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Economics and Psychology

A Promising New Cross-Disciplinary Field

edited by

Bruno S. Frey and Alois Stutzer

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3

A Survey of Economic Theories and Field Evidence on Pro-Social Behavior

Stephan Meier

3.1 Introduction

Standard economic theory predicts that public goods are often underprovided because individuals will free ride on the contributions of others since they cannot be excluded from using the public good. An enormous number of decision situations can be characterized as public good problems. For example, people free ride on the efforts of others to protect the environment; no consumer puts effort into fighting for reduced tariff rates because everyone profits from the resulting lower prices; people let others organize community events; no one donates blood because, if needed, he or she will receive blood anyway; people do not enforce social norms (e.g., not to litter in a public park) because they think that others should do it; and so on. All these individual calculations result in suboptimal outcomes: too little environmental protection, no reduction in tariff rates, no community events, too few blood donors, and nobody who enforces social norms. In general, people will not contribute a sufficient amount of money or time to provide the socially optimal amount of public goods.

In reality, people free ride less often than is predicted by standard economic theory. People behave in a number of situations not according to narrow self-interest, but rather pro-socially: for instance, most people actually pay their taxes, a fact that cannot be explained by relying on strict self-interest axioms (e.g., Andreoni, Erard, and Feinstein 1998). Due to the low probability of having the decisive vote, the expected utility of voting is close to zero and standard economic theory predicts that few people will show up at the ballot boxes; yet individuals do vote (e.g., Mueller 2003). In the political process, voters express their preferences for income redistribution in a way that goes beyond financial self-interest (e.g., Shabman and Stephenson 1994).

Under certain circumstances people are able to prevent the overuse of a common-pool resource (Ostrom 1990). And a large part of open source software production is difficult to explain by relying on strict self-interested behavior (see Osterloh, Rota, and Kuster 2003).

According to standard economic theory, people should take advantage of any opportunity to exploit society or another individual—but they do not. In various situations in the political sphere, in firms, or in the family, people are “rent leavers,” meaning that they “do not invest in something that is unproductive for others but that would increase their own income” (Bohnet and Frey 1997, 711). Individuals therefore contribute substantial amounts of money and time to public goods.¹ The self-interest hypothesis has also been rejected in a large number of laboratory experiments (see Ledyard 1995; Camerer 2003). A recent study of experimental ultimatum games in 15 small-scale societies around the world reveals that “the canonical model of the self-interested material pay-off maximizing actor is systematically violated” (Henrich et al. 2001, 77).

As a result of these findings, economists have turned to psychologists, who have studied pro-social behavior for quite a long time. Consequently, a large number of economic theories have evolved to explain people’s pro-social behavior and the variation in their respective behavior. This paper surveys economic theories of pro-social behavior. In each subsection, one specific theory is investigated and predictions for behavior are derived. The hypotheses are then confronted with existing empirical evidence. The empirical findings presented are mainly based on field and survey evidence rather than on laboratory experiments, but laboratory studies are also referred to where appropriate. Fehr and Schmidt (2003), Camerer (2003), and Konow (2003) offer other good surveys of theories of fairness and reciprocity with a focus on experiments as sources of evidence.

Contributions to public goods may be explained by relying on extended versions of the self-interest model. People may contribute to a public good if it is a precondition of receiving a private good (Olson 1965). Automobile lobby groups like the AAA, for example, provide breakdown services, insurance, and reductions in hotel prices to their members. Donors to arts organizations may gain access to special events, gala dinners, or choice seats in the opera house they support; they may even have exhibition halls named after them. In addition to the fringe benefits, volunteers may receive job experience and a social network. Or donations may be driven by a desire to signal wealth in

order to increase one’s prestige (Glazer and Konrad 1996; Harbaugh 1998). Despite the fact that prestige is not a material good, the important aspect of the “prestige motive” is that people instrumentally behave pro-socially to get an external reward. But theories based on extended self-interest cannot explain the full range of pro-social behavior. Even in anonymous situations and in last rounds of interaction where no material fringe benefit can be expected, people often behave pro-socially. Although some economists are reluctant to accept that the self-interest hypothesis has its limits, the bulk of empirical evidence on pro-social behavior requires that theories explaining human behavior go beyond self-interest.

The survey proceeds as follows: section 3.2 presents the three most important sets of theories on nonselfish or “other-regarding” behavior: outcome-based pro-social preference models, theories based on the norm of reciprocity, and approaches focusing on the relevance of self-identity. Section 3.3 focuses on the importance of the institutional environment in explaining variations in pro-social behavior. Section 3.4 presents evidence for the effect of relative prices on pro-social behavior. Section 3.5 discusses the heterogeneity of individuals with respect to pro-social behavior and the importance of such differences for an economic analysis of pro-social behavior. In section 3.6, the relationship between utility and pro-social behavior is discussed. Section 3.7 draws conclusions for policy and formulates remaining open questions.

3.2 Theories beyond Self-Interest

Adam Smith, who praised the selfishness of individuals in *The Wealth of Nations*, did not believe that only selfish motives matter for human beings. In his first book, *The Theory of Moral Sentiments*, Smith wrote: “How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it” (1759, 3). In recent years, various models have been developed in order to map out *how* man is interested in the fortune of others and whether these motives can systematically explain pro-social behavior. Three groups of prominent models can be broadly distinguished: (1) outcome-based *pro-social preference* theories assume that an individual’s utility depends directly on the utility of other people; (2) theories of *reciprocity* are based on the

contributions by public grants. Government spending has been found to crowd out private contributions, but the crowding-out is far from complete (dollar-for-dollar); it lies in the range of zero to one-half (see Andreoni 2006 for an excellent survey).²

3.2.1.2 Impure altruism Because pure altruism theories do not make empirically accurate predictions with respect to crowding-out effects, Andreoni (1990) extends the altruism model with a "warm glow" motive for giving. People care not only about the recipient's utility but receive some private goods benefit from their pro-social behavior per se. In comparison with the private goods benefit (e.g., prestige), the warm glow is purely internal, derived from the donor's own knowledge of his pro-social behavior. Psychologically, various underlying motivations may cause the ultimately egoistic warm glow, such as self-reward, negative state relief, or guilt reduction (for a survey, see Bierhoff 2002). In the case of volunteering, self-determination and increased self-esteem may be intrinsically rewarding motives. In models of impure altruism, crowding-out is never perfect because donors still receive a benefit from the donation per se. The prediction of the impure altruism model better fits the observation that givers do not see public grants as perfect substitutes for private contributions.³ Nevertheless, the model of warm-glow giving still predicts that people will partly reduce their own contributions when other agents or the government increases their share to the public good.

