

How Cooperation within Communities Can Evolve and Persist: Benefits of Indirect Generosity over Indirect Reciprocity

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One of the major puzzles in explaining the evolution of cooperation is that people often cooperate with others whom they will never meet again. Recent studies demonstrate that this behavior can be explained by *indirect reciprocity*: people behave cooperatively to strangers because they want to maintain a positive reputation. The present research tests and extends these predictions from a social psychological perspective, by examining its effectiveness among human participants in environments characterized by *unintended errors* (i.e., noise). By doing so, the present research tests the effectiveness of models rooted in reciprocity in realistic, noisy circumstances. Moreover, the present research extends such models by providing insight into their “psychology” – the role of psychological processes like impression formation and trust when people are confronted with reputations in an uncertain environment.

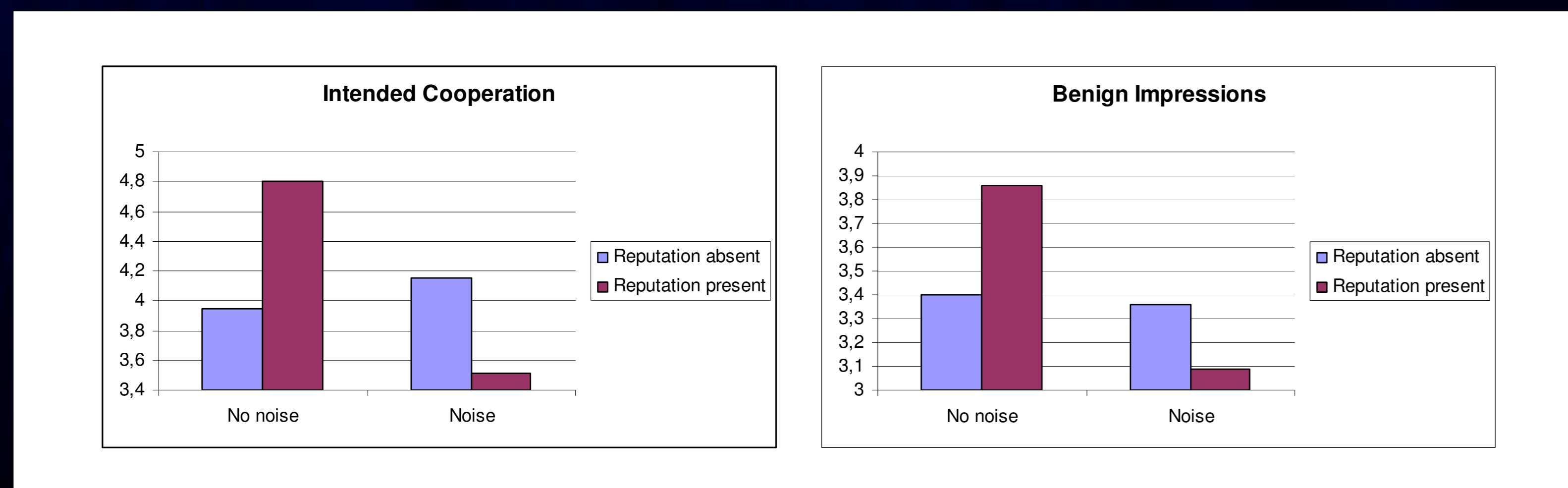
Method

Participants were assigned to 6-person groups. In each round of the experiment, the group was split into randomly composed dyads. Each dyad played a social dilemma task, the outcomes of which provided monetary payoffs. This procedure was repeated over 18 rounds.

Manipulation of indirect reciprocity. Reputation scores were manipulated to be absent or present, with participants in the reputation condition receiving feedback about their partners' average cooperation in previous rounds.

Manipulation of noise. Noise was manipulated to be absent or present, with cooperation scores in the noise condition being reduced in six out of 18 rounds.

Results



Discussion I

Study 1 provided strong support for our hypotheses that the functionality of indirect reciprocity is undermined by noise. Our findings supported the notion that building and maintaining a positive reputation can have positive effects for cooperation and trust, but *only* for situations that are noise-free.

