delight — its explanation remains controversial. Its continued popularity among researchers is borne out by its current ban from a major psychological journal.

Another task devised by Wason examined inductive inferences, and was provoked by Sir Karl Popper's emphasis on falsifiability in science. It appeared to show that individuals try to confirm their conjectures rather than disconfirm them, though the interpretation of this result also remains controversial.

Yet another early experiment was a mere handful of published studies on the psychology of reasoning; his work, and that of his students and critics, has led to a literature too vast for any one reader to master.

Strikingly, they evaluate affirmatives as true faster than as false, but evaluate negatives as false faster than as true. This study, published in the late 1950s, showed that not all psychopathological phenomena could be explained in terms of syntax.

Wason had several other brilliant ideas for experimental tasks, though not all of them worked; the conjecture that participants who had to write in invisible ink would be free to write more fluently was not successful. The editor of a journal was happy to to inspire investigation.

He certainly excited students about his research. In his postgraduate seminar, they talked about experiments before carrying them out — and, somehow, found themselves working on problems that also interested Wason. Afterwards, pipe in hand, he would explain where you had gone wrong; his aquiline demeanour fitted your picture of Sherlock Holmes, for whom you had just given a passable imitation of Dr Watson.

Wason and his wife Marjorie met at Oxford, and were married for more than three decades. She predeceased him in 1984; he is survived by two daughters.

Philip Johnson-Laird

Peter Cathcart Wason, psychologist, born April 22 1924; died April 17 2003

PETER WASON

THE TIMES TUESDAY APRIL 29 2003

Cognitive psychologist who developed clever ways to reveal how thinking commonly fails

PETER WASON was a cognitive psychologist who combined imagination with a strong sense of logic, enabling him to investigate errors of thinking. By designing clever test examples he was able to infer much about how our thinking works, and how it goes wrong, from the mistakes that people make. Many of his most important ideas were published in *Psychology of Reasoning: Structure and Content*, which he wrote with Philip Johnson-Laird.

A principal finding was that it matters a great deal how a problem is stated or dressed up. When a problem is posed in abstract terms, with its logical character fully exposed to view, we make more mistakes than when the same logic is embodied in a practical problem, particularly if the situation, though not the answer, is familiar. The implication is that the human mind is not organised as an abstract problem-solver.

Further, there are several kinds of biases in problem-solving; errors are not random, but reveal that we are biased to favour possibilities (or impossibilities) that would, if true, confirm our general beliefs. And we are poor at applying critical tests to hypotheses. Wason's work had important implications for education, decision-making, theories of mind and the programming of artificial intelligence.

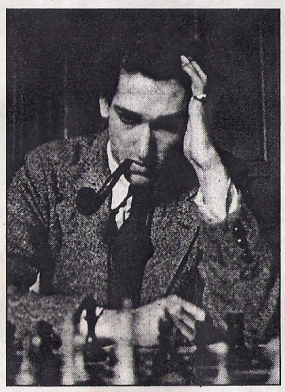
Peter Cathcart Wason was born in Bath into a political family, the youngest of three sons. His great-grandfather, Peter Rigby Wason, sat as MP for Ipswich and wrote pamphlets in defence of the working classes. His brother Eugene was Editor of the *African Daily News* in Rhodesia, making it the first mass-circulation newspaper for the black majority, until it was banned by Ian Smith's Government.

Peter Wason was educated at Stowe School and became a liaison officer during the Second World War, serving in the 8th Independent Armoured Brigade. He was invalided out in 1945.

He read English from New College, Oxford and then took a degree in psychology at University College London, where he took a doctorate in 1957. He spent more than 30 years at UCL, becoming Reader in Psycholinguistics in 1970.

He started his work in the Industrial Psychology Unit, working at Yardley's factory. This resulted in his favourite academic paper, *Soap Wrappers' Jig*, which showed that the women in the factory who made the most extraneous movements also wrapped the most soap. This result violated the prevailing tenets of motion study, and hit the front page of the *Daily Express* after its publication in the *British Journal of Industrial Medicine* in 1954.

