutions to remove the fertile ground from which conspiracy theories grow[143].

Figure captions

Fig. 1. A multilevel understanding of the factors associated with conspiracy beliefs. Conspiracy beliefs are influenced by individual factors at the micro level, intergroup dynamics at the meso level, and national factors at the macro level.

Fig. 2. Summary of meta-analytic insights into the correlates of conspiracy beliefs. Estimated effect sizes and 95% confidence intervals for the correlations between individual-level and intergroup factors and conspiracy beliefs from five meta-analyses. Marker size and line thickness represent the number of primary studies included in the meta-analysis: larger markers and thicker lines denote 30 primary studies; smaller markers and thinner lines denote 20 primary studies.