Putting Social Preferences into Context
Separating Monetary and Socio-Psychological Incentives[*]

Andreas Bergh[†]

Lund University & The Research Institute for Industrial Economics (IFN), Stockholm

Philipp C. Wichardt[‡]

IfW Kiel, CESifo Munich, and Department of Economics, University of Rostock

This Version: December 30, 2013

Prepared for the annual meeting of the American Economics Association, January 3-5, 2014 in Philadelphia, PA.
Work in progress - please contact authors for latest version!

Abstract

Common models of social preferences usually assume the existence of a preference for other-regarding behavior / equal sharing. And, apart from this preference being potentially idiosyncratic in strength, qualifications are at most made informally on conferences when empirical deviations from predictions are explained by contextual variables. Starting from this observation, we present a simple framework which allows us to model "social preferences" in a game theoretic which explicitly separates economic incentives from potential social (context) effects. Moreover, we discuss and exemplify how the framework can be used to empirically study the effect of contextual variables as well as the influence of subject characteristics on the sensitivity to such variables.

Keywords: Context Effects, Efficiency, Social Norms, Social Preferences, Utility

JEL codes: D03, D63, Z10

[†]Department of Economics, Lund University, PO Box 7082, SE-22007 Lund, Sweden; tel.: +46-(0)46-2224643 ; e-mail: drbergh@gmail.com.

[‡]Department of Economics, University of Rostock, Ulmenstraße 69, D-18057 Rostock, Germany; tel.: +49-(0)381-4984486; e-mail: philipp.wichardt@uni-rostock.de.

1 Introduction

One of the fundamental tenets of economics is that people respond to incentives. Traditionally, the incentives are assumed to be material and related to the individual's own consumption. By now, however, the tendency of people to deviate from the predictions of simple self-centered utility-maximization, where utility is understood in terms of economic benefits, is well documented in the literature (e.g. Bowles and Gintis, 2011; Bolton et al., 2008; Gintis et al., 2005; Hoffman et al., 1994; Rabin, 1993).

Importantly, these findings do not imply that monetary incentives do not matter. Rather, they suggest that the most important incentives are often social rather than monetary. This simple observation suggests that there are fruitful insights to be gained by combining the economic and psychological approach to explaining human behavior: Economists study monetary incentives, and the models work well in many market related activities. Psychologists, by contrast, take a different point of departure and, for example, often take the fundamental human desire to be liked by others (to seek social approval) as their starting point and study how this desire influences behavior.

In the present paper, we present a simple model that explicitly differentiates between economic and socio-psychological / context-driven effects on behavior. The advantage in doing this, is that it enables us to study separately the influence of changes in the economic incentives (keeping the type of context fix) and the psychological impact of changes in the context (keeping the economic incentives fixed). In doing so we can, for example, test for effects of different individual characteristics as determinants of the strength of socio-psychological context effects. In the present paper, we exemplify this point focusing on gender effects and the expressed desire to be liked by others.

Moreover, while a lot has been written by economist on social preferences, surprisingly little has been said possible drawbacks of these. For example, are people with social preferences more prone to cooperating in social dilemmas or does that depend on the context? And if so, how? Or, more generally put, do social preferences foster economic growth or does that again depend on some additional contextual variables? Table 1 illustrates how a crude classification of behavior as selfish or other-regarding combined with some normative criterion to evaluate consequences, generates four possible cases, labeled A to D.

As a matter of fact, much research in economics has examined the circumstances under which selfish behavior leads to desirable social outcomes, theoretically using

criteria such as Pareto efficiency or social welfare functions, and empirically by examining growth or levels of GDP per capita. That research concerns case A versus case B in Table 1. However, the corresponding discussion for other-regarding behavior (case C versus case D) is much less developed. Yet, labeling case B *market failure*, it is reasonable to acknowledge the possibility that social preferences may also have undesirable consequences and to study the effects of such *social failure* (case D).