Wason created an exciting programme of research, with effective tools and questions that attracted students and opened new windows on the mind. Looking for errors is a powerful strategy for investigating both perception and thinking, because illusions of perception correspond psychologically in many ways to delusions of thought. The art was to pick appropriate examples for revealing why we make systematic errors, and how mind and brain work to achieve the only partially understood miracles of thinking and perceiving. Wason's tests for errors of reasoning are used internationally in research on thinking.



Wason wrote about chess psychology

He began by working on language and psycholinguistics, since the relations between language and thought are central to contemporary philosophy and psychology. This led on to work on inductive and then deductive reasoning, and to the invention of his well-known "selection task".

This entailed the use of a pack of cards, each with a letter written on one side and a number on the other. The experimenter claimed that if a card had a vowel on one side, then it had an even number on the other. Subjects were shown four cards from the pack, showing a vowel, a consonant, an even number, and an odd number — E T 4 7. The task was to decide which cards to turn over so as to establish whether the rule was true or false. The correct choice (according to Wason) is the vowel and the odd number, since only these cards could falsify the rule. Sir Karl Popper would have agreed; but it turned out that most people are poor Popperians in their strategies — preferring confirmations to refutations.

Such a preference may be comfortable, but it does not make good science — though it is a moot point how far ideal rules for problem-solving apply to the everyday world, with its dodgy data and lack of formal rules and explicit hypotheses. Wason and his colleagues, such as Philip Johnson-Laird and Jonathan Evans, found that we are better with real situations, though these can introduce their own biases. And perhaps for practical purposes it would be disruptive to emphasise strict logic.

Wason loved writing, describing it as "a source of spiritual nourishment". He assumed that one does not know what one is really trying to say until one has said it, and that writers who plan what they write in advance are more likely to dislike the process. He looked for different ways to inspire his students to write more fluently. In one experiment he tried asking subjects to write about God in invisible ink; the editor of the *Quarterly Journal of Experimental Psychology* said he would be delighted to publish the excerpts so long as they remained in invisible ink.

Wason will be remembered, with his colleagues, as a founder and inspirer of research on what, on a good day, marks our species out as so special: selecting evidence and thinking clearly, without prejudice or self-delusion. By facing that success in these processes is achieved only on a good day, Wason and his colleagues offer the hope that we may have more good days in a rational future.

A devoted chess-player, Wason was an international master at correspondence chess and was playing until Christmas. Together with W. R. Hartston he wrote *The Psychology of Chess* in 1983.

In 1951 Wason married Majorie Salberg. She died in 1984, and two years later he married Joan Williams, but they divorced in 1995. He is survived by two daughters from his first marriage.

Peter Wason, cognitive psychologist, was born on April 22, 1924. He died from Lewy body dementia on April 17, 2003, aged 78.

Obituaries

Psychological pioneer of human reasoning who rescued his subject

Peter Wason



BY CAITLYNN CAMPBELL

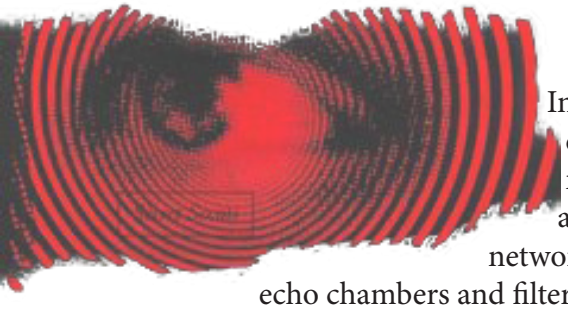

当仑之亚仑卞

belief

In the realm of human cognition, biases often lurk beneath the surface, subtly shaping our perceptions and decisions without our conscious awareness. One such phenomenon that has garnered increasing attention in recent years is confirmation bias. Confirmation bias, a cognitive bias wherein individuals tend to favor information that confirms their preexisting beliefs or hypotheses while disregarding contradictory evidence, has profound implications across various domains of human endeavor, from politics and religion to science and everyday decision-making.

