An Evolutionary Perspective on Lotteries for Public Goods

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In the case of a public good financed by lottery, contestants submit irrecoverable bids to influence the probabilistic award of a prize and bids contribute to the funding of a public good. This paper considers behavior in lotteries for public goods, and the preferences driving that behavior, from an evolutionary perspective. I show that a public goods lottery's evolutionarily stable strategy (ESS) in a finite population differs from its Nash equilibrium, is unique, entails lottery bidding in excess of Nash equilibrium levels, and, therefore, entails public good provision in excess of Nash equilibrium levels. I also investigate the evolution of players' preferences, that is, their degree of "altruism," or perceived marginal per capita return to contributions to the public good. When preferences evolve through pairwise matching and interaction in one-shot lotteries for public goods, evolutionarily stable preferences (ESP) overstate the material return to contributions to the public good. Finally, the behavior induced by evolutionarily stable preferences is equivalent to behavior described by evolutionarily stable strategies.

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