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Psychology

The struggle to comply with social distancing

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We have tried to keep a distance from each other to curb the early spread of COVID-19. These practices, however, conflict with our needs for social interactions. Resolving this dissonance demands the capacity to retain multiple pieces of potentially conflicting information in working memory. Minimizing information overload, therefore, becomes even more critical at this challenging time.

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COVID-19 pandemic has drastically changed our lives. To curb the virus's spread, we have tried to keep a distance from our neighbors, postpone large group gatherings, and frequently isolate ourselves at home. These social (or physical) distancing practices are at odds with the interactive nature of everyday human activities. Resolving this dissonance requires a capacity to handle multiple pieces of potentially conflicting information in our minds, which is a function often attributed to working memory.

Working memory retains a limited amount of information over a short period at the service of other mental functions. Unfortunately, its limited capacity constrains our ability to flexibly update established mental models, such as changing from handshaking to elbow touching or from no mask to wearing a mask. Our study supports this conjecture, by relating social distancing compliance with participants' working memory capacity in the U. S. during the early stage of this pandemic. In light of this observation, avoiding information overload, retaining guideline consistency, and removing disinformation may help us combat the unprecedented challenges at this difficult time.

Previous research has shown that individuals with higher working memory capacity are better at handling information overload, learning new things, and making rational decisions under stressful

situations. These are critical abilities for adapting to the new socially (or physically) distancing world during the COVID-19 pandemic, especially when the norm of social distancing was still being developed. To test this idea, we surveyed 850 U.S. residents online within the first two weeks (March 13 to 26, 2020) following the U.S. federal government's declaration of a national emergency. We asked participants to report how closely they followed a set of recommended social distancing practices and how much they believed social distancing had its benefits over costs at the time. Participants then completed a visual working memory task. They tried to remember as many distinct color squares as possible over a 1-second retention interval. We quantified working memory capacity as the number of colors an observer could remember within this short delay period. In a separate ultimatum game, we also measured participants' willingness to fairly share money with others when given a surplus. Additionally, we assessed their age, gender, income and education levels, moods, personality, and problem-solving skills.

We found that participants' working memory capacity uniquely predicted their self-reported social distancing behaviors. This result was independent of more well-acknowledged socioeconomic and other psychological predictors, such as age, gender, depressed mood, and problem-solving skills. Critically, working memory capacity was also closely associated with one's understanding of the benefits over costs of social distancing during the early stage of the COVID-19 pandemic and their tendency to follow the fairness social norm to evenly share a surplus with others in the ultimatum game.

These results likely reflect the impact of information overload on our everyday decision making, especially when we consider social distancing compliance a rational decision at the beginning of a pandemic as suggested by epidemiologists. When our minds are flooded with thoughts about the benefits and costs of social distancing during the initial phase of the COVID-19 pandemic, it poses a unique demand on our working memory. While individuals with high working memory capacity can better handle these multiple pieces of conflicting information, individuals with lower working memory capacity suffer from information overload. This association, however, is independent of one's problem-solving skills, often known as fluid intelligence.

Revealing this cognitive challenge helps understand individual differences in people's responses to the COVID-19 pandemic, which are unlikely to be driven by a single factor. For example, both socioeconomic (for example, income level) and other psychological (for example, depressed mood and anxiety) factors may explain why some people follow social distancing guidelines while others do not follow under certain circumstances. Yet, these factors could not fully account for why people would still make suboptimal decisions even when they were given a free choice at the time when it was still early, and the perceived risk of the virus was lower.