Theories of both pure and impure altruism also assume stable interdependent preferences. According to these theories, people will therefore exhibit stable behavior. However, this prediction is at odds with at least two empirical observations. First, pro-social behavior erodes with repetition in most experimental studies (e.g., Dawes and Thaler 1988). Altruism theories are not able to explain the decay of pro-social behavior. Second, people do not always behave pro-socially to increase the well-being of others. Sometimes they consciously reduce others' utility by punishing their behavior, which is inconsistent with altruistic preferences (Fehr and Gächter 2000a). To cope with these behavioral irregularities, models of inequality aversion focus on the relative well-being rather than absolute utility levels.

3.2.1.3 Inequality aversion Models of inequality aversion assume that one's relative standing in the income distribution is important. According to the model of Fehr and Schmidt (1999), people do not like

notion that individuals behave in a friendly manner when they are treated benevolently, and, conversely, they act meanly when treated badly; and (3) a third group of approaches stresses the importance of *self-identity* for pro-social behavior.

3.2.1 Outcome-Based Pro-Social Preferences

Theories of pro-social preferences are based on the notion that people care about the well-being of others. In the three most prominent formulations of pro-social preferences, the utility of others can either (1) influence one's utility directly (pure altruism theories), (2) influence one's utility partly because helping others produces a "warm glow" (impure altruism theories), or (3) have an effect on one's utility that depends on the difference between one's own and another's well-being (theories of inequality aversion).

3.2.1.1 Pure altruism Altruism theories assume that others' consumption or utility positively affects an individual's own utility (e.g., Becker 1974). People thus behave pro-socially or contribute to a public good because they enjoy the well-being of others. Altruistic preferences are used to explain a wide range of pro-social behavior: donations (Smith, Kehoe, and Cremer 1995), volunteering (Unger 1991), behavior in the workplace (Rotemberg 1994), and contributions in laboratory experiments like dictator games (Eckel and Grossman 1996; Andreoni and Miller 2002).

Altruism theories assume that individuals enjoy seeing the well-being of others increase independently of the source of the improvement. This leads to the hypothesis that people will contribute positive amounts to public goods but their contributions are inversely related to the contributions of others. If other private individuals contribute to the public good, or the state contributes, then people will reduce their contribution to the same extent (e.g., Roberts 1984).

Altruism theories' prediction that contributions by others will completely crowd out an individual's own contribution has been criticized on the basis of both theoretical considerations and empirical facts. From a theoretical point of view, for example, it can be argued that in large groups, no altruist would contribute to a public good since he or she could free ride on the contributions of others (Sugden 1982; Andreoni 1988; Croson 1998). But in reality, people donate to large charities like the Red Cross or Amnesty International. In empirical research, it is difficult to support the one-to-one crowding-out of private

inequality.⁴ Inequality is particularly disturbing when a subject's payoff is smaller than that of other subjects. Such models attempt to explain why, on the one hand, people behave altruistically toward others worse off than they are, while on the other hand they punish those who are better off than they are.⁵ A number of studies in experimental economics have investigated this phenomenon and found that people's behavior in various situations can indeed be explained by inequality aversion (Fehr and Schmidt 1999). However, people are also driven by other motives than inequality reduction. Charness and Rabin (2002), for example, let subjects in a number of simple games choose between an equal payoff (e.g., 400 and 400) and an unequal but often more efficient payoff (750 for the recipient and 400 for the dictator). The authors find "a strong degree of respect for social efficiency, tempered by concern for those well off" (849); in other words, the more unequal but socially efficient outcome is often chosen. Whether people are more concerned with social welfare than with inequality has to be investigated further, possibly using a broader set of games than simple dictator games. Other studies argue that inequality aversion is inadequate to explain a whole range of pro-social behavior (Engelmann and Strobel 2004).

The next set of models extends these outcome-based models by capturing the importance of intentions.

3.2.2 Reciprocity and Conditional Cooperation

The aforementioned theories of pro-social preferences assume that people value only the distributional consequences of their own and others' behavior. In theories of reciprocity, people are also concerned about the intentions leading other people to their choices. We talk of reciprocity when individuals act in a more pro-social manner in response to the friendly behavior of others, and in a hostile way in response to unfriendly behavior (Rabin 1993; Falk and Fischbacher 2006; Dufwenberg and Kirchsteiger 2004). The reciprocity model has recently gained much attention. It has been claimed that "[p]ractically all life in society includes and implies reciprocities, and reciprocity has been seen as the basic glue that makes people constitute groups or societies" (Kolm 2000, 115). A substantial number of studies in experimental economics (e.g., Fehr and Gächter 2000b) supplement the evidence, provided by other social sciences, indicating that reciprocity is an important factor in pro-social behavior. In public good games, the option for reciprocally punishing free riders sustains high contribution rates even with

repetition (Fehr and Gächter 2000a). This is not trivial, as contributions in public good games normally converge to full free riding over time. Individuals do indeed undertake the costly punishment of free riders. The more a subject's contribution is below the average of group contributions, the more heavily he or she is punished.

