

Abstract

Large scale cooperation among non-kin individuals is an evolutionary puzzle since it enhances other individuals' fitness at a cost to oneself. One possible solution to this puzzle is evolution of strong reciprocity through group selection. Rejection choices of unfair offers in the ultimatum game has been considered a testimony to the operation of the social preferences of inequity aversion and reciprocity that underlie strong reciprocity. Across three studies using three different methodologies (strategy method, one-shot game, repeated one-shot game), we compared rejection behavior in the ultimatum, impunity, and private impunity games. Results showed that about 30-40% of responders who faced an unfair offer rejected it even when such behavior aggravated unfairness rather than reducing it (i.e., in the impunity and the private impunity games), though the rejection rates in these games were only about a half of that in the ultimatum game. It was also found, across three studies, that the rejection rate of unfair offers in the impunity game was about the same as that in the private impunity game, in which the responder's decision was not informed to the proposer. These results support the view that at least a sizable portion of rejection behavior in the ultimatum game is a response to a challenge or an insult implied by such an offer, rather than a reflection of social preference such as inequity aversion or reciprocity.