Table 1: Behaviors and their efficiency consequences

Consequences		Behavior	
		Selfish	Other-regarding
	Desirable	A	C
	Undesirable	B	D

In previous research, several modifications of the standard model have been suggested to account for behavior that seems incompatible with self-centered utility maximization. For example, Andreoni (1990) suggests that people derive utility from acts of generosity (warm glow), Holländer (1990) assumes that selfish motives are modified by a social approval activated by contributions to a public good, Fehr and Schmidt (1999) suggest that some people experience disutility from income differences (inequality aversion), Sethi and Somanathan (2006) assume that some people have an unselfish taste for punishment, Falk and Fischbacher (2006) assume that agents reciprocate good intentions, Tabellini (2008) suggest that people derive a non-economic, psychological benefit from cooperating in the prisoner's dilemma, and Wichardt (2011) assume that some people have a preference for identity-consistent behavior.

These and similar models shed light on human behavior in various situations, but they are typically designed to fit the behavior in specific situations. Furthermore, the wider economic consequences of other-regarding behavior either follow by assumption or are left unanalyzed. In contrast, the approach taken here makes no a priori assumptions on social preferences having desirable or undesirable consequences.

Taking up recent developments in psychology, however, we use the liberties grated by our approach and try and analyze the impact of the fundamental and well-documented human desire to be liked by others (James, 1890; Cooley, 1902) on behavior. The desire to be liked by others has recently re-appeared in sociometer theory (Leary et al., 1995), and has substantial empirical support. Anthony et al. (2007) and Leary (2003) show that people have the ability to sense signals from others regarding how accepted and liked their behaviors are. Srivastava and Beer (2005) show that being

3

liked by others lead to more positive self-evaluations. Masclet et al. (2003) show that the option to assign "disapproval points" increased contributions in a public good game, despite the fact that the disapproval points had no material consequences. As Bowles and Gintis (2011) summarize, human sensitivity to criticism from their peers means that purely symbolic punishment is often sufficient to induce cooperation in social dilemmas. The data presented in the empirical part of this paper partly support this view.

The rest of the paper is structured as follows: In Section 2, we introduce a formal framework and illustrate it by means of some simple examples. In Section 3, we move on to present survey evidence from different scenarios where the economic consequences of other-regarding behavior varies as well as the data from a classroom experiment in order to further support our basic argument. Section 4 concludes.

2 The Model

In the sequel, we introduce a simple formal framework to model social concerns in strategic interaction (Section 2.1) and provide some illustrating examples (Section 2.2).

2.1 Technical Set-Up

As a starting point, consider a standard normal form game given by a finite set of Players N, for each player i, $i \in N$, a finite set of strategies S_i and a utility function $u_i : \times_{i \in N} S_i \mapsto \mathbb{R}$ reflecting player i's preferences over outcomes.

In addition to this, assume that prior to the play of the game Nature chooses the state of the world θ, with $\theta \in \{\mathbb{E}, \mathbb{S}^1, \ldots, \mathbb{S}^n\}$, where the probability of $\mathbb{E}$ is given by p_0 and the probability of $\mathbb{S}^k$ is given by p_k, $k = 1, \ldots, n$, and $\sum_{k=0}^{n} p_k = 1$. Moreover, for each player i, $i \in N$, and each state of the world $\mathbb{S}^k$, $k = 1, \ldots, n$, let there be a distinguished subset of pure strategies $\hat{S}_i^k \subsetneq S_i$, $\hat{S}_i^k \neq \emptyset$, such that if $\theta = \mathbb{S}^k$ utility for player i is given by

$$U_i(s_i, s_{-i}) = \begin{cases} u_i(s_i, s_{-i}) & \text{if } s_i \notin \hat{S}_i^k \\ u_i(s_i, s_{-i}) + \xi_i(S^k) & \text{if } s_i \in \hat{S}_i^k \end{cases}$$

with $\xi_i \in \mathbb{R}_0^+$.[1]

---

[1] For the sake of argument, we restrict attention to positive benefits of appropriate behavior.

