Tracking Eye Movement in Lottery Choice Experiment

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Abstract

Majority of research on a decision making under risk is based on data of choices observed in experiments. In this study we addressed a decision making process before determining the choices with using eye tracking technics. The purpose of this study is to investigate the question whether the decision making process under risk is based on a linear probability or a nonlinear probability. We conducted two kinds of experiments, a lottery choice experiment and a calculating experiment. In the lottery choice experiment, subjects make choices between a binary lottery and a sure option. In the calculating experiment, subjects calculate expected values of the binary lotteries. Eye movement patterns in both experiments were recorded and compared. The main findings are as follows. First, eye movement patterns are totally different in the two experiments. Second, there are a positive correlation between the probability of winning and subject's attention to that probability only in the lottery choice experiment. These findings can support that the decision making under risk is based on a nonlinear probability.

Keywords: Decision making under risk, eye tracker, experiments.
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