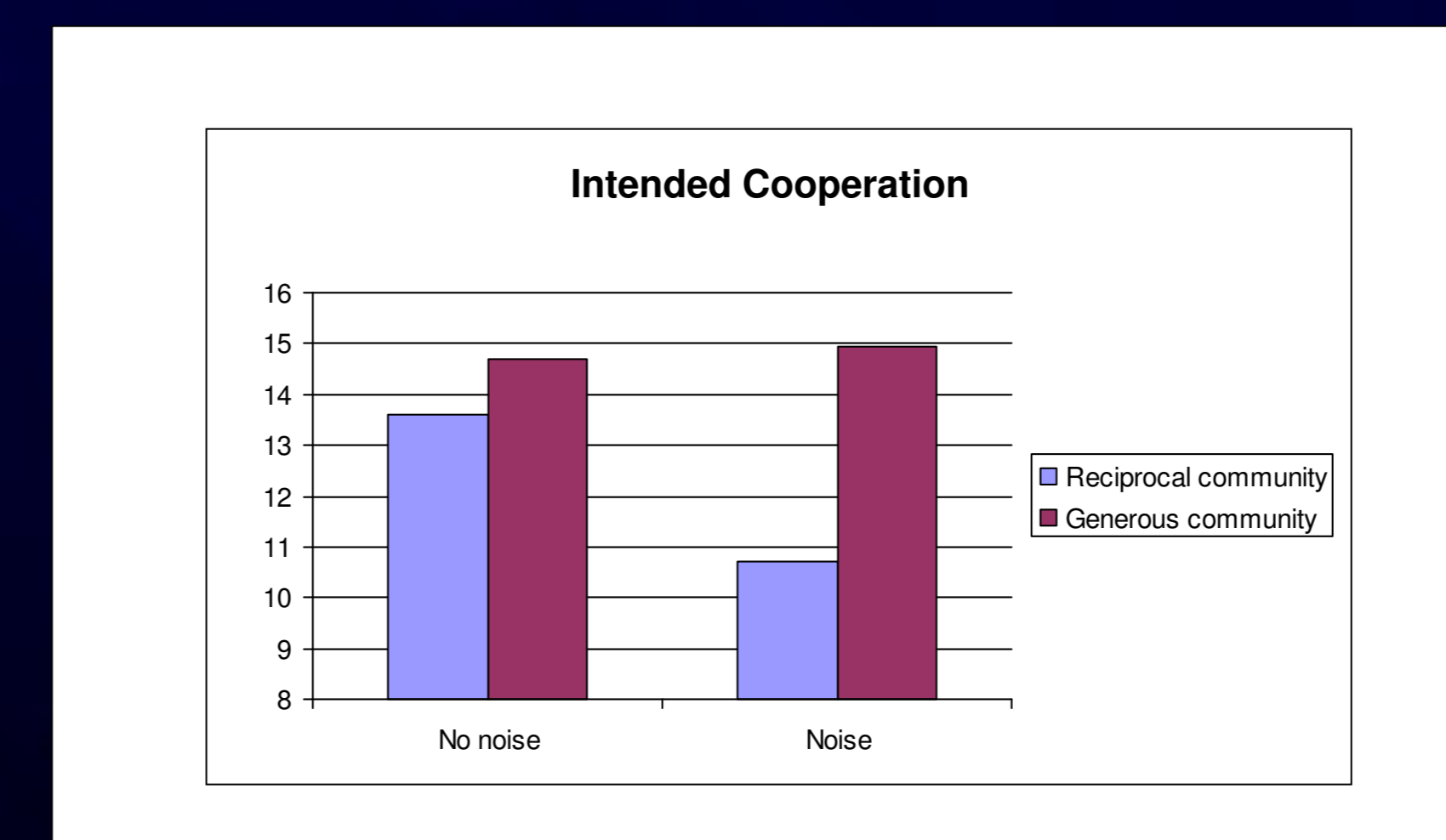
Method II

Study 2 was designed to complement and extend these findings. Our theorizing assumed that noise challenges the atmosphere of trust and benign intent in a community in that negative outcomes and the ambiguity about the intentions of other community members should result in uncertainty regarding others' reputations. Thus, in Study 2, we tested the hypothesis that in social situations in which others systematically seek to signal high trust may form a buffer against negativity effects.

In order to test this hypothesis, in Study 2 we manipulated the behavior of the community. Participants now interacted with preprogrammed interaction partners which were either reciprocal or generous, in an environment that did or did not feature noise.

Manipulation of community strategy. Reputation scores were present in all conditions. Partners were programmed to adhere to strict reciprocity or generosity, contributing slightly more than participants themselves.

Results II



Study 2 provides strong evidence in support of the hypothesis that indirect generosity helps overcome the detrimental effects of noise. Indirect generosity elicited particularly greater levels of cooperation than indirect reciprocity when the social environment was noisy.

Conclusions

The theory of indirect reciprocity, with reputation as key mechanism, provides a powerful evolution-based explanation for why people cooperate with strangers. The present research reveals, however, that its effectiveness may well be limited to noise-free environments. In more realistic, noisy environments, opportunities for reputation maintenance and building no longer promote cooperation – indeed, under such circumstances, indirect forms of *generosity* in fact are more effective.

The present research contributes to insight into the evolution of cooperation by focusing on the *psychology* of such interactions. By doing so, the present research highlights the role of psychological processes like trust and impression formation in establishing and maintaining cooperative relations. Moreover, the present research reveals that actions that sustain or promote trust – such as indirect generosity - may serve as a buffer against repeated incidents of negative noise. By taking this psychological perspective, the present research thus both provides new insight, and raises new questions regarding the evolution of cooperation among strangers.