Intuitively, one can think of $\theta = \mathbb{S}^k$ as indicating a certain (type of) social context,[2] whereas $\mathbb{E}$ indicates a purely economic one. $\hat{S}_i^k$, then, is the socially desired or accepted behavior, e.g. the behavior prescribed by some social norm, in the corresponding context. Thus, if the context is social in nature, players obtain a, possibly idiosyncratic, additional social payoff ξ_i from complying to what is socially desired; a possible motivation put forward in the introduction is that players might want to be liked by others.

Thus, ex ante, there are two types of uncertainty: (a) wether the context is social or not; and, if it is, what the appropriate behavior in the context is, i.e. knowing that $\theta \neq \mathbb{E}$ uncertainty remains as to which $\mathbb{S}^k$ actually realized. While the differentiation between both types of uncertainty may appear unnecessary at first glance, we believe that it is important as standard economic theory is best tailored the case $\theta = \mathbb{E}$, where only "visible" / "countable" incentives matter. Yet, apparently it has difficulties once socio-psychological aspects, which again are likely to vary with the (type of) context, come into play.

2.2 Examples

In the sequel, we illustrate the general effects of our model by means of some simple examples. The discussion concludes with some predictions for behavior which we then put to the test in the empirical part of the paper.

Transforming a Social Dilemma
As a first illustrating example, consider the a standard Prisoner's Dilemma game as depicted in Figure 1.

	C	D
C	9, 9	0, 10
D	10, 0	4, 4

Figure 1: A common Prisoner's Dilemma game.

Arguably, effects such as guilt (e.g. Charness and Dufwenberg, 2006; Battigalli and Dufwenberg, 2007) or cognitive dissonance (e.g. Wichardt et al., 2009) may suggest adding negative effects of disobedient behavior as well.

[2]When referring to a context, we of course mean classes of contexts such as "meeting colleagues" or "family." If the individuation of the context went any further, the framework would become tautological.

In addition, assume that the context is social, e.g. because players are observed by peers who think that C is the nicer action, i.e. $\hat{S}_1 = \hat{S}_2 = \{C\}$ and $p_0 = 0$. Moreover, assume that $\xi_1 = \xi_2 = \xi$. Then, if the social payoff ξ is sufficiently large such that $\xi > 4$, C is the preferred action regardless of the other agent's action and (C, C) becomes the unique Nash equilibrium. By contrast, for $\xi \in [1, 4]$ both (C, C) and (D, D) are Nash equilibria. And, for a sufficiently low social sensitivity, $\xi < 1$, (D, D) remains the unique Nash equilibrium. Thus, a sufficiently strong preference for following the socially desired can transform the Prisoner's Dilemma into a situation where cooperation is individually rational – a line of argument which is often implicitly taken in models of social preferences but without referring to the context.

$\xi = 0$			$\xi = 3$			$\xi = 6$		
	C	D		C	D		C	D
C	9, 9	0, 10	C	**12, 12**	3, 10	C	**15, 15**	6, 10
D	10, 0	**4, 4**	D	10, 3	**4, 4**	D	10, 6	4, 4

Figure 2: Transforming the Prisoner's Dilemma when peers like cooperation; Nash equilibria are marked in bold.

Finally, assume that $\xi = 5$ but that there is some uncertainty as to whether the context is really social, in which case C is a strictly dominant action, or not, in which case D is strictly dominant. A straightforward calculation shows that already for $p_0 \leq 0.8$ both players playing C becomes a Nash equilibrium and, in expectation, a very efficient one too.

Solving Coordination Problems

As a second illustration, consider a case where the uncertainty is not about whether the context is social or not – we assume this is certain, i.e. $p_0 = 0$ – but about whether the context is $\mathbb{S}^1$ or $\mathbb{S}^2$, where the socially desired behavior differs between contexts. More specifically, consider the simple coordination game depicted in Figure 3 and assume that, depending on the social context, either A or B is the socially desired action.

As should be clear from the preceding discussion, if society has agreed on a certain desired behavior for certain contexts, an individual desire to conform to such agreements will solve the coordination problem, provided the type of context is sufficiently clear. However, even if there is some uncertainty about the type of context, e.g. because it is uncommon (as an economic Lab), coordination may still fail.