There is also evidence for reciprocity and its influence on pro-social behavior outside the laboratory. Fong (2001) interprets survey data about support for redistribution as evidence of reciprocity's importance. People who believe that the needy are those who have been beset by unfortunate external circumstances are more in favor of redistribution. In contrast, people who believe that the poor are not doing their share to escape poverty are more likely to be against redistribution (see also Bowles, Fong, and Gintis 2006). This reflects the view that if the poor don't give, or try to give, their share to society, they should not receive aid. However, it is also possible that people who are generally selfish will legitimize their behavior by assuming that welfare recipients are able but unwilling to help themselves. In a second study, Fong (2003) addresses this caveat by randomly matching welfare recipients reporting different work morals to potential donors. The results show that people who indicate in a pre-experiment survey that helping the poor is important are especially sensitive to the laziness of welfare recipients. On the one hand, they give large amounts to people who have a high work ethic, while on the other hand they reduce their share substantially when confronted with a lazy person. People who do not indicate in the pre-experiment survey that helping the poor is important are significantly less sensitive to a recipient's laziness.

The principle of reciprocity seems to be important in various fields, from merchandising to political "logrolling" (a number of examples can be found in Cialdini 1993), tax compliance (Smith 1992), tipping in restaurants (Seligman et al. 1985; Conlin, Lynn, and O'Donoghue 2003), and effort in the workplace (e.g., Akerlof 1982; Frey 1993; Fehr, Gächter, and Kirchsteiger 1997). To test the effects of reciprocal norms in charitable giving, Falk (2004) conducted a large-scale field experiment where potential donors were given either no gift, a small gift, or a large gift in the solicitation letter. The relative frequency of donations increases by 75 percent among those receiving a large gift as compared to the no gift treatment. If a person receives a gift from a potential aid recipient, the norm of reciprocity seems to require a donation. For interactions between donors and recipients, the principle of reciprocity

thus seems to play a substantial role. For the norm of reciprocity, it may be a question not only of the relationship between the donor and a single recipient, but also whether reciprocity affects social interactions *between* donors.

One implication of reciprocity theories is that people react positively to the behavior of others. When a group of people has to decide whether to contribute to a public good, individuals will judge the behavior of others as kind or not, and adjust their behavior accordingly. If individuals observe that others behave pro-socially, they will do so as well. No one likes being the only one who contributes to a good cause, and no one likes being the victim of others' free riding. The most distinctive prediction from such a theory is that individual i 's probability of contributing to a public good *increases* when the percentage of individuals j ($j = 1, \dots, n; j \neq i$) who contribute increases within a given group. The prediction stands in contrast to the prediction made by altruism theories, where a negative relationship is expected between an individual's own behavior and the contributions of others in his group.

The idea of conditionality in theories of reciprocity is crucial. Individuals are defined as conditional cooperators when the positive correlation discussed above applies (a survey by Gächter on conditional cooperation is chapter 2 of this book). Evidence in favor of conditional cooperation can show that expectations about the behavior of others positively correlate with one's own behavior. For example, there is a large literature showing that people's (self-reported) tax compliance correlates with their estimate of other people's noncompliance (e.g., Frey and Torgler 2004). However, this kind of evidence does not reveal the direction of causality. It may be the case that expectations do not trigger behavior, but rather that behavior influences expectations. Such a "false consensus" effect (Dawes, McTavish, and Shaklee 1977; Ross, Greene, and House 1977; Marks and Miller 1987) can occur because one projects one's own behavior onto others, or because behavior needs to be justified.

In a laboratory experiment, which allows one to vary the group's average behavior at random, Fischbacher, Gächter, and Fehr (2001) solved the causality problem by using the strategy method. Subjects in their laboratory public good game have to decide how much to give to a public account based on the contributions of others. The study concludes that roughly 50 percent of subjects increase their contribution if the others do so as well. In contrast to most studies about conditional

cooperation, which are based on laboratory experiments, Andreoni and Scholz (1998) provide a non-laboratory study, finding that one's own donation depends on the donations of one's reference group. The results show that if the contributions of those in one's social reference group increase by an average of 10 percent, the expected rise in one's own contribution is about 2 to 3 percent. However, because the reference group in this study is constructed on socioeconomic characteristics, it does not provide a direct test of how people react to the behavior of others.

Frey and Meier (2004) found supporting evidence of conditional cooperation in a field experiment. Students at the University of Zurich are asked each semester whether they want to contribute to two social funds. In the field experiment, students are randomly informed either that many other students contribute (64 percent of the student population) to the two funds or that few other students contribute (46 percent). As this information is either based on the average over the last ten years (the lower contribution rate) or on the behavior in the previous semester (the high contribution rate), no deception was involved. The analysis shows that people increase their pro-social behavior if faced with many other students who do the same.⁶

In an interesting field experiment on tax compliance, Wenzel (2001) first asked taxpayers about their own tax compliance and about others' norms and behavior with regard to paying taxes. Then in the field experiment, he informed a subgroup of these taxpayers about their misperception of others' behavior. Taxpayers actually wrongly think that most others act less honestly than they themselves do. When people are informed in the experiment that others are more honest than they expected them to be, they subsequently significantly reduced their claims for tax reductions (in their actual behavior) compared to the control group. This result can be interpreted as evidence that people behave conditionally based on what others do.⁷ Heldt (2005) presents evidence in support of conditional cooperation in the field. In an innovative study, he found that cross-country skiers are more likely to contribute to the maintenance of the slopes if confronted with the knowledge that many other skiers do. Shang and Croson (2005) show in a field experiment that people increase their financial contribution in a National Public Radio campaign when informed about a high contribution from the previous donor.⁸ A positive correlation has also been found in a situation where money is collected in a community using a list of others in the neighborhood who had already donated.

The longer the list, the higher the willingness to contribute (Reingen 1982).

These studies do not necessarily show that the perceived good intentions of other people caused individuals' pro-social behavior. Reciprocity models, however, explicitly assume this. Recent laboratory studies have therefore analyzed the effect of intentions *per se*. The evidence supports the notion that intentions matter. For example, Blount (1995) reports that subjects in an ultimatum game accept lower offers when the offer is generated by a random mechanism than when it is chosen deliberately by another party. Various other studies support the finding that the process and particularly the intentions behind another party's actions are crucial for reciprocity (see Charness and Levine 2003 and the references therein). How those intentions are perceived often depends on the particular situation. Bohnet and Meier (2005) show that framing effects in a trust game changes the perception of the other parties' intentions. As a result reciprocal behavior changes dramatically. In summary, there are a number of studies supporting the influence of reciprocity, and therefore intentions, on pro-social behavior in the lab and in the field.

