

Cooperation Survives and Cheating Pays in a Dynamic Network Structure with Unreliable Reputation

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In a networked society like ours, reputation is an indispensable tool to guide decisions about social or economic interactions with individuals otherwise unknown. Usually, information about prospective counterparts is incomplete, often being limited to an average success rate. Uncertainty on reputation is further increased by fraud, which is increasingly becoming a cause of concern. To address these issues, we have designed an experiment based on the Prisoner's Dilemma as a model for social interactions. Participants could spend money to have their observable cooperativeness increased. We find that the aggregate cooperation level is practically unchanged, i.e., global behavior does not seem to be affected by unreliable reputations. However, at the individual level we find two distinct types of behavior, one of reliable subjects and one of cheaters, where the latter artificially fake their reputation in almost every interaction. Cheaters end up being better off than honest individuals, who not only keep their true reputation but are also more cooperative. In practice, this results in honest subjects paying the costs of fraud as cheaters earn the same as in a truthful environment. These findings point to the importance of ensuring the truthfulness of reputation for a more equitable and fair society.

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