

Experimental Study on the Decision Making process in a Centipede Game

Dhriti Goyal

International Institute of Information Technology, Hyderabad, India, Hyderabad, India

Dhiraj Jagadale

International institute of information technology, Hyderabad, Hyderabad, Telangana, India

Kavita Vemuri

International Institute of Information Technology - Hyderabad, Hyderabad, Telangana, India

Abstract

The study's objective was to measure the somatic state response (skin conductance and heart rate) and understand the decision making processes in a two-player Centipede game, an extensive form game, with a modified payoff. The experiment included fixed and random termination for analyzing the effect of players mutual trust on risk-taking behavior. The behavioral results reveal that trust controls the game rounds (that is, the number of pass decisions) in known or random termination game conditions, though the exit points were higher in the former compared to the latter condition. Higher skin conductance and heart rate during the game-play is noticed as compared to the baseline data showing anxiety during the gameplay and interestingly opponents action induced higher skin conductance amplitude than during self-play for the same decision. The data provides strong preliminary evidence of trust influencing cooperative gameplay.