$\theta = \mathbb{E}$			$\xi = 2, \mathbb{S} = \{A\}$			$\xi = 2, \mathbb{S} = \{B\}$		
	A	B		A	B		A	B
A	**1, 1**	0, 0	A	**3, 3**	2, 0	A	1, 1	0, 2
B	0, 0	**1, 1**	B	0, 2	1, 1	B	2, 0	**3, 3**

Figure 3: Solving a coordination problem; $\xi = 2$; Nash equilibria are marked in bold.

Why Having Yet Another Approach?

Finally, we want to conclude the formal section with a brief discussion of what we think are the benefits of the present framework. We see at least two.

First of all, the present approach clearly distinguishes between the game being played – the players payoffs – and the context in which this game is being played – with whom as players, possible observers etc. The advantage we see in this is that it allows to account for and study the incentives schemes provided by a strategic situation in itself (e.g. by observing behavior in that game across different social contexts) in isolation from effects of the context (e.g. by studying behavior in different games in equal types of context). To exemplify this point, according to the evidence, offers in dictator games decrease with anonymity of the context (see, for example, Camerer 2003).

Related to this, the second advantage we see in the present approach is that it allows to (empirically) study individual effects more systematically. In particular, it now is – in principle – possible to try and establish different determinant of ξ both for a given type of context and across contexts. Some aspects we focus on in the sequel are, for example, gender and the desire to be liked by others.

Thus, while admittedly rather simplistic, we believe that the present approach offers a way to study and structure the variety of effects found in the empirical literature in a rather neat way.

3   Empirical Analysis

In this section, we present two types of empirical evidence regarding social approval seeking and its consequences. First, results from an online survey (Section 3.1), and secondly from a classroom experiment with a randomized control group (Section 3.2). The aim is to show that social approval seeking is a factor that matters for economic outcomes and also to tentatively explore how individual level characteristics relate to the desire to be liked by others (and thus matter for ξ_i in the above model).

3.1 The Survey

In an anonymous internet based survey, respondents were asked about personal characteristics and also about their desire to be liked by others. Then, respondents were asked to rate behavior in different hypothetical contexts on a scale from 1 (not at all commendable) to 7 (highly commendable). Correlations between responses and personal characteristics, which were elicited first, are reported below. The exact descriptions of the contexts is given in Appendix A. The questionnaire was conducted online via Swedish website and was open the first three month 2013; 630 people took part in the survey.

The Desire to be Liked by Others

The desire to be liked by others was measured using answers to the categorical response question "How important is it for you to be liked by others?" By a large margin, the most common answer to this question was "Important", but about 25 percent of the respondents picked the strongest available answer "Very important". We consider these to be socially sensitive or approval seeking. Analyzing the tendency of respondents to be approval seeking reveals some interesting patterns. A linear regression model shows that gender and parents' education have a significant impact. In particular, women and people with better educated parents are more likely to indicate high importance to being liked by others; see Table 2 for details.

| | (1) |
Measure	Approval Seeking
Gender	.065**
	(.0321)
Parents' Education	.018*
	(.0092)
Constant	.070**
	(.0338)
Observations	587
R^2	.018

Table 2: Linear regression model explaining Approval Seeking (importance of being liked); robust standard errors in parentheses. *** $p < .01$, ** $p < .05$, * $p < .10$

We next report results from two scenarios designed to examine the economic consequences of social approval seeking.

VARIABLES	equality	equality
Age	0.00507***	0.00515***
	(0.00153)	(0.00163)
Education	0.0413**	0.0397*
	(0.0204)	(0.0212)
Being liked very important	-0.136*	-0.157**
	(0.0723)	(0.0756)
Religion important		-0.0127
		(0.0801)
Rightwing		-0.00142
		(0.0182)
Female		0.0318
		(0.0521)
Constant	0.288**	0.301**
	(0.111)	(0.152)
Observations	375	347
R-squared	0.052	0.058

Table 3: Linear regression model, explaining preference for equal division (B) over generosity (A); robust standard errors in parentheses. *** for $p < .01$, ** for $p < .05$ and * for $p < .10$.

