

**The Approval Mechanism Experiment:
A Solution to Prisoner's Dilemma**

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Tatsuyoshi Saijo*#, Yoshitaka Okano* and Takafumi Yamakawa*
Osaka University* and UCLA#

Abstract

Players can approve or reject the other choice of the strategy after playing a prisoner's dilemma game. If both approve the other choice, the outcome is what they choose, and if either one rejects the other choice, it is the outcome when both defect, which is called the mate choice mechanism. The Nash equilibria (*NE*) and subgame perfect equilibria (*SPE*) of this two stage game have all possible combinations of cooperation and defection. However, the outcome of neutrally stable strategies (*NSS*) and backward elimination of weakly dominated strategies (*BEWDS*) is that both are cooperative. We observed 100% cooperation in the experimental sessions of prisoner's dilemma game with the mate choice mechanism, and 7.9% cooperation in the session of the game without the mechanism. Experimental results and questionnaire analysis find that subjects' behavior is consistent with *BEWDS* rather than *NE*, *SPE* or *NSS* behavior.