Evolving informal risk-sharing cooperatives and other-regarding preferences

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Abstract. In this paper we present a model of formation and destruction of informal cooperatives in a population of agents who perform a risky activity and who are heterogeneous in terms of success in their actions. Although some agents have high-risk and others low-risk, our model displays a dynamics with cooperatives in which agents share equally their income with a certain stability. We are interested in studying at the same time the existence of cooperatives, their ability to integrate a large proportion of agents and the degree of segregation of these cooperatives. Three factors can explain the existence, stability and lack of segregation. First, we show that the classical explanation in economics holds within the framework of our model: when agents are risk averse, high success agents can share with low success agents so that to stabilize the value of their income - the higher the risk aversion, the more stable the cooperatives and the lower the segregation. Learning can explain in a small proportion the existence of cooperatives: we designed agents so that they have to learn whether they are high or low-risk, and while they are learning, they tend to create cooperatives that can last. Eventually we worked on the integration of other-regarding preferences in the model, with two different definitions. As expected, the influence of other-regarding preferences is to increase stability and decrease segregation, and the two models of rationality react differently to the type of network in which the agents are immersed. This paper, mainly exploratory, presents our model and shows the influence of the definition of network as well as all other factors presented before. In that sense, although we have mainly done a rough exploration of its