Scenario 1: Generosity vs Sharing Equally vs. Social Insurance

The first scenario presented describes a situation where two homeless beggars are each given a lottery ticket by an unrelated person. The behaviors to be rated were:

- Assuming that only one wins (20.000$), giving away everything to the other beggar.

- Assuming that only one wins (20.000$), sharing equally.

- To propose directly to share any winnings equally.

Thus, the question was how to deal with a windfall gain that presumably means equally much to both people involved.

As it turns out, 62 percent tend to find B (giving away half) to be the more commendable than A (giving away everything). Only 5 percent preferred A to B, and 15 percent found C (the ex-ante agreement) to the the most commendable behavior. Running a linear probability model to explain the preference for B over A, ie. favoring equal division rather than pure altruism, gives the following results:

Both older and more highly educated respondents are more likely to find sharing equally more commendable than giving away everything. More interestingly, people who are socially sensitive are roughly 15 percent less likely to do so - and the effect is actually slightly stronger when controlling for sex, political ideology and religiosity.

9

VARIABLES	agreement	agreement
Age	0.000975	0.00154
	(0.00119)	(0.00135)
Education	-0.00859	-0.0124
	(0.0176)	(0.0182)
Being liked very important	-0.0834*	-0.0719
	(0.0438)	(0.0468)
Religion important		-0.0339
		(0.0612)
Rightwing		0.0109
		(0.0151)
Female		-0.0958**
		(0.0389)
Constant	0.173**	0.215*
	(0.0839)	(0.118)
Observations	375	347
R-squared	0.010	0.032

Table 4: Linear regression model explaining the preference for the sharing agreement; robust standard errors in parentheses. *** for $p < .01$, ** for $p < .05$ and * for $p < .10$.

Explaining the preference for C over A and B reveals only one significant variable: Women are significantly less likely to commend the proposition of a sharing agreement.

Scenario 2: Donating vs Investing
The second scenario describes a situation where a person unexpectedly inherits a large amount of money. The behavior to be rated were:

- Giving half the sum to a fruit farmer in Zambia enabling him/her to hire 10 workers.

- Investing half the sum in a fruit farm in Zambia which, thanks to that, can hire 10 workers, and making a good return on the investment and retire.

As it turns out, 41 percent of respondents found the donation more commendable and 16 percent preferred the investment. As shown below, there are two significant predictors of finding the investment more commendable: identifying oneself as politically right-wing, and being socially sensitive.

In all, the survey evidence suggests that some people attach a higher importance to being liked by others, and also that socially sensitive seem to differ somewhat in their views on what is the commendable behavior in reasonably complex economic

VARIABLES	Investment	Investment
Education	-0.00850	-0.00383
	(0.0157)	(0.0156)
Age	0.00248*	0.00206
	(0.00138)	(0.00137)
Female	-0.0149	-0.0101
	(0.0385)	(0.0380)
Rightwing	0.0854***	0.0845***
	(0.0156)	(0.0153)
Religious	-0.0558	-0.0415
	(0.0575)	(0.0560)
Being liked very imp.		-0.155***
		(0.0351)
Constant	-0.0688	-0.0612
	(0.107)	(0.106)
Observations	327	327
R-squared	0.109	0.134

Table 5: Linear regression model explaining the preference for investment over donation; robust standard errors in parentheses. *** for $p < .01$, ** for $p < .05$ and * for $p < .10$.

situations. Because survey evidence inform us about stated preferences rather than actual behavior, we have also conducted a class room experiment, described in the next section.

3.2 The Classroom Experiment

In addition to the online survey, we also conducted a classroom experiment – pen and paper – confronting subjects with actual decision situations.

3.2.1 Design and Procedures

Design

The experiment consisted of a brief introductory questionnaire asking subjects about some personal characteristics. After that subjects had to (simultaneously) decide on their behavior in the four 2-by-2 games shown in Figures 4 and 5: the Prisoner's Dilemma and an asymmetric coordination game as well as versions of both games with identical payoffs but reversed labels.

