

## **Public Goods Provision in the Field: ABMs of a Local Production System Considering Empirical Behaviour and Communication.**

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In SwarmFest 2004, I presented the work done in inferring behaviours of subjects involved in public goods provision experiments. The results were interesting, showing how the paradigm of Genetic Programming can be used to infer human strategies from collected experimental data and how human strategies can be categorised in three different groups: selfish, altruistic and reciprocators. In the meanwhile, the presence of those three different behaviours has become one of the most debated issue in the literature: many studies have been published in the last years to show the coexistence of the three strategies and its role in evolution of social behaviour.

In this work I firstly show how the results of the work I mentioned are consistent with the findings cited in literature, and how both the distribution of strategies and the matching function are relevant for the aggregate outcome.

Then I describe a small Local Production System (LPS) located in Italy, that has been the subject of an empirical study I conducted in the last year. I'll describe how the social dilemma present in the LPS, which is the fact of guaranteeing a high level of product quality, can be interpreted as a problem of public good provision for the system (and the public good in that case is represented by product quality).

Through questionnaires and interviews I collected empirical data on the system and then I've been able to simulate the system: the outcomes of such simulations will be presented, dealing in particular with some policy proposals which are now being considered due to the competitive challenges the LPS is facing.

Finally I'll show some methodological issues emerged in the process and I'll compare the experimental and the empirical version of the model, stressing how elements as culture, interaction structure and subjects' heterogeneity can modify the outcomes.