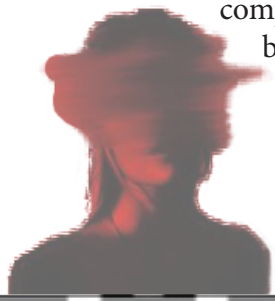
At its core, confirmation bias reflects the inherent tendency of the human mind to seek out validation and affirmation, often at the expense of objective truth. Whether consciously or unconsciously, individuals gravitate towards sources of information that align with their existing worldview, filtering out dissenting opinions or evidence that challenges their established beliefs. This predisposition towards confirmation can manifest in subtle ways, influencing how we interpret ambiguous information, selectively recall past experiences, and engage with divergent perspectives.



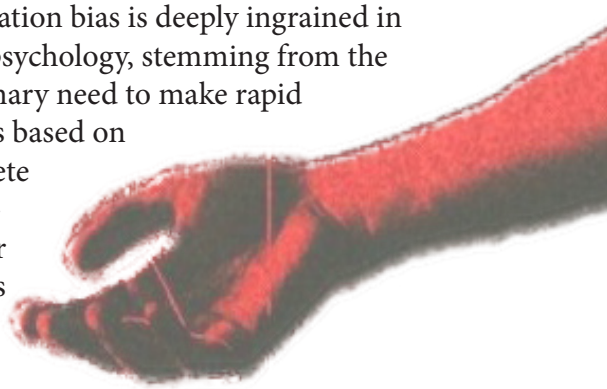


In the age of digital media and social networks, where echo chambers and filter bubbles abound, confirmation bias can be exacerbated, fostering the proliferation of misinformation and reinforcing ideological divides.

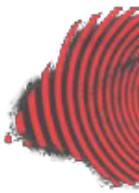
However, recognizing and mitigating confirmation bias is not an insurmountable challenge. By cultivating critical thinking skills, actively seeking out diverse perspectives, and remaining open to revising our beliefs in light of new evidence, individuals can guard against the pitfalls of confirmation bias and foster a more nuanced understanding of the world around them. In this issue of Define Reality, we delve into the intricacies of confirmation bias, exploring its psychological underpinnings, real-world implications, and strategies for combating its pervasive influence. Through insightful analysis, thought-provoking narratives, and expert perspectives, we aim to illuminate the complexities of confirmation bias and empower readers to navigate the information landscape with greater discernment and clarity. Join us on a journey of intellectual exploration as we unravel the mysteries of confirmation bias and uncover the keys to fostering a more rational and enlightened society.

