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Heading for a fall: Neuroscientists reveal how overconfidence can lead to poor decision making

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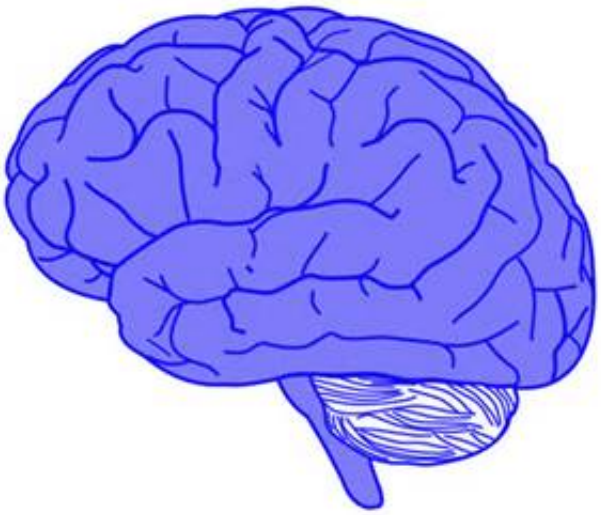

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The link between overconfidence and poor decision making is under the spotlight in an international study by scientists from Monash University and the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig.

People vary widely in their awareness of what they do and don't know, or

metacognitive ability, and in general are too confident when evaluating their performance. This often leads to poor decision making with potentially disastrous consequences, according to the report's authors.

The team has published a study in the journal *Social, Cognitive and Affective Neuroscience* which provides some insight into how overconfidence can lead to poor decision making.

The authors include an international group of scientists at the Department of Social Neuroscience at the Max Planck Institute, headed by Professor Tania Singer, in collaboration with Dr Pascal Molenberghs from the Monash Institute of Cognitive and Clinical Neurosciences and Fynn-Mathis Trautwein, Dr. Anne Böckler and Dr. Philipp Kanske from the Max Planck institute team.

They analysed data from the ReSource Project, which is a unique, large scale study on Eastern and Western methods of mental training performed at the Max Planck Institute. In the context of a social cognition task performed in the brain scanner, the volunteers watched a video of a person telling a story and then had to answer a difficult question about what the person said.

Subsequently, people indicated how confident they felt their response was correct. The researchers then measured how good people were in evaluating their own accuracy; a process called metacognition.

"The more confident people were about their performance, the higher the activation in brain areas such as the striatum, an area often associated with reward processing," first author Dr Molenberghs said.

"However, too much confidence was associated with lower metacognitive ability," co-first author Mr Trautwein added.

When combined, the results indicate that although being confident entails a reward-like component, it can lead to overconfidence which in turn can undermine decision making.

More information: Pascal Molenberghs et al, Neural correlates of metacognitive ability and of feeling confident: a large-scale fMRI study, *Social Cognitive and Affective Neuroscience* (2016). DOI: 10.1093/scan/nsw093