

A new article entitled "[Evolution of direct reciprocity under uncertainty can explain human generosity in one-shot encounters](#)" by Andrew W. Deltona, Max M. Krasnowa, Leda Cosmides and John Tooby (Published online in [PNAS, 25 July 2011](#)) suggests that 'generosity', the fact that we are willing to incur costs to provide anonymous others with benefits, is a necessary byproduct of an adaptation for reciprocity.

Abstract: Are humans too generous? The discovery that subjects choose to incur costs to allocate benefits to others in anonymous, one-shot economic games has posed an unsolved challenge to models of economic and evolutionary rationality. Using agent-based simulations, we show that such generosity is the necessary byproduct of selection on decision systems for regulating dyadic reciprocity under conditions of uncertainty. In deciding whether to engage in dyadic reciprocity, these systems must balance (i) the costs of mistaking a one-shot interaction for a repeated interaction (hence, risking a single chance of being exploited) with (ii) the far greater costs of mistaking a repeated interaction for a one-shot interaction (thereby precluding benefits from multiple future cooperative interactions). This asymmetry builds organisms naturally selected to cooperate even when exposed to cues that they are in one-shot interactions.