

social capital theory, which shows that social collaboration is built on social networks that underlie norms of reciprocity and trustworthiness. The development of these pro-social dispositions is in turn enabled in societies that further extra-familial ties and disregard or transcend purely 'amoral familist' interactions [Banfield 1958].

This research project nevertheless leaves several unresolved problems. First, there is the problem of causality, which derives from a major theoretical dilemma in the social sciences. To what extent are pro-social dispositions the result of structural constraints, such as market integration, or rather an active element in structuring these constraints [Giddens 1997]? Joseph Henrich (Chapter 2) discusses this problem on a theoretical level by explaining the different mechanisms through which the structure of interaction affects preferences. Yet only future longitudinal research will be able to empirically ascertain to what extent, and under which conditions, social structure shapes human motivation/preferences. Second, the book relies on the questionable idea that the any given individual is guided by a consistent and univalent body of motives. This entirely disregards the possibility that people weigh several (not necessarily consistent) motives at the same time and combine them in various ways in order to arrive at trade-offs in their distribution preferences, and that they do so differently in different situations. Future research should allow for the possibility of ambivalent motives and identify the conditions that give salience to different types of motives and trade-offs. The innovative use of the ethnographic (qualitative) methods in this book, which may unveil different sorts of motives that remain undetected by quantitative methods, should therefore be deepened in future studies. Finally, as suggested by Henrich, the book's findings stimulate an evolutionary puzzle to be more fully addressed in future work: Why do unselfish motives evolve in

the face of the evolutionary logic in which material advantages can be achieved by adopting self-interested preferences?

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Herbert Gintis – Samuel Bowles –
Robert Boyd – Ernst Fehr (eds.): *Moral
Sentiments and Material Interests.
The Foundations of Cooperation
in Economic Life*

Cambridge, Massachusetts 2005:
MIT Press, xii + 404 pp.

Imagine a situation in which you are a member of a group of four. Each member has a monetary endowment of €10. Your task is to decide how much of the money to contribute to a common group project, while you keep for yourself what you do not contribute. After everyone has made his decision, all contributions to the project

are summed up. Then the money contributed to the project is doubled, and each group member gets a quarter of the money in the project, regardless of the amount he personally contributed. This decision situation constitutes a social dilemma. If you and the other three group members cooperate fully and contribute your complete €10 to the project, everyone will receive a payoff of €20. However, traditional economic theory tells us that you will not reach this socially desirable state. Homo economicus – a rationally acting individual who is exclusively motivated by material self-interest – will keep the entire €10. Irrespective of the contributions of other group members, not contributing always maximises a person's own payoff, because €1 contributed to the project yields him/her a payoff of €0.50, which is less than just keeping the €1. Thus, traditional economic theory predicts no contributions to the common project, and the group will settle for the inferior state in which everyone earns €10 instead of the possible €20.

The social dilemma just described is a ubiquitous phenomenon in human interactions, but frequently the pessimistic prediction derived from the paradigm of homo economicus is proven wrong. This is the central lesson from *Moral Sentiments and Material Interests*. The volume is an example of truly interdisciplinary work assembling thought-provoking overviews of research on non-selfish behaviour from anthropology, primatology, evolutionary biology, economics, sociology, political science, and social psychology. The authors employ a remarkable variety of methods, among them laboratory experiments, surveys, formal modeling, simulations and extensive field research.

Overall, the book consists of four parts. In their introductory chapter, the four editors Herbert Gintis, Samuel Bowles, Robert Boyd, and Ernst Fehr, review evidence from laboratory experiments which unambiguously documents that the assumption

of egoistic individual motivations does not apply in reality. People frequently deviate from the predictions of traditional economic theory, and these deviations exhibit clear patterns. The central claim of the volume is that individual motivations are heterogeneous. Some individuals might indeed pursue their own immediate material self-interest. But a notable fraction are motivated by strong reciprocity, which is defined as a predisposition to cooperate with others, and to punish those who violate the norms of cooperation, even when it is implausible to expect that these costs will be recovered at a later date. The existence of strong reciprocators possibly changes the incentives of egoists. If they anticipate punishments by the strong reciprocators in the case of non-cooperation, and if the costs of being punished exceed the benefits from deviation, cooperation becomes their utility maximising strategy. Gintis et al. thus argue that there is an intrinsic propensity to cooperate. They further argue that incentives designed to induce cooperation among egoists often fail to reach a welfare enhancing effect, as they could crowd out intrinsic cooperation.

The book's second part, 'The Behavioral Ecology of Cooperation', focuses on the evolutionary foundations of cooperation. Joan Silk's insightful review of research on altruism among non-human primates shows that monkeys are no material egoists at all. Grooming and food sharing behaviour illustrates that they incur costs to benefit others. However, there is no evidence that this behaviour is driven by strong reciprocity. Cooperation is confined to kin and reciprocating others, while third-party punishment is apparently absent among primates. The same point holds for the analysis of the evolution of food sharing among humans by Hillard Kaplan and Michael Gurven. Their study shows that long-term asymmetries of food transfers among relatives were a precondition of the course of human evolution.

