

# Uncovering the Neural Processes of Privacy

Can individuals be empowered to protect their privacy through design?

People are increasingly aware that their information is being tracked, yet they often share it, contradicting their privacy preferences. The primary motivation for sharing private information is typically the reward, such as personalized content, despite the associated risks.

Dr. Reeck and her team aimed to understand the neural mechanisms behind this behavior by studying brain activity during the decision-making process, using functional MRI. Their research identified specific brain regions involved in evaluating the perceived benefits of sharing (medial prefrontal cortex and caudate nucleus) while other regions (insula, amygdala, lateral prefrontal cortex, and temporoparietal junction) processed the potential risks. Notably, the team also discovered a network of regions (the lateral prefrontal and dorsomedial prefrontal cortices) responsible for directing attention. Their findings suggest that the brain's ability to focus on particular aspects, whether risks or rewards, at the moment of decision-making influences sharing behaviors.

Based on these insights, Dr. Reeck and her team developed a tool aimed at improving privacy protection. By presenting intrusive questions just one second after introducing the reward of sharing, they significantly reduced the disclosure of private information. This strategy works by altering how attention is directed at the time of decision, making privacy concerns more prominent and helping to discourage the disclosure of information that doesn't align with people's stated privacy preferences.

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## MAJOR TAKEAWAYS:

- Different brain regions work together to weigh the risks and benefits of sharing information.
- Focusing on aspects of risk or reward of sharing at the time of decision-making influences sharing behavior.
- Individuals can be prompted to protect their privacy by altering when the risks or rewards of sharing are presented to them.

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## WHO NEEDS TO KNOW:

- User experience designers
- Business leaders
- Policy makers

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- Uncovering the Neural Processes of Privacy: A Neurally Informed Behavioral Intervention to Protect Information Privacy  
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