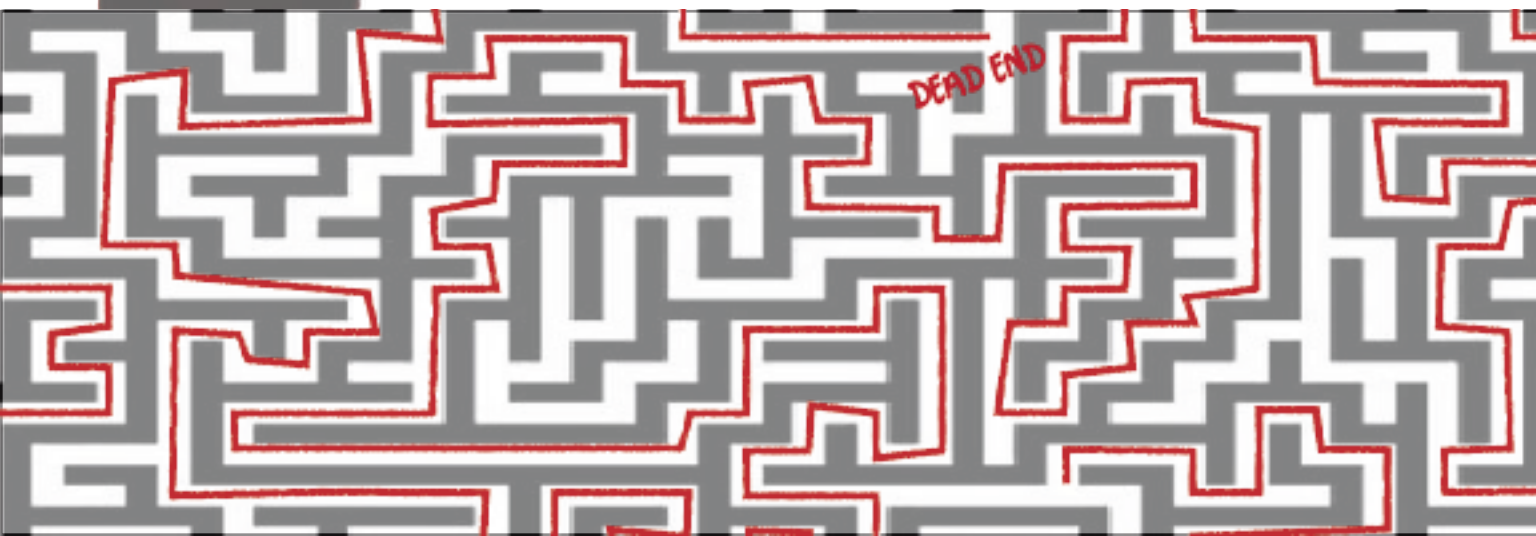


Confirmation bias is deeply ingrained in human psychology, stemming from the evolutionary need to make rapid decisions based on incomplete information. Our ancestors had to quickly assess situations and act accordingly to ensure survival, often relying on heuristics and biases to navigate uncertain environments. While these cognitive shortcuts served a crucial purpose in the past, they can lead to errors in judgment and decision-making in the complex, information-rich world of today.



One of the most insidious aspects of confirmation bias is its tendency to reinforce existing beliefs, creating a self-perpetuating cycle of confirmation and validation. When individuals encounter information that aligns with their preconceptions, they experience a sense of affirmation and confidence in their beliefs. This positive





reinforcement further strengthens their commitment to those beliefs, making them less receptive to contradictory evidence and more resistant to changing their minds. Confirmation bias can also influence how information is processed and interpreted, leading to a phenomenon known as motivated reasoning. When presented with ambiguous or conflicting evidence, individuals are more likely to interpret it in a way that supports their existing beliefs, rather than objectively evaluating its validity. This selective interpretation allows individuals to maintain consistency in their beliefs and avoid cognitive dissonance, but it can also hinder their ability to accurately assess reality.

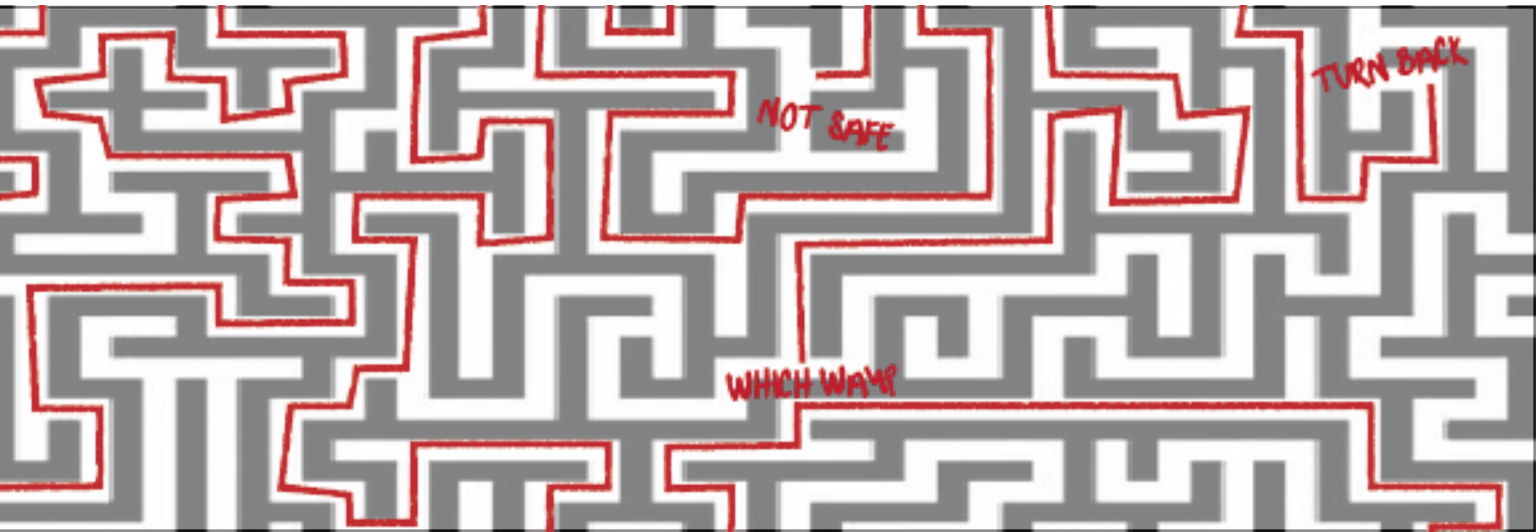
In the realm of scientific inquiry, confirmation bias can pose significant challenges to the pursuit of knowledge and understanding. Scientists, like all individuals, are susceptible to the biases inherent in human cognition, which can influence the design of experiments, the interpretation of data, and the publication of results. Recognizing and mitigating confirmation bias is therefore essential for maintaining the integrity and objectivity of scientific research, ensuring that conclusions are based on evidence rather than preconceived notions.



