Rock, paper, scissors—why your own brain might be your worst enemy

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Credit: University of Sussex

A new study into brain activity during strategy based games such as Rock, Paper, Scissors has found that tactics go out of the window as soon as you lose or win big, making it harder for you to win next time around.

Research by psychologists at the University of Sussex measured competitors' brain activity and discovered that following a big win or any kind of loss, the human brain acts more predictably. And as anyone who has ever played Rock Paper Scissors knows, the more predictable you

are the less likely you are to win.

The paper, published in the journal *Scientific Reports*, argues that competitors are actually very unlikely to be able to keep their cool during competition, and are most likely to make rational choices when winning and only when these wins are of low value.

The findings highlight the lack of ability humans have to make wholly rational choices during both losing and winning, with outcomes impinging upon our ability to strategise effectively. This could put the contestant at a greater risk of a losing streak in Rock, Paper, Scissors and other competitive games that involving gambling.

"Our brain recordings tell us that the brain responds extremely quickly to the outcome of an event, such as a win, a loss or a draw. However, these brain responses do not appear to be very flexible following losing and don't seem to allow much room for the brain to refocus on the next round" says Dr Ben Dyson, who led the study.

"What's really interesting about this is to what extent individuals can have any free choice about what they do next, following a big win or any kind of loss. Following a loss, your next response also tends to be faster and more predictable. This suggests that you're still reeling from this negative outcome and not thinking about what you're going to do next.

"Understanding how people can get stuck in these poor quality decision making loops may go some way to helping us understand problem gamblers. If we are able to stop these automatic reactions from happening, we might be able to prevent problem gambling from happening before it begins."

More information: Lewis Forder et al. Behavioural and neural modulation of win-stay but not lose-shift strategies as a function of

outcome value in Rock, Paper, Scissors, *Scientific Reports* (2016). DOI: 10.1038/srep33809