Nor do Eric Smith and Rebecca Bliege Bird apply the concept of strong reciprocity in their chapter. Instead, they use costly signalling theory, which assumes that altruistic behaviour is attributed to information asymmetries among individuals. Individuals favour other people in order to signal certain not directly observable qualities. Group beneficial signals are favoured by the fact that they attract more attention than neutral signals. Overall, the chapters in part II provide evidence for the prevalence of non-selfish motivations over a long period of human evolution. However, they do not present evidence for the impact of strong reciprocity in that process.

In the first chapter of the third part, 'Modeling and Testing Reciprocity', Ernst Fehr and Urs Fischbacher review further laboratory evidence which undermines the self-interest hypothesis and again highlights the heterogeneity of individual motivations. Like the introduction, this chapter underlines the value of controlled laboratory experiments in research on individual motivations. Since motivations cannot be observed directly, it is only possible to infer the underlying motivations from concrete behaviour. Field data are influenced by many factors, which frequently impede unambiguous inference. These two chapters impressively demonstrate that experimental research offers an innovative supplement to the traditional social science toolkit. In the next chapter, Armin Falk and Urs Fischbacher develop a formal model of individual behaviour incorporating strong reciprocity in utility functions. This is an important endeavour as it requires clarity concerning the shape of the assumed motivational forces. Precision on that point is essential, because it is possible to rationalise any behaviour just by assuming the appropriate motivations *ex post*. This however, would only lead to tautological inferences.

Strong reciprocators incur costs to punish non-cooperating others. However,

this behaviour decreases the fitness of the punisher compared to non-punishing individuals. Thus, evolutionary forces should lead to the extinction of reciprocators in societies. Robert Boyd, Herbert Gintis, Samuel Bowles, and Peter Richerson present findings from simulations demonstrating that altruistic punishment can nevertheless survive and flourish in the course of evolution. Group selection plays an important role here. Groups containing a considerable number of altruistic punishers are able to exclude defectors. These groups reach higher rates of cooperation, and their resulting superior fitness levels let them grow faster compared to competing groups. Thus, group selection can maintain strong reciprocity. Rajiv Sethi and E. Somamathan use a similar argument. Cooperation depends on the ability of reciprocators to make credible commitments to monitor and punish deviating behaviour, even if this is costly to them. Applying a formal model to a common pool resource environment, they analyse the conditions under which cooperation can be stabilised. Overall, both chapters show that strong reciprocity can survive evolutionary pressures. This finding, however, does not imply that altruistic punishment actually is a behavioural trait designed to improve chances of survival.

The fourth part, 'Reciprocity and Social Policy', focuses on the policy implications of strong reciprocity. In a fascinating chapter, Elinor Ostrom presents evidence from experiments and a huge body of field research indicating that centralised governance of common pool resources can crowd out intrinsic cooperation and can thus lead to sub-optimal outcomes. Institutional design is a highly complex task which should not ignore the reciprocal facets of individual motivations. Christina Fong, Samuel Bowles and Herbert Gintis argue that individual attitudes towards the welfare state can be traced to reciprocal motivations. People are not willing to

support the poor when they perceive the poor being responsible for their own situation. This is interpreted as non-cooperative behaviour towards the community, triggering a reciprocal response of decreasing support. Similar forces are present in the labour market. As Truman Bewley argues, wages display a downward rigidity because employees perceive a wage cut as an unfriendly act resulting in a reciprocal response with lowered work effort. Examining tax compliance, street crime, and the placement of public facilities like waste dumps or prisons which put a burden on the affected community, Dan M. Kahan also highlights the possible cooperation-disrupting effects of material rewards and punishments. For example, high penalties for tax evasion might signal a low rate of tax compliance, thus decreasing the propensity of reciprocators to comply. In the final chapter, Bowles and Gintis argue for the adoption of community governance as the framework employed to solve social dilemmas, because communities exhibit superior capabilities to enforce social norms.

To sum up, *Moral Sentiments and Material Interests* is an excellent collection of interdisciplinary research. The scope of the book is much wider still than its subtitle suggests. The contributors present compelling evidence that human behaviour is not guided by purely selfish motives. However, the evidence for the proposed alternative, strong reciprocity, is not equally strong. Several contributors to the volume favour competing explanations like kin selection, strategic reciprocity, or costly signalling. There are also some open questions concerning aspects of the concept of strong reciprocity. Take, for example, the role of intentions. In the introduction the editors argue that strong reciprocators respond to fair or unfair intentions of oth-

ers while the fairness or unfairness of the resulting outcome is less important. However, in a strategic interaction, an individual can hardly observe the true intentions of his or her counterparts. For instance, an individual cannot distinguish whether a counterpart's generous behaviour stems from true kindness or whether that person just strategically wants to appear kind in order to avoid possible punishment from a reciprocator. This argument shows that there are several ways of modelling unselfish behaviour. Differentiating among them needs further effort in modelling and empirical testing.

Nevertheless, the book is a thought-provoking read that offers many ideas for future research. For example, several chapters stress the importance of heterogeneity of individual motivations. In every society, reciprocators co-exist with egoists and other types of individuals. The composition of a community is an important explanatory factor of the degree of cooperation among its members. The introductory chapter shows that there is cultural diversity of human motivations which can partially be explained by the degree of market integration and the degree of cooperation in production in a given society. Future research should focus on intra-cultural diversities of human motivations and search for explanations why some people possess a propensity to cooperate while others are purely egoistically motivated. Such knowledge would be a next step for a deeper understanding of the foundations of human cooperation.

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