

Abstract

We introduce a game theory inspired model for individual choices to cooperate and contribute personal resources to small group decisions versus to defect and free-ride on the contributions of other group members. The model makes plausible assumptions about the marginally-diminishing impact of individual contributions to the group product and about a linear additive cost function for individual contributions. The implication is that, under most conditions, there is a rational cooperation-defection equilibrium under which some, but not all members of a group will contribute, even with completely self-interested motives. An evolutionary simulation verifies the original conclusions reached more informally and a behavioral test demonstrates that individual behavior in small groups is consistent with the model. A collateral result demonstrates the relative advantages of majority-plurality group decision rules in producing greater individual net welfare. This is an original proof that cooperation in ad hoc decision making groups can be understood in terms of self-interested motivations.