3.2.3 Self-Identity

Recently, economists recognized the importance of self-identity for human behavior (Akerlof and Kranton 2000). People do not only care about their reputation with others, but also want to have a good self-image. They therefore undertake certain activities—pro-social activities—in order to self-signal their good traits.

Bodner and Prelec (2003) and Bénabou and Tirole (2004) present two recent models in which self-identity is a crucial element in explaining pro-social behavior. The important difference to outcome-based models is that people do not necessarily care about the outcome of a pro-social behavior *per se*, but their behavior affects their self-identity. Whether pro-social behavior actually produces a good self-image thus depends on at least two factors: first, what is considered to be "good," and second, in what circumstances a pro-social action is a valuable signal of one's good traits.

The social norm defines what constitutes a good action. Managing self-identity therefore often means conforming to the social norm in one's reference group (e.g., Bernheim 1994). The results discussed previously, which found that people contribute to a public good based on other people's behavior, are therefore consistent with a theory based

on self-identity. In order to fully understand why people behave pro-socially in one but not the other situation, models of pro-social behavior need to incorporate people's expectations of what is perceived to be appropriate.

The context in which a decision is made crucially influences whether a pro-social activity is a needed and/or valuable signal in preserving one's self-identity. As will be discussed later in more detail, a financial incentive to behave pro-socially might, for example, make the signal less valuable. The pro-social action might not be attributed solely to good traits, but might be influenced by extrinsic motivation. As a result, the level of pro-social behavior might be lower than without a financial incentive (Bénabou and Tirole 2004). The context might also allow people to behave selfishly without attributing it to a greedy trait. In such situations, people might be much more willing to behave selfishly. Murnighan, Oesch, and Pillutla (2001) find in a simple dictator game that the reduction of the potential options—to split from 0 to 10 in increments of 1, to two options, a selfish (10, 0) and the equal split (5, 5)—decreases the fair split significantly. Reducing the options allows subjects to construe the (unfairer) outcome as largely outside their control and thus preserve their self-identity (see also Dana, Weber, and Xi Kuang 2004; Dana, Cain, and Dawes 2005). As will be discussed in more detail in the following chapter, the institutional environment might therefore have a huge impact on people's pro-social behavior. The context could allow people to attribute the same decision either to a greedy or to an altruistic trait, and as a consequence affect their decision in the first place.

3.3 Institutional Environment

For pro-social behavior, the institutional environment in which people decide to contribute to public goods is crucial (e.g., Ostrom 2000; Sobel 2002, 146–149). The institutional environment, which constitutes the context in which people decide, can matter even though the decisions remain the same in terms of material payoffs. Such context-dependent pro-social behavior has been labeled "institutional framing" by Isaac, Mathieu, and Zajac (1991).

The institutional environment's influence on pro-social behavior can be twofold. On the one hand, the context calibrates the salience of motives like altruism and reciprocity. In a situation where a mechanism exists to punish free riders, the norm of reciprocity will be more

important than in the absence of this institutional feature. On the other hand, the institutional environment can trigger motives which go beyond altruism and reciprocity, as evidence presented by Bohnet and Frey (1999) and Frey and Bohnet (1995) suggests. In a dictator game they allow for one-way identification, meaning that the dictator sees the recipient but not vice versa. This institutional change increases the willingness to cooperate dramatically. Such a shift in behavior cannot be explained by reciprocity, because according to these theories identification should not change the behavior in the decision situation. Giving in dictator games may therefore not be caused solely by reciprocity (e.g., Hoffman, McCabe, and Smith 1996) or even altruism (e.g., Johnsson and Persson 2000).

The effect of contextual factors on pro-social behavior is supported in various experiments in which framing the same decision differently has a critical influence on decisions (e.g., Andreoni 1992; Cookson 2000). Because framing effects are significant, most experimentalists try to avoid using verbal cues in their decision settings. However, verbal framing is not the only contextual factor influencing human pro-social behavior. Real-life social contexts contain a variety of cues that shape individuals' beliefs about the appropriate set of rules. This is closely related to findings in ultimatum game experiments conducted in 15 small-scale societies: "[...] the preferences over economic choices [...] are shaped by the economic and social interactions of everyday life" (Henrich et al. 2001, 77). The institutional environment can have at least two distinctive effects, which I will now discuss.

The institutional environment changes the salience of a social norm Institutional settings as well as framing effects change the focus of what is considered fair behavior in a certain situation. The context helps to evaluate which set of values to use. Whether people share 10 dollars that they have received as a gift or, by contrast, that they have had to earn, influences the "generosity" of the donor considerably. In dictator games between students, an equal split of the total seems to be the norm. When the same amount of money has to be shared with a charity, the amount given is on average much larger (Eckel and Grossman 1996). According to Bohnet and Frey (1999), the contextual setting can influence the social distance and thereby vary the empathy between the actors. Charities have long recognized the importance of reducing social distance between donor and recipient. It is well known that people are more willing to help an identifiable victim (Schelling 1984;

Small and Loewenstein 2003), like a specific child in the Third World, than to support a project that tries to improve the overall situation of children in poor countries. More generally, contextual factors not only change the social distance between individuals, but also influence the salience of a social norm in contributing to a public good. It can be hypothesized that "the greater the extent to which a decision is taken in a social context, the more relevant manners become" (Bohnet and Frey 1999, 44).