	A	B
A	100, 100	0, 140
B	140, 0	40, 40

	A	B
A	40, 40	140, 0
B	0, 140	100, 100

Figure 4: The Prisoner's Dilemmas.

	A	B
A	200, 200	0, 0
B	0, 0	100, 100

	A	B
A	100, 100	0, 0
B	0, 0	200, 200

Figure 5: The coordination games.

Before the questionnaire was handed out, all subjects were told that, once the questionnaire was finished, they would have to indicate how they would behave in four 2-by-2 games in all of which they could choose between A and B. In the treatment group, a weak social norm was created by having the participants vote on a a collective non-binding recommendation for choosing A or B, described as "potentially simplifying later decision making" but not enforced or verified in any way.

Procedures

The (classroom) experiment was conducted at the end of a lecture of a first year micro course at Lund University on September 24 2013. After half of the lecture, students were invited to take part in an decision experiment in which they could earn

money. In all, 206 students participated in the experiment. Once those students who preferred to leave had done so (very few chose to leave), the participants were divided into two groups: a control group (41 subjects) and a treatment group (165 subjects) and were taken to different rooms. They were told that 20 out of all subjects would be randomly chosen to be matched with someone from their group and would be payed 1:1 for all games according to their behavior.

Subjects in both groups were first asked to fill in a brief questionnaire; in the treatment group, part of the questionnaire was to vote for either A or B as a general but non-binding recommendation for behavior. Once the everything was filled in (including votes), questionnaires were collected and subjects and were presented with the four games described above. Subjects in the treatment group were publicly informed about the result of the vote before that. Once everyone had made their four decisions, answer sheets were collected and the subjects to be payed were chosen by a public random draw and privately payed after the experiment. The experiment lasted 45 minutes, and the average earnings of a subject selected to be payed were 60 US dollar (450 SEK).

3.2.2 Results

We focus on the interesting cases when the action recommended by the norm created by the referendum conflict with efficiency in the cooperation and the coordination game. The table below shows the tendency to choose defect in the PD-game when the referendum recommended defection. The first column shows that the norm increased defections by almost 9 percent. Among the socially sensitive, defections were 27 percent higher in the treatment group. These effects are not significant at traditional levels, but when controlling for gender (column 3) or running only on females (column 4) the effect of the norm is significant. The tendency is the same in the coordination game, but because 90 percent followed efficiency, there are no significant effects in our sample.

It bears emphasizing that the norm created by the voting procedure makes no sense: When they vote either 'A' or 'B', participants do not know anything about the decisions they are facing. Still the reform increases defection substantially among female participants and among socially sensitive. Because female participants are more likely to be socially sensitive, we cannot separate the effect of be socially sensitive from the effect of being female in the class room experiments. It should be noted however, that both gender and social sensitivity matters in the survey evidence as well.

VARIABLES	1	2	3	4
Treatment	0.0868	0.268	0.292*	0.267*
	(0.0835)	(0.162)	(0.166)	(0.135)
Female			-0.160	
			(0.145)	
Constant	0.571***	0.455***	0.527***	0.400***
	(0.0742)	(0.142)	(0.157)	(0.124)
Observations	All	Sensitive	Sensitive	Female
R-squared	0.005	0.057	0.080	0.041

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Figure 6: Propensity to defect in Prisoner's Dilemma when "the norm" suggests to defect. Robust standard errors in parentheses. *** for $p < .01$, ** for $p < .05$ and * for $p < .10$.

4 Concluding Remarks

[to be added]

Appendix A

Below, we state the descriptions of the two situations used in the survey to elicit subjects' judgements regarding commendable behavior.

