

# **Would Einstein Play Nash?**

Ralph Bayer

Abstract: There are multiple candidate explanations for why humans often do not behave according to the (selfish) Nash prediction. Limited cognitive abilities, social preferences or strategic uncertainty are the prime suspects. The impact of limited cognitive abilities as a reason for deviations from Nash play is relatively under-researched, whereas social preferences and strategic uncertainty feature prominently in the literature. In this study we measure cognitive abilities and investigate how they influence behavior in experimental matrix games. Estimating different types of subjects via an error model we find that not even the subjects with the highest cognitive ability play Nash strategies. In a hierarchic type model subjects with higher cognitive abilities play strategies that require more iteration steps than subjects with lower abilities and adjust their strategies according to the information they have about their opponents. Subjects with lower ability are not able to sensibly use their information on their opponents.