The institutional environment varies the degree of (potential) social sanctions The context in which people decide to contribute to a public good affects the extent of social sanctions when the social norm is violated. Even in anonymous situations, people may follow the internalized social norm because they otherwise suffer from guilt, shame, or fear. According to Trivers (1971), internalized norms are a reaction to social sanctions in case of the violation of a norm. Even the suspicion that someone dislikes one's behavior can trigger compliance (Loewenstein 2000). But social sanction, for example, in the form of social approval or disapproval, is most important if each person's identity is revealed. In situations where anonymity is lifted, pro-social behavior is expected to be the most pronounced (Rege and Telle 2004). Soetevent (2005) examines the role of anonymity in a field experiment in Dutch churches. Either closed collection bags or open collection baskets were randomly used for the collection of offerings. The open baskets, where the neighbors on each side can identify the donor's contribution, increase contribution in the service's second offering by 10 percent. Interestingly, people started to give larger coins when open baskets were used.

To illustrate the importance of the institutional environment, three different phenomena will be discussed that substantially influence pro-social behavior: property rights, in-group effects, and communication.

Property rights The perception of what constitutes a fair allocation is shaped greatly by the way property rights are assigned (see Frey and Bohnet 1995). Imagine the following situation in two different environments: you submit an academic paper for a prize, as does your colleague. In one setting, the independent jury chooses your paper to receive a \$1,000 prize. In the other setting, the independent jury could not choose between your paper and your colleague's paper, but a lottery was used to determine that you will receive the cash prize. Would

you share the prize money with your colleague? You probably would only in the situation where you received the money by luck. The way of assigning the property right changes the principles of what is perceived as fair. Cherry, Frykblom, and Shogren (2002) investigated whether in a laboratory dictator game the allocation differed when earned wealth was divided compared to unearned wealth given by the experimenter. In the treatment where people received \$40 as a gift, only 15 percent offered nothing to the recipients. In sharp contrast, when people had to earn the \$40, which was to be divided by answering some questions, 70 percent of the subjects offered nothing to the other person. It seems that less generosity can be expected when people attribute the received property rights to a variable they can influence (e.g., effort). In contrast, when the assignment of a property is based on factors that cannot be influenced (e.g., luck), an equal sharing is perceived to be fairer (Hoffman and Spitzer 1985; Konow 2000). One should expect that the stronger the property rights that are assigned, the less likely individuals will be to share their wealth.

In-group effects The institutional environment may shape the formation and salience of groups. For example, whether individuals are faced with a decision to behave pro-socially in their own firm or in a super-market is critical to their decision (see, e.g., Carpenter, Burks, and Verhoogen 2003). There is some evidence suggesting that people tend to cooperate more with their in-group (e.g., other members of the same fraternity) than with individuals not part of their in-group (like members of other fraternities) (see, e.g., Kollock 1998). Even a minimal definition of groups (e.g., those who prefer Kandinsky over Klee) has been found sufficient to create a group identification that has a significant influence on the division of money in an experimental setting (Tajfel 1981). In-group effects can also be found outside the laboratory. The more equal and less fragmented a community is in terms of ethnicity and race, the greater is its willingness to participate in social organizations and activities (Alesina and La Ferrara 2000), and the greater is its acceptance of income redistribution (Luttmer 2001). One reason for the higher contribution rates in in-groups may be that, in a defined group, individuals have a biased perception about members of their own group and those of the out-group. In the case of redistribution, people may attribute a group member's poverty to external circumstances (such as bad luck), whereas a poor outcome for a non-group member tends to be attributed to poor personal characteristics. Goette, Huffman, and Meier (2006) use random assignment to real social groups

to isolate the effect of group membership. They found more cooperation and altruistic punishment within random assigned groups, but no hostility effects toward out-group members. The tendency to help in-group members may also be due to other reasons, like reciprocity, social pressure, or sociobiological motives.

Communication A number of studies have empirically shown that communication is important for cooperation in social dilemmas (for a meta-analysis, see Sally 1995), despite the fact that no enforceable agreements can be made and communication is therefore viewed as "cheap talk" (Farrel and Rabin 1996). Communication fulfills two important functions. First, people get to know the other people involved; after just a few minutes of talking, the subjects' expectation of others' cooperative behavior increases significantly in accuracy (Frank, Gilovich, and Regan 1993b). If people believe that the other group members will act pro-socially, their willingness to contribute increases (consistent with inequality aversion and conditional cooperation). Communication, however, has to be face-to-face to affect the judgment of others; when communication is only allowed via a computer, the effects on cooperation are smaller (Ostrom 2000). Second, communication provides an opportunity for subjects to ask other individuals what they will do. Most subjects in experiments where communication is allowed try to make agreements about mutual behavior (Frey and Bohnet 1995). Even though such agreements can never be enforced, people seldom violate them. People seem to feel obliged to stick to their promises because the inconsistency of breaking a promise has high psychic costs.⁹ "The Importance of Being Asked" can be demonstrated for the decision to volunteer (Freeman 1997), to donate money (Long 1976), to participate in political demonstrations (Opp 2001), and even for the rescue of Jews in World War II (Varese and Yaish 2000). The importance of being asked is due not only to selection (people who look like potential volunteers are asked). The request carries some social pressure with it, and therefore people are more likely to be persuaded by a personal request than by written requests. The closer the relationship to the requester, the higher the probability of contributions (Freeman 1997).

In this section, we demonstrated that the institutional environment affects pro-social behavior in various respects. There is, however, still insufficient understanding of how and when institutional factors influence pro-social behavior more or less strongly.

3.4 Monetary Incentives and Pro-Social Behavior

From an economic point of view, people's pro-social behavior should depend on the relative cost: the more expensive pro-social behavior is, the less it should be undertaken. This is a feature of all the models discussed in the previous sections. Relative prices and incentives can be understood as important factors in the institutional environment discussed earlier. In this section, the effects of monetary incentives on pro-social behavior are investigated in more detail.

When people react systematically to changes in the cost of pro-social behavior, this creates the opportunity to subsidize pro-social behavior in order to increase it. In the case of charitable giving, donors can either get a rebate on their donations or their donation can be matched. While the first mechanism is often implemented by the possibility of deducting charitable giving from taxable income, the second mechanism is often implemented by firms that match their employees' donations. Such monetary incentives to increase pro-social behavior can of course be implemented in all areas where pro-social behavior is involved: volunteering, littering, organizational citizenship behavior, and so on.