In today's hyper-connected world, where information is abundant and readily accessible, confirmation bias has taken on new dimensions. Social media algorithms, personalized news feeds, and echo chambers within online communities all contribute to the reinforcement of existing beliefs and the amplification of confirmation bias. As individuals increasingly curate their online experiences to align with their interests and beliefs, they become more insulated from dissenting viewpoints and less exposed to diverse perspectives, further entrenching their biases.

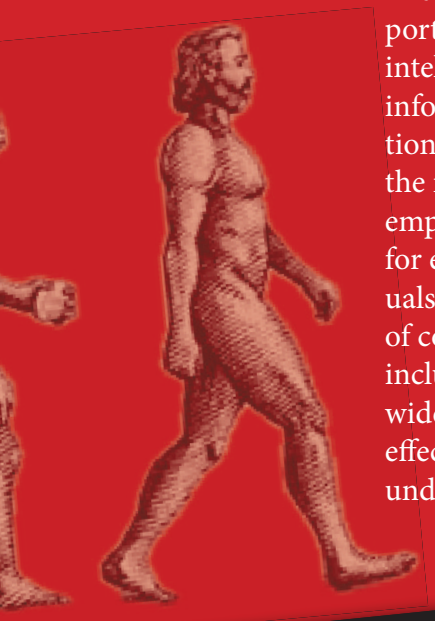


Confirmation bias can affect decision-making in various aspects of life, including personal relationships, professional endeavors, and even public policy. In interpersonal interactions, individuals may selectively interpret the actions and words of others to confirm their preconceived notions about them, leading to misunderstandings and conflict. In the workplace, confirmation bias can influence hiring decisions, performance evaluations, and promotion opportunities, as managers may unconsciously favor employees who validate their beliefs or biases. Similarly, confirmation bias can shape policymakers' perceptions of complex issues, leading to decisions that prioritize ideology over evidence-based solutions.



