

# Interpersonal trust: An asymptotic analysis of a stochastic coordination game with multi-agent learning

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We study the interpersonal trust of a population of agents, asking whether chance may decide if a population ends up in a high trust or low trust state. We model this by a discrete time, random matching stochastic coordination game. Agents are endowed with an exponential smoothing learning rule about the behaviour of their neighbours. We find that, with probability one in the long run the whole population either always cooperates or always defects. By simulation we study the impact of the distributions of the payoffs in the game and of the exponential smoothing learning (memory of the agents). We find, that as the agent memory increases or as the size of the population increases, the actual dynamics start to resemble the expectation of the process. We conclude that it is indeed possible that different populations may converge upon high or low trust between its citizens simply by chance, though the game parameters (context of the society) may be quite telling.

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