In what follows, two contradictory effects of monetary incentives on pro-social behavior are presented: (1) according to the ordinary *relative price effect*, pro-social behavior will increase when monetary incentives are provided; (2) in certain circumstances, monetary incentives may, however, decrease intrinsic motivation to undertake the pro-social behavior due to a *motivational crowding-out effect* (Frey 1997b). The net effect of monetary incentives on pro-social behavior may be positive or negative in such circumstances, depending on the magnitude of the two effects. Under specific conditions, the relative price effect can thus be reversed.

3.4.1 Relative Prices of Pro-Social Behavior

The importance of the relative price effect for pro-social behavior can be illustrated by the opposition of very wealthy U.S. citizens to a recent tax reform proposal. A group of rich citizens centered around Bill Gates, the founder of Microsoft, has been arguing against the introduction of a new tax law that would basically lower the tax burden for wealthy people (Gates and Collins 2002).

A substantive literature attempts to analyze whether the presumption that people react to the price of giving is founded on a solid empir-

ical basis (for a survey, see Andreoni 2004). Two results of this branch of research are worth mentioning.

First, estimated price elasticities support the hypothesis that the price of giving is important for pro-social behavior. The estimated elasticities vary from -0.4 to -3.0 , but most fall in a range from -1.0 to -1.3 (Andreoni 2004). Recent studies based on panel data find somewhat lower price elasticities in the range from -0.51 to -1.26 (e.g., Auten, Sieg, and Clotfelter 2002). This means, for example, that the elimination of tax deductibility for charitable contributions would increase the price of a unit of giving for a taxpayer, formerly faced with a marginal tax rate of 30 percent, from 0.7 to 1.0. Calculating the effect equivalently, charitable contributions would decrease between 15 and 36 percent.¹⁰ Matching people's donations, which is another way of changing the relative price of giving, also increases the willingness to behave pro-socially (Meier 2005a). Matching is even shown to be a more powerful subsidy mechanism than a rebate (Eckel and Grossman 2003, 2005). Laboratory studies show that another form of pro-social behavior, norm enforcement, also reacts to the changes in prices as if punishment was a normal good (Carpenter 2002; Putterman and Anderson 2006).

Second, substitutes and complements have to be taken into account when analyzing the relative price effect on pro-social behavior. Charitable contributions, for example, can be made in money (charitable giving) or in time (volunteering). If monetary giving and volunteer labor are complements, the above-mentioned tax deduction would also increase volunteering. If, however, people move away from volunteering when prices for cash contributions decrease, the benefits of such a decrease would be overestimated by ignoring the effect on volunteering. Contrary to standard economic theory, contributions of time and money are mostly found to be gross complements (Brown and Lankford 1992; Freeman 1997).¹¹ The effect of a price reduction on pro-social behavior is therefore understated by focusing solely on monetary giving.

3.4.2 Motivational Crowding Effect

The relative price effect, however, does not always hold. In certain situations, a motivational crowding-out effect can work against the relative price effect (Frey 1997b). This is of considerable importance for pro-social behavior. Incentives may undermine or even crowd out an intrinsic motivation to behave pro-socially (Bénabou and Tirole 2004).

The motivational crowding effect was known in psychology long before economists started to think seriously about the "hidden costs of reward" (Lepper and Greene 1978) or the "corruption effect" (Deci 1975). In an early insight, Titmuss's book *The Gift Relationship* (Titmuss 1970) argues that monetary incentives for blood donors will undermine their motivation and reduce the amount of blood donated overall. While Titmuss did not present any empirical evidence, a considerable amount of evidence has since been collected on the motivational crowding-out effect (for an extensive survey, see Frey and Jegen 2001). In psychology, the large number of experimental studies has led to several meta-analyses that in general support the finding that (external) incentives have detrimental effects on intrinsic motivation (e.g., Deci, Koestner, and Ryan 1999).¹² In economics, the few studies that explicitly test the crowding-out effect cover a wide range of activities involving prosocial behavior. This section limits discussion to the three cases of volunteering, civic duties, and trust relationships.

The introduction of monetary incentives has been found to reduce the work motivation of volunteers (Frey and Goette 1999; Gneezy and Rustichini 2000a). Frey and Goette show in an econometric study that, while the size of the offered financial reward raises the number of hours volunteered, the mere fact that financial compensation is provided significantly reduces the amount of volunteering. Volunteers receiving the median amount of monetary incentive work less than either people who receive a large reward or those who receive no reward at all, a result that supports the crowding-out effect and has, of course, important implications for policies regarding volunteer work. The evidence points especially to two important aspects of the crowding effect.

First, the introduction of (external) incentives dramatically shifts the perception of the decision situation. In a situation with extrinsic incentives, people seem to behave in an "exchange mode," where they make strategic considerations and start to calculate ("I'm not working for only \$5 per hour, am I?") (Gneezy 2003). In contrast, in a situation without external incentives, people seem rather to behave in a "moral mode" where pro-social behavior is rewarded internally, such as with a warm glow (Heyman and Ariely 2004).

Small amounts of extrinsic incentives in particular are expected to have large negative effects on observed pro-social behavior, because with large extrinsic incentives the relative price effect will dominate. This is supported in a field experiment by Gneezy and Rustichini

(2000a), who offered extrinsic incentives to children who voluntarily collected monetary donations. Small extrinsic incentives are found to reduce the motivation of volunteers significantly, while the effort increases when large incentives are offered. This effect can be observed with negative incentives (fines) as well as with positive incentives (rewards) (Gneezy 2003).