> 1A. Anders and Bengt are two homeless beggars. A by-passer gives them one lottery ticket each. Anders wins 20 000 dollar, Bengt wins nothing. *Anders gives his entire winnings to Bengt.*
>
> vs.
>
> 1B. [...] *Anders gives 10 000 to Bengt.*
>
> vs.
>
> 1C. [...] one lottery ticket each. *Anders suggests that they split any winnings equally, regardless of who wins.*

> 3A. Anna unexpectedly inherits a large sum of money. She gives half the sum away to a fruit farmer in Zambia. As a result, the fruit farmer can hire 10 workers.
>
> vs.
>
> 3B. [...] She *invests* half the sum in a fruit farm in Zambia. As a result, the fruit farmer can hire 10 workers, *Anna makes a good return on her investment and retires.*

References

Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm glow giving. *Economic Journal*, 100(401):464–477.

Anthony, D. B., Wood, J. V., and Holmes, J. G. (2007). Testing socio meter theory: Self-esteem and the importance of acceptance for social decision making. *Journal of Experimental Social Psychology*, 43(3):425–432.

Battigalli, P. and Dufwenberg, M. (2007). Guilt in games. *American Economic Review* 97: 170-176.

Bolton, G. E., Brandts, J., Katok, E., Ockenfels, A., and Zwick, R. (2008). Testing theories of other-regarding behavior: A sequence of four laboratory studies. In Charles, R. P. and Vernon, L. S., editors, *Handbook of Experimental Economics Results*. Elsevier.

Bowles, S. and Gintis, H. (2011). *A cooperative species*. Princeton University Press.

Charness, G. and Dufwenberg, M. (2006). Promises and partnership. *Econometrica* 74: 1579-1601.

Cooley, C. H. (1902). Human nature and the social order. Scribner.

Falk, A. and Fischbacher, U. (2006). A theory of reciprocity. *Games and Economic Behavior*, 54(2):293–315.

Fehr, E. and Schmidt, K. M. (1999). A theory of fairness, competition and cooperation. *Quarterly Journal of Economics*, 114: 817-868..

Gintis, H., Bowles, S., Boyd, R., and Fehr, E. (2005). *Moral Sentiments and Material Interests: On the Foundations of Cooperation in Economic Life*. MIT Press.

Hoffman, E., McCabe, K., Shachat, K., and Smith, V. (1994). Preferences, property rights, and anonymity in bargaining games. *Games and Economic Behavior*, 7(3):346–380.

Holländer, A. (1990). A social exchange approach to voluntary cooperation. *The American Economic Review*, 80(5):1157–1167.

James, W. (1890). *Principles of psychology*. Dover, Oxford, England.

Leary, M. R. (2003). Interpersonal Aspects of Optimal Self-Esteem and the Authentic Self. *Psychological Inquiry*, 14(1):52–54.

Leary, M. R., Tambor, E. S., Terdal, S. K., and Downs, D. L. (1995). Selfesteem as an interpersonal monitor: The sociometer hypothesis. *Journal of Personality and Social Psychology*, 68(3):518–530.

Masclet, D., Noussair, C., Tucker, S., and Villeval, M.-C. (2003). Monetary and non-monetary punishment in the voluntary contributions mechanism. *The American Economic Review*, 93(1):366–380.

Miller, G. (2000). Rational choice and dysfunctional institutions. *Governance*, 13(4):535–547.

Ostrom, E. (2005). *Understanding Institutional Diversity.* Princeton University Press, Princeton.

Rabin, M. (1993). Incorporating fairness into game theory and economics. *The American Economic Review*, 83:1281–1302.

Sethi, R. and Somanathan, E. (2006). A simple model of collective action. *Economic Development and Cultural Change*, 54(3):725–747.

Srivastava, S. and Beer, J. S. (2005). How self-evaluations relate to being liked by others: integrating sociometer and attachment perspectives. *Journal of Personality and Social Psychology*, 89(6):966–977.

Tabellini, G. (2008). The scope of cooperation: Values and incentives. *The Quarterly Journal of Economics*, 123(3):905–905.

Wichardt, P. C., Schunk, D. and Schmitz, P. (2009). Participation costs for responders can reduce rejection rates in ultimatum bargaining. *Economics Letters* 103: 33-35.

Wichardt, P. C. (2011). Identity, Utility, and Cooperative Behaviour: An Evolutionary Perspective. *Scandinavian Journal of Economics*, 113(2):418–443.