

The private provision of public goods is an economic problem that has become increasingly important in recent years. Solving difficult environmental problems - above all that of climate change - requires cooperative action, and our democratic systems depend on the voluntary participation of many people actively supporting this action.

Since Mancur Olson's classic book "Logic of collective action" was published in 1965, there has been a broad consensus in the economic and social sciences that large groups are hardly in a position to privately provide public goods to any significant extent.¹ The reason for this is that the impact that individuals in a large group have on the provision of a public good is typically very small. Olson's thesis thus is that in large groups the incentive to invest in public goods is virtually zero and, therefore, the public good will not be provided.

The private provision of public goods has been extensively examined in experimental economics with the help of the so-called voluntary contribution mechanism (VCM) introduced by Isaac et al. (1984).² However, this research has almost completely refrained from examining Olson's central argument: almost all research has dealt with small groups, in which the influence of the individual player on the production of the public good is clearly perceptible. Technically speaking, while Olson's theory is about large groups, with very small MPCR (marginal per capita return of investment in the public good), and experimental research is almost exclusively about small groups with large MPCR.

In our paper, we close this research gap by carrying out controlled laboratory experiments with over 5,000 different test subjects in groups of up to 100 people and very small MPCRs.

The results of a first series of experiments show that Olson's thesis *cannot be supported*. Large groups with small MPCRs can provide public goods equally well as small groups with large MPCRs.

This important first finding leads us to the question, if Olson's logic of collective action does not apply, what determines the behavior of large groups in the provision of public goods? We start with the observation that small variations in the MPCR lead to strong effects in large groups. From this, we develop the hypothesis that the salience of the mutual advantageousness of cooperative behavior plays a central role in the willingness to cooperate. As a proxy for salience, we use the distance between the minimum MPCR rendering, from the group perspective, contribution to the public good efficient and the MPCR actually used in the experiment. The greater this distance, the more advantageous is cooperation. **In a second series of experiments, we test this MPCR-distance hypothesis and find strong evidence that it is better able to explain our data than previously discussed hypotheses in the literature.**

The two key findings of our paper are of considerable importance both for research on public goods and for solving real public-good problems. In addition to the insight that small groups can be suitable models for large groups, it is particularly important for researchers to realize that the salience of the benefits of cooperation needs to be given more attention. This raises

¹ Mancur Olson 1965. *The Logic of Collective Action. Public Goods and the Theory of Groups* (Harvard University Press, Cambridge, Mass. 5th printing 1975).

² Mark Isaac, James Walker, Susan Thomas 1984. Divergent evidence on free riding: An experimental investigation of some possible explanations. *Public Choice* 43, 113-149.

new research questions that are not yet on the scientific agenda in this form. In addition, our paper makes a methodological contribution since we can show that by interconnecting several laboratories it is possible to increase laboratory capacity without influencing the behavior.

Our findings are of great importance for solving real cooperation problems. If the salience of the advantages of cooperation is indeed the driving force behind cooperative behavior, then new strategies can be derived from this, with the help of which it can be possible to win more people over to actively tackle environmental problems and to commit themselves to the survival of democratic societies. In addition, our results make it clear that solving cooperation problems can be possible in large groups without state intervention.