Other important crowding effects have been discovered for activities requiring intrinsic motivation in the form of civic duty. Frey and Oberholzer-Gee (1997) investigate motivational crowding out in the context of siting locally undesirable projects (so-called Not In My Backyard, or NIMBY, problems). Economic theory proposes a simple solution for such projects, which are often socially desirable but impose considerable costs on the immediate neighbors: a community that hosts the NIMBY project should be compensated by all the other communities, so that its net benefit becomes positive. Frey and Oberholzer-Gee analyzed the reaction of Swiss residents to such compensation for the acceptance of a nuclear waste depository. While more than 50 percent of the respondents agreed to host the depository without compensation, the offering of monetary incentives reduced the acceptance rate to 24 percent. The authors' favored explanation for this reduction is that the sense of civic virtue that accompanies accepting the noxious facility is crowded out by the offer of monetary compensation. A civic duty to behave pro-socially can be crowded out not only by explicit monetary incentives, but also by laws and rules. An important application of this notion is tax morale, where the crowding effect can have huge costs. Tax morale, or the motivation explaining the low rate of tax evasion in many countries, depends to a great extent on trust between the government and the citizens. A constitution that tries to discipline citizens can be perceived as distrusting and can therefore decrease civic virtue (see Frey 1997a for empirical evidence).

More generally, the introduction of monetary incentives can have considerable negative effects on trust-based pro-social behavior. In a laboratory experiment with CEOs, Fehr and List (2004) found that detrimental effects follow from external incentives. If the first player uses an external incentive in a trust game, the second player returns less money. However, the highest efficiency is reached if it is possible to implement an external incentive, but the subjects explicitly trust each other and do not use the incentive mechanism. Therefore, while in general trust is crowded out by external incentives, the existence but nonuse of incentives allows for increased pro-social behavior. Bohnet,

Frey, and Huck (2001) conducted a study where subjects must decide if they want to enter a contract without knowing whether the partner will perform. The authors report a crowding-out effect: in a situation of weak contract enforcement, performance is higher than in a situation of medium contract enforcement. Only if contract enforcement is increased well past the medium mark are contracts performed again. These findings support the notion that medium or low incentives can crowd out trust and intrinsic motivation. Falk and Kosfeld (2004) present an interesting experimental study on the dysfunctional effect of incentives. In their study, a principal's decision to control decreases agents' motivation and effort.

Extrinsic incentives do not always lead to a motivational crowding-out effect. The present state of research allows one to indicate conditions under which extrinsic incentives have more positive or more negative effects. A discussion of these identifiable conditions makes it clear that crowding effects are of particular importance for pro-social behavior.¹³

Intrinsic motivation can only be crowded out by extrinsic incentives if people have an intrinsic motivation to begin with. If, for example, people only undertake a task due to extrinsic motivation, an increase in extrinsic incentives will certainly increase effort, as predicted by standard price theory. However, to contribute time or money to a public good often involves some sort of intrinsic motivation. The introduction of external incentives to increase pro-social behavior must therefore be considered very carefully.

Motivational crowding out is expected if the external intervention is perceived as controlling (Enzle and Anderson 1993). Psychologically, extrinsic incentives can have negative effects when they reduce the perceived self-determination of individuals (Rotter 1966 and Deci 1975), or when they interfere with a relationship based on mutual trust (Rousseau 1995). However, if extrinsic incentives are applied carefully—for example, in a way acknowledging individuals' intrinsic motivation—they may not be perceived as hostile and controlling, and can even support and increase pro-social behavior (a crowding-in effect).

A motivational crowding-out effect only results in a net negative effect on behavior if it dominates the standard relative price effect. As mentioned before, this is most likely to be the case for small (positive or negative) incentives. Motivational crowding, however, is not thereby rendered irrelevant in the context of pro-social behavior. First, there are many situations where small incentives are quite important.

In the case of pro-social behavior, the introduction of small incentives is widely discussed, as in the context of volunteering. Second, the reliance on extrinsic incentives may lead to a selection of certain selfishly oriented people. Whereas for some tasks it is desirable to attract extrinsically motivated people (see, e.g., Lazear 2000), in other areas like the nonprofit or charitable sector this is not very welcome. Third, if pro-social preferences are affected permanently, pro-social behavior will not reach the original level again, even if the extrinsic incentive is removed. Meier (2005a) presents suggestive evidence from a field experiment, which shows that offering matching in a donation context increases donations in that period in which the matching was offered. However, people's willingness to contribute decreases below the original level if the matching is removed. Gneezy and Rustichini (2000b) present evidence from a field experiment indicating that the original level of pro-social behavior will not be reached even after the dysfunctional incentive is removed. Fourth, extrinsic incentives for a certain task may not only reduce the intrinsic motivation for the particular task, but also spill over to other areas (Frey and Benz 2000). This may then destroy intrinsic motivation in areas not actually subject to the external intervention. The detrimental effect of extrinsic incentives may be even worse in the dimension not directly affected.

3.5 Heterogeneity in Individuals

In standard economic theory, preferences are usually (but not always) assumed to be homogeneous. This assumption generates powerful predictions with regard to pro-social behavior. However, taking the variation in pro-social attitudes into account leads to interesting additional implications. To begin with, there are significant differences between individuals: Andreoni and Miller (2002) show in a study based on dictator games that about 47 percent of individuals can be characterized as selfish (however, only 23 percent are perfectly selfish), while the other 53 percent have to be characterized as "other regarding." Fischbacher, Gächter, and Fehr (2001) find in a public good game that 30 percent of the individuals behave like free riders and 50 percent can be characterized as conditional cooperators. I discuss the three implications of this heterogeneity below.

The *interaction of different types* of people is crucial to understanding why cooperation is stable and public goods are provided. Consider, for example, the situation in which an egoistic individual is interacting

with a reciprocal individual. The presence of a reciprocal individual may change the egoist's material incentive and therefore cause the egoist to behave pro-socially. The presence of only a few reciprocal types may have a big impact on the aggregate outcome of markets and organizations (see the survey in Fehr and Fischbacher 2002). Whether a pro-social individual will cause an egoist to behave pro-socially or, conversely, a few egoists cause pro-social individuals to start free riding, is a question that depends crucially on the institutional setting.¹⁴ To analyze the institutions that lead to one of the two situations, one has to understand how heterogeneous individuals interact.

