

Evolution of Interdependent Preferences in Aggregative Games*

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Abstract

We study the evolution of preference interdependence in aggregative games which are symmetric with respect to material payoffs but asymmetric with respect to player objective functions. Specifically, some players have interdependent preferences (in the sense that they care not only about their own material payoffs but also about their payoffs relative to others) while the remainder are (material) payoff maximizers in the standard sense. We identify a class of aggregative games whose equilibria have the property that the players with interdependent preferences earn strictly higher material payoffs than do the material payoff maximizers. Included in the class are common pool resource and public good games. If each member of the population interacts with each other member (the playing-the-field model), we show that any evolutionary selection dynamic satisfying a weak payoff monotonicity condition implies that only interdependent preferences can survive in the long run.

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