

# **A Short Introduction to the Paper - Opponent's Foresight and Optimal Choices**

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## **1. What is the question of paper?**

How and why a player deviates “rationally and optimally” from backward induction strategy in an extensive-form game?

## **2. Why should we care about it?**

Game theory has provided us a prediction that a player should adopt “backward induction” if all other players are rational at each stage. However, the assumptions could be violated and the prediction could hence be off in two ways. First, the player herself might not be rational. Second, her opponent might not be rational, enabling her to benefit from deviations from backward-induction strategy.

In answering to why and how, we might be able to make predictions that approximate reality better than standard game theory.

## **3. What is the answer?**

Three competing models are used to explain the data. The Limited Foresight Equilibrium explained the data best, bringing us two major implications:

1. A significant number of subjects had limited foresight indeed.
2. Subjects with no-foresight-limitations adjusted their strategy away from backward induction according to their belief on the opponent's expertise.

## **4. How did the author get there?**

The author modified “race game” where second mover is sure to win with backward induction. First, to observe deviations, the author added a preceding stage where subjects were asked their preference over going first or second. Second, to incentivize rational deviations, winning first mover would be rewarded with 500 experimental currency units (as opposed to 200 for winning second-mover).

In treatment 1, half of the subjects were trained and then paired with untrained players. Told whether their opponents are inexperienced, experienced subjects are more likely to choose to go first in the face of inexperienced opponents.

Treatment 2 did not reveal the experience-level to the players. The author found that experienced subjects chose to go first if their opponent lost in the preceding round. This suggests that the players can infer their opponents' expertise themselves.