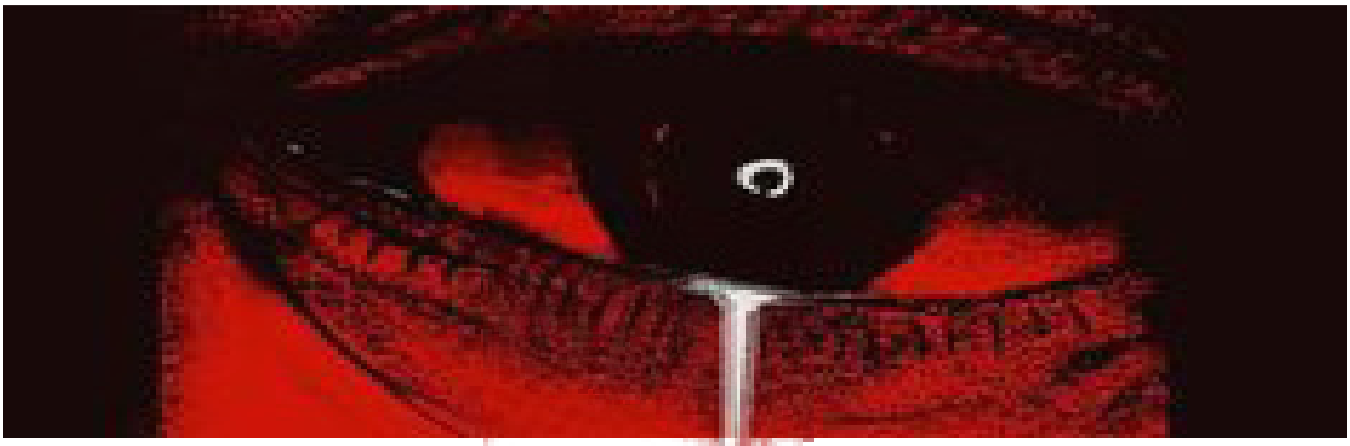


While confirmation bias is a universal aspect of human cognition, certain factors can exacerbate its effects. Cognitive dissonance, for example, occurs when individuals experience discomfort or psychological tension as a result of holding conflicting beliefs or attitudes. To alleviate this discomfort, individuals may engage in biased information processing to justify or rationalize their beliefs, further reinforcing confirmation bias. Additionally, emotional investment in particular beliefs or outcomes can intensify confirmation bias, as individuals become more motivated to seek out information that supports their desired conclusions and dismiss contradictory evidence.



The prevalence of confirmation bias underscores the importance of fostering critical thinking skills and promoting intellectual humility. Encouraging individuals to approach information with skepticism, question their own assumptions, and consider alternative viewpoints can help mitigate the influence of confirmation bias. Education programs that emphasize evidence-based reasoning and teach strategies for evaluating sources of information can empower individuals to make more informed decisions and resist the allure of confirmation bias. Similarly, cultivating diverse and inclusive environments where individuals are exposed to a wide range of perspectives can help counteract the insular effects of confirmation bias and foster greater empathy and understanding.

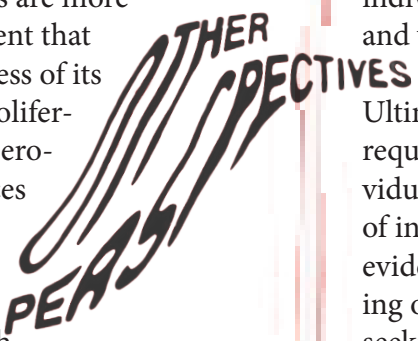
PEOPLE GENERALLY SEE WHAT THEY LOOK FOR AND HEAR WHAT THEY LISTEN FOR



In today's digital age, where information travels rapidly through social media channels and online platforms, confirmation bias can fuel the dissemination of false or misleading information. Individuals are more likely to share and amplify content that aligns with their beliefs, regardless of its accuracy, contributing to the proliferation of echo chambers and the erosion of trust in traditional sources of news and information.

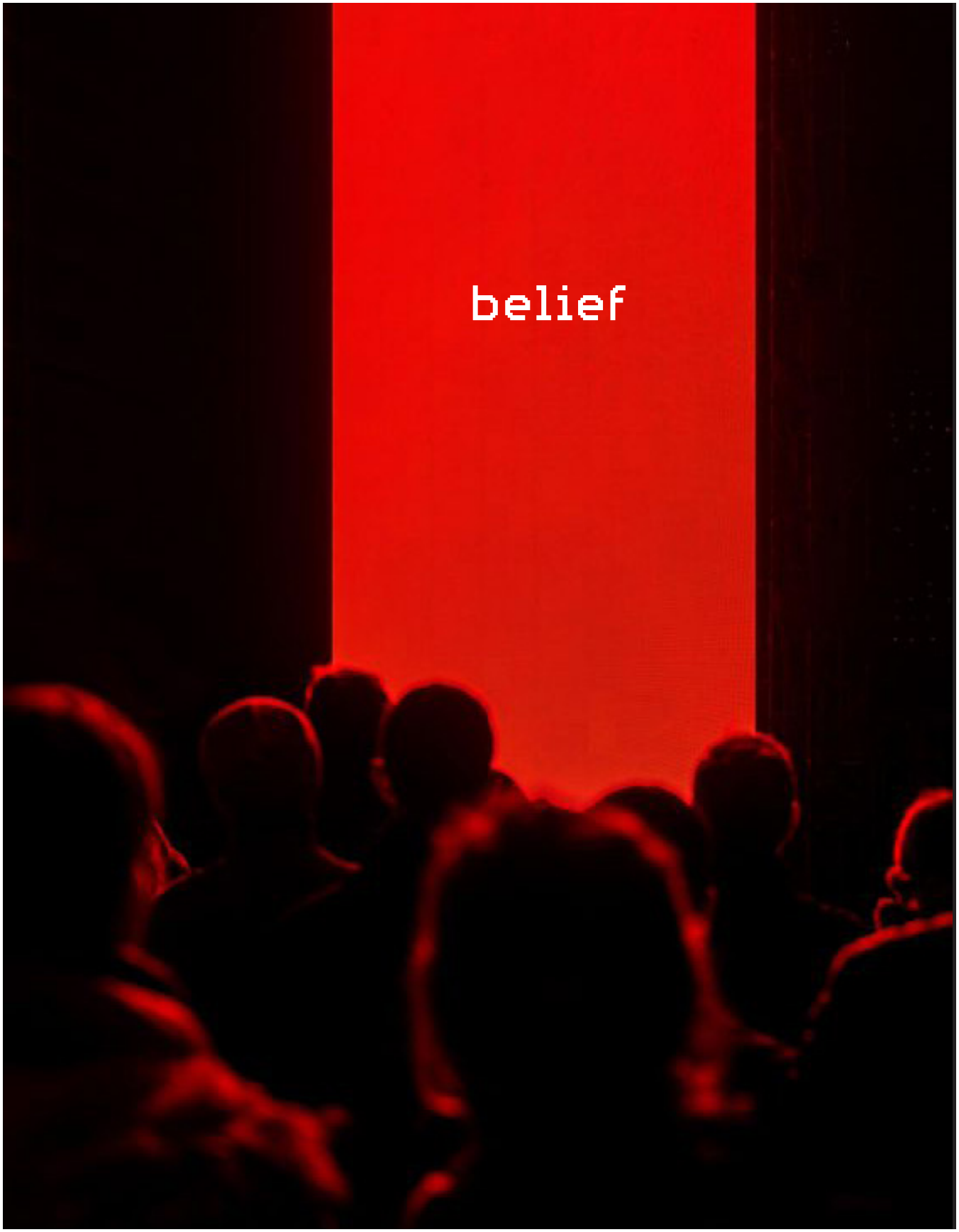
Addressing confirmation bias requires a multifaceted approach that encompasses both individual self-awareness and systemic interventions. On an individual level, mindfulness practices and metacognitive strategies can help individuals recognize and counteract the influence of confirmation bias in their own thinking. By cultivating a habit of self-reflection and actively seeking out diverse perspectives, individuals can develop greater cognitive flexibility and resilience against biased reasoning.

At the institutional level, efforts to promote transparency, accountability, and intellectual diversity are essential for combating confirmation bias in public discourse and decision-making processes. Media literacy programs can equip individuals with the skills to critically evaluate information sources and complex media landscape. Similarly, promoting diversity and inclusion in academic and professional settings can help mitigate the effects of confirmation bias by exposing individuals to a wider range of perspectives and viewpoints.



Ultimately, addressing confirmation bias requires a concerted effort at both the individual and societal levels to foster a culture of intellectual humility, critical inquiry, and evidence-based reasoning. By acknowledging our cognitive limitations and actively seeking out alternative viewpoints, we can navigate the complexities of the modern world with greater clarity and discernment. In doing so, we can strive towards a society that values truth, rationality, and open-mindedness, and fosters constructive dialogue and collaboration across diverse perspectives.




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