

# **An experiment on iterated dominance and forward induction with virtual observability**

by

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## **ABSTRACT**

This paper presents a series of experiments based on a modified version of the Dalek Game, proposed by Kohlberg and Mertens (1983) and discussed by Binmore (1987- 1988) to illustrate the concept of forward induction. Balkenborg (1994) reported some experiments in which subjects played repeatedly the Dalek game in a random-matching environment with the prevalence of the backward induction outcome in over 80% of the cases. Starting from this experimental evidence, we propose a different version of Balkenborg's experiment by developing Binmore and Samuelson's (1999) insights for modeling the learning process through which an equilibrium is selected. We test a game where the forward induction equilibrium weakly iterately dominates the Nash equilibrium. We also assume the unobserved sequential condition (Muller and Sadanand 2001), where the first mover made his decision first but the second mover was not informed of the first mover's choice. Both players were informed of their position in the sequence and of the fact that the second player would decide without knowing the decision of the first player. Camerer, Knez, and Weber (1996) have referred to this feature as Virtual Observability (VO). It is as if the follower player can observe the earlier player's move although he does not. With this assumption we perform an exercise in comparative statics based on two different versions of the Dalek games. Our results show that the forward induction outcome is payoff-sensitive even with virtual observability because it arises when we impose a slight change in the payoffs that doesn't change equilibrium theoretical predictions.