

Psychology

Brain activity of conservatives and liberals diverge while watching the news

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ABSTRACT

Despite unprecedented access to multiple sources of information, polarization in political opinions is on the rise. Why does the same news footage trigger different responses in conservatives and in liberals? Analyzing the brain activity of partisans watching the news, we showed that the same information fosters different responses in their brain.

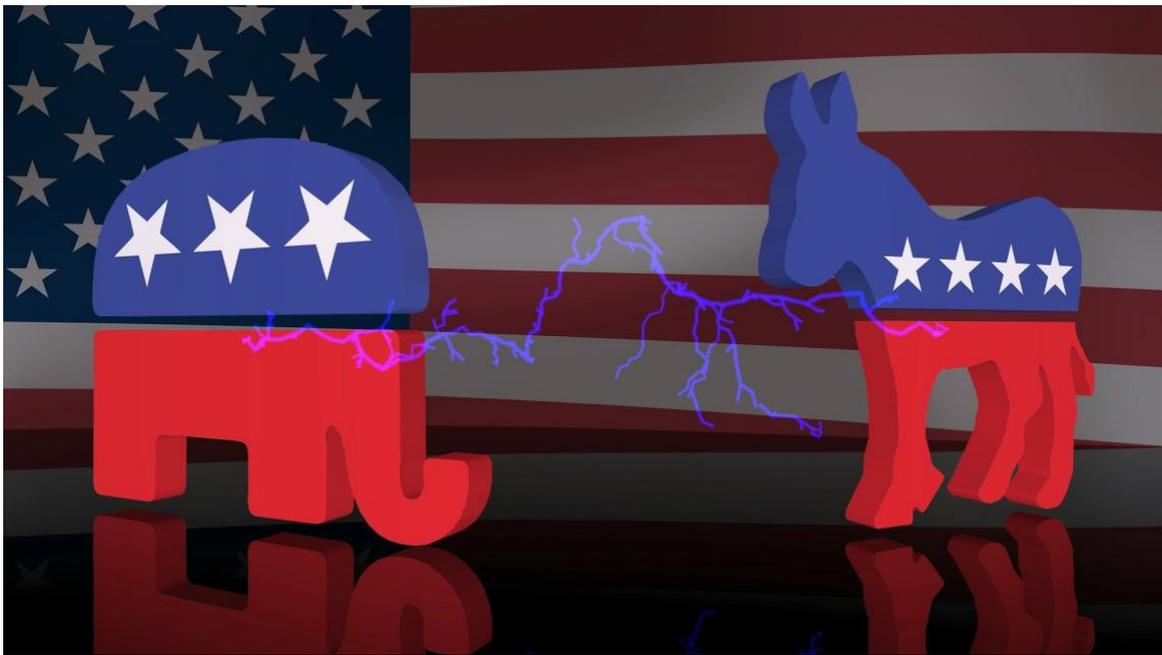


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People with different political beliefs are often said to ‘see’ different realities. For example, in the United States, conservatives and liberals are sharply divided about the threat of COVID-19 and the extent to which the pandemic is under control. Why are there such stark differences in how people with different political beliefs see the world? One reason is the same event, perceived in a manner that supports one’s beliefs, causes partisans to become further entrenched in their opposing worldview. How exactly is political information perceived differently? What kind of information is more likely to polarize conservatives and liberals? In recent work, we add a new perspective on these questions by measuring the brain activity of conservatives and liberals watching the news.

We recruited 38 conservative and liberal participants and had them watch news clips, campaign ads, and public speeches about American immigration policy, while measuring their brain activity using functional magnetic resonance imaging, a technique for measuring brain activity by detecting changes in blood flow in the brain. Each video was a couple of minutes long, and was related to an immigration policy known to polarize conservatives and liberals in the US (e.g., construction of a wall along the Mexico-US border, pathway to citizenship for undocumented immigrants, ...). We found that brain activity diverged between conservatives and liberals watching the same video. We did not observe this so-called “neural divergence” in sensory regions of the brain, suggesting that conservatives and liberals did not literally see or hear

the videos differently. Instead, neural divergence was observed only in a region called the “dorsomedial prefrontal cortex”, a higher-order brain region associated with the interpretation of narrative content. At the end of each video, we asked participants if the video made them more or less likely to support the relevant immigration policy. Liberals became more likely to support the liberal position on the policy, and the opposite was true for conservatives. In other words, presenting the same information to two groups with diverging political views resulted in both groups becoming more entrenched in their worldview. For a given individual, the closer their brain activity resembled that of the ‘average conservative’ or ‘average liberal’, the more likely they are to adopt that group’s position after watching the videos. These results suggest that divergent interpretations of the same political content led to subsequent attitude polarization between the two groups.

To understand what messages were more likely to be interpreted differently, we transcribed and analyzed the linguistic content in the videos. We found a greater divergence in brain activity during moments in the videos with threat-related (e.g. “dangerous”, “safety”, “protected”) and moral-emotional (e.g. “harmful”, “compassionate”, “violation”) words.

One possible explanation for these results is that conservatives and liberals differ on what they consider threatening, as well as what is the moral thing to do. These different interpretations are then reflected in divergent brain activity responses when watching the

same news footage. It should be noted that our videos focused on the single issue of immigration. Would the results generalize to other polarizing issues, such as abortion or gun control? Given that these issues are also often framed in threat, moral and emotional terms, we believe this is likely, though future studies will be needed to examine this further.

Together, these results suggest the existence of a neural basis for partisan biases in interpreting political messages, and highlights the effects these biases have on attitude polarization. The results also identified the type of language likely to drive biased interpretations. It is important to emphasize that our results do not imply that conservatives and liberals are ‘hardwired’ to disagree. Our experiences, and the media we consume, shape how we process incoming information and likely contribute to the divergent neural responses. Nevertheless, this study highlights why it is so difficult to bridge the partisan divide, and that trying to persuade partisans with ‘more information’ might not be the most effective strategy. Even when presented with an identical piece of information, people interpret what they see or hear based on their prior beliefs.

If our goal is to reduce polarization and change minds, we need to think carefully about how we frame and structure politically-relevant information, for example, by framing messages to appeal to the core values of the respective group. A better understanding of how political messages are interpreted differently will inform interventions aimed at aligning interpretations and “depolarizing” the electorate.