

GENEROSITY ENHANCES COOPERATION IN REPUTATION-BASED PRISONER'S DILEMMA GAME

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Reputation of an individual in human society depends on what and how she did in the past. We investigate a prisoner's dilemma game based on a reputation. When players meet, one can refuse to play the game if the reputation of the opponent is too low. We introduce a selective cooperator called *goodie* who participates in the game proportionally to the opponent's reputation, and study their roles in forming a cooperative society. We observe enhanced cooperation when goodies have small but nonzero probability to play the game even with the agent of the least reputation. Our finding implies that even such small generosity of goodies can provide defectors chances to encounter the better world of cooperation, encouraging them to escape from their isolated world of selfishness.