

# Repeated St Petersburg two-envelope trials and expected value

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## Abstract

It is commonly believed that when a finite value is received in a game that has an infinite expected value, it is in one's interest to redo the game (note that switching to an unknown but already determined value is equivalent to redoing). We have argued against this belief, at least in the repeated St Petersburg two-envelope case. We have also shown an example where repeatedly switching to a higher expected value leads to a worse outcome over any finite number of trials. Finally, over infinitely many trials of the repeated St Petersburg two-envelope game, the always-switch strategy is paradoxically both better than and the same as the always-stay strategy.

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