

Let the Others Do the Job: Comparing Public Good Contribution Behavior in the Lab and in the Field

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Under the assumption of payoff-maximization, standard game theory predicts that groups playing a public good game (PGG) do not manage to coordinate on the social optimum of full cooperation and play the pareto-inferior Nash-equilibrium of zero contributions instead. Contrary to this, numerous lab experimental studies have shown that subjects contribute on average positive amounts to the public good. The variation across subjects is, however, large with some subjects contributing nothing and others their entire endowment. (Chaudhuri, 2011) We observe the same in many real-world situations: Some co-workers care more about the cleanliness of the shared coffee machine than others, some researchers contribute less to a joint paper than their co-authors, and some students invest more time and effort in a group assignment than their peers.

The purpose of our study is to test whether cooperative behavior in an abstract PGG setting is correlated with behavioral patterns observed in a real-world field setting – the field in our case being a student group assignment. So far, only few studies have investigated this relation and they have come to contradictory conclusions: Some find a significant correlation between lab and field behavior (e.g. Englmaier and Gebhardt (2011), Fehr and Leibbrandt (2011)), others find only a weak or no correlation at all (e.g. Laury and Taylor (2008), Stoop et al. (2012)). The mixed evidence may be the consequence of the challenges involved in closely matching a lab and field setting. We try to overcome some of the most salient limitations of the existing studies by using a naturally occurring field setting which we do not modify at all for our study and a within-subjects design allowing for individual level analysis.

Our study takes advantage of a naturally occurring PGG, namely students working on a group assignment for a university course. The group optimal strategy is the investment of the maximum amount of effort and time by all members, since this should result in good grades for all of them. Because contributing to the joint task is beneficial for all but costly for the individual, free-riding on the efforts of the others can be the individually most beneficial choice. But if all group members decide to free-ride, none of them will pass the course. We use an online survey to collect data on each student's contributions to the group assignment. Contributions are measured in two ways: (i) as time invested in group work activities and (ii) as quality of an individual's contribution to the group assignment. To balance potential biases in the self-reported data, we use methods of network analysis, linking a student's assessment of her own contribution with the assessments of her contribution by the other group members. In addition, we collect information about the collaboration of the group in general and third factors which might affect an individual's willingness to contribute, such as an

individual's ambitions, course-relevant knowledge or language skills. Since we are interested in comparing contribution behavior in the 'lab' and in the field, a central part of the survey is the elicitation of students' contributions in an online PGG, our 'lab measure'. We implement both an unconditional PGG and a conditional PGG using the strategy method (Fischbacher et al., 2001). The use of a within-subject design allows us to make comparisons both on the aggregate and the individual level.

To date, our sample consists of 181 students. A first analysis of the data suggests that students who are more cooperative in the unconditional PGG also contribute a higher quality of work to the group assignment. This finding is significant on the 5%-level and robust to changes in the model specification. There is also a positive and weakly significant correlation between contributions in the unconditional PGG and time invested in the group assignment. The effect becomes, however, negligible and insignificant when other factors, such as language skills or course relevant knowledge, are added to the model.

We further test whether the classification of students as conditional cooperators or free-riders according to their contribution behavior in the conditional PGG is informative about their behavior in the group assignment. Students classified as conditional cooperators are expected to contribute on average more to the group assignment than those classified as free-riders. The group assignment consists of various tasks and we expect this effect to be particularly salient for the first task, i.e. before conditional contributors adapt their contributions to the average contributions of the others. We indeed find that free-riders spend on average fewer hours on group-task-relevant activities than conditional cooperators, both in total and for each task of the group assignment including the first. However, in no case is the difference significant.

This study is work in progress and further data will be collected to enlarge our sample size and increase the validity of our results. An additional focus of analysis will be on investigating whether the stylized facts found in many lab PGGs can also be observed in our field setting (in particular with respect to group heterogeneity and the use and effect of sanctions).

References

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