The *institutional environment may influence individuals differently*. In analyzing the effect of a change in the institutions, it is important to take heterogeneous individuals into account. Meier (2005a) presents additional evidence from a controlled field experiment showing that only certain types of people react to a change in relative prices. In addition, people may react quite differently to the introduction of monetary incentives with respect to their motivation to behave pro-socially. Pro-socially inclined persons may reduce their intrinsically motivated pro-social behavior when external incentives are introduced, whereas a more selfishly oriented individual may increase his or her pro-social behavior to capture the extra reward.

The *evolution of heterogeneous pro-social preferences* can help one to understand how pro-social preferences can be fostered. Very little is known about this question in economics. One prominent position, however, is that education can influence pro-social behavior and probably even preferences. Economics and business students in particular are assumed to be better citizens and better future managers if they are taught some ethics instead of self-interest maximization. Economics students are portrayed as being more egotistical than noneconomists, partly because the training changes their behavior (e.g., Frank, Gilovich, and Regan 1993a and 1996). However, Frey and Meier (2003) analyze a large panel dataset and find that those who choose economics as their major already tend toward egoism when they enter. In that case, it is possible that "economists are born, not made" (Carter and Irons 1991).

3.6 How Does Pro-Social Behavior Affect Happiness?

In the history of ideas, pro-social behavior has always been linked with human welfare. In the Judeo-Christian tradition, helping others is the

only way to reach the ultimate goal of happiness. However there is still no empirical evidence proving that a person who acts pro-socially is happier than a *homo oeconomicus*, who is solely concerned with his or her narrow self-interest. To answer the question of what constitutes a good life or a happy life, one has to understand how pro-social behavior influences utility (happiness). Reported subjective well-being is typically used as a proxy for utility. Frey and Stutzer (for surveys, see Frey and Stutzer 2002a and 2002b) present excellent surveys on why and how economists can learn from happiness research.

The various theories on pro-social behavior lead to different predictions concerning utility gained from such behavior. In the following, these predictions are presented alongside the scarce empirical evidence gleaned from economics and the evidence documented in psychology and sociology.

3.6.1 Inequality and Happiness

According to these theories, people's well-being increases if they observe that other people's lives are improving or that inequality, whether between two individuals or social inequality in general, is decreasing. Importantly, the increase in utility occurs independently of one's own decision, whereas according to impure altruism one's own decision is a substantial source of the warm glow coming from pro-social behavior. A few studies have investigated the overall effect of inequality, as well as the effect of other people's material well-being on individual happiness levels. Alesina, Di Tella, and MacCulloch (2005) find that people are less likely to report being happy when inequality is high. This "inequality aversion," however, is more pronounced in Europe than in the United States. Interestingly, the effect of inequality on the well-being of the poor versus the wealthy differs on the two continents. Whereas in the United States only the wealthy seem to suffer from the effect of inequality, in Europe only the poor's well-being is decreased by higher inequality. The authors interpret this result, which is inconsistent with pure inequality aversion, as an effect of differences in social mobility between European countries and the United States. Because social mobility in the United States is perceived to be higher, wealthy U.S. citizens interpret high inequality as a potential risk of falling down the scale in case of an unfortunate life event. According to the authors, poor U.S. citizens believe that they can improve their income situation substantially. In contrast, poor Europeans feel stuck in poverty. People may therefore not only care about inequality outcomes

(whether the income distribution is more or less unequal), but also about the process leading to a certain result (whether it is in the individual's power to influence an outcome).¹⁵ However, Schwarze and Härtger (2004) find evidence consistent with inequality aversion in Germany for all income classes. In their panel survey, people's life satisfaction is inversely related to inequality on the regional level.

Charness and Grossekopf (2001) find no correlation between happiness scores and preferences for equality in dictator games. Subjects who choose more equal payoffs do not report higher well-being after the decision, nor do subjects who report higher happiness scores before the decision choose more equal payoffs. Thus the experiment does not support the hypothesis that happiness is correlated with inequality. However, overall happiness measures are explicitly designed to be relatively insensitive to minor life events. They are therefore not expected to be influenced by the results in a laboratory experiment involving low stakes. Much more research is needed to understand how others' utility levels influence one's own happiness.

3.6.2 Pro-Social Behavior and Happiness

Theories of impure altruism predict that pro-social behavior increases utility. In this branch of research, the focus is on the effect of pro-social behavior per se on subjective well-being. Various studies by psychologists and sociologists, mostly focusing on volunteering, find positive correlations between pro-social behavior and well-being (for a survey, see Wilson and Musick 1999). Volunteers report higher well-being scores than non-volunteers; they are less depressed and their mortality rate is lower than average. These effects are found to be especially true for elderly volunteers (Wheeler, Gorey, and Greenblatt 1998).

People may get a warm glow from volunteering because helping others increases either their perceived self-esteem or their self-efficacy. Volunteering may also generate a state of "flow" (Csikszentmihalyi 1990), which depends on the extent of commitment, the use of skill, and the kind of achievement involved in the task (Argyle 1999, 364–365). Alternatively, the positive effect of pro-social behavior in the form of volunteering may be due to the effect of social integration. People who feel integrated and enjoy many personal relationships are taken to be happier than people who feel lonely. According to this explanation, volunteering increases people's well-being not because they help others, but because they feel integrated. Most studies on the effects of pro-social behavior on happiness (mostly on volunteering)

cannot discriminate between utility arising from the act of helping and utility arising from side effects such as social involvement. In addition, most empirical work uses cross-sectional data where participants self-assess the impact of volunteer programs. Apart from problems arising from response biases in volunteers self-assessing their own program's benefits, the direction of causality is very difficult to assess in such studies. In fact, pro-social behavior may not make people happier so much as happier people are more willing to behave pro-socially. There is some evidence that happiness affects one's willingness to help others. In a number of experiments, the mood of subjects was first manipulated, for example, by letting them "find" a coin or by letting them win in a game. Afterward the subjects had the opportunity to help in a task or to donate money to a charity. It is found that those with induced good moods were more likely to help others (Harris and Smith 1975; Isen, Horn, and Rosenhan 1997).¹⁶

Konