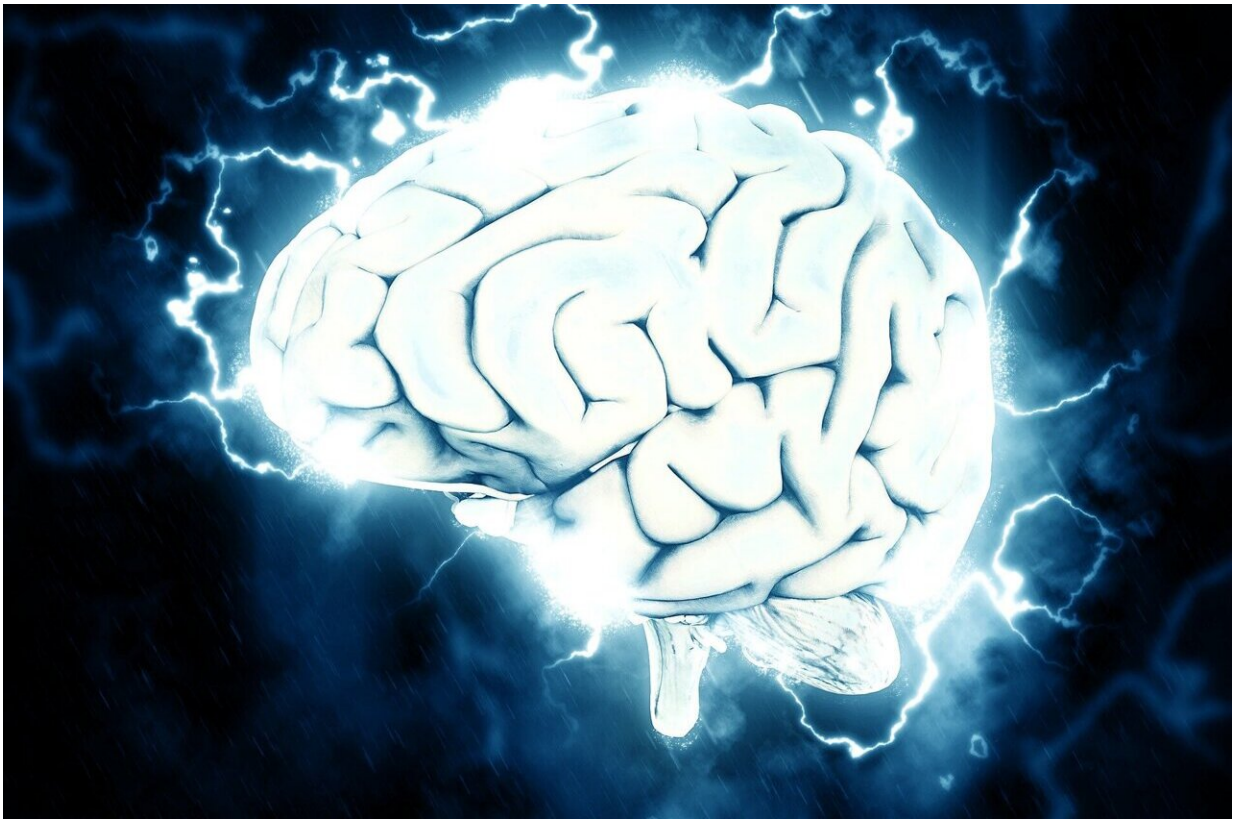


Brain shortcuts may be partially to blame for vaccine and mask non-compliance

February 4 2022, by Colleen Sharkey



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If close friends and family members who contracted COVID-19 had mild cases and recovered quickly, or if they had an adverse reaction to the vaccine, your brain might convince you that you'd have the same

experience. This phenomenon, known as "availability heuristic," is one of a handful of cognitive shortcuts, which conserve brain energy and are generally understood to be positive and beneficial. For example, an alternative route to work could save you time and fuel, or a mathematical method could aid you in solving an equation more efficiently.

However, "these cognitive shortcuts can be deadly during a pandemic," warn Theodore Beauchaine, the William K. Warren Foundation Professor of Psychology at the University of Notre Dame, and his co-authors.

Beauchaine and his colleagues break down the cognitive shortcuts that can affect how we assess risk and decide to behave in the face of the pandemic in a recent paper in the journal *Brain, Behavior, and Immunity*. A second shortcut is known as "representativeness heuristic." When the [brain](#) relies on this cognitive shortcut, it might tell you only [elderly people](#) are at risk of contracting COVID-19, despite an abundance of empirical evidence to the contrary.

"We may ignore or fail to account for basic facts about SARS-CoV-2 and decide to engage with people who we believe are unlikely to be infected, even though we are all at risk of exposure and infection with this novel pathogen," the researchers wrote.

Within this shortcut are two important subsets that can result in putting ourselves and others at risk. We may make erroneous assumptions via the "insensitivity to predictability" heuristic when, for example, we believe a friend who currently has COVID-19 but is only experiencing mild symptoms isn't spreading the virus and won't suffer long-term health consequences.

Throughout the pandemic, authorities in many communities have sought to limit social gatherings to slow the spread of the virus. When our

brains use the "insensitivity to sample size" shortcut, we assume that infection rates among small gatherings is indicative of the overall population infection rate, which is false.

"In the context of infectious disease, small groups may deviate exponentially from the population infection rate given that members of [small groups](#) are non-random, often sharing social contacts and high-risk occupations," Beauchaine and his colleagues wrote.

The "anchoring heuristic" refers to humans' tendency to cling to initial information we receive about something, even when presented with updated information. The authors give the example of people continuing to cite the inaccurate statement by the surgeon general early in the pandemic that masks are ineffective, despite subsequent studies that proved their effectiveness.

In the 1970s, studies conducted by Israeli psychologists Amos Tversky and Daniel Kahneman showed that everyone's brains—even doctors and [mental health professionals](#)—take these mental shortcuts to preserve cognitive resources. They also found that extensive life experience can't override—and might even accentuate—cognitive shortcuts.

"Education, awareness and further research on the role of heuristics in the spread of infectious disease should help to improve decision-making and reduce risky behavior during a pandemic. To make accurate risk assessments, engage in safe behaviors and stop the spread of COVID-19, we must account for heuristics and their influence on our perceptions and behaviors," the authors concluded.

More information: Annelise A. Madison et al, Risk assessment and heuristics: How cognitive shortcuts can fuel the spread of COVID-19, *Brain, Behavior, and Immunity* (2021). [DOI: 10.1016/j.bbi.2021.02.023](https://doi.org/10.1016/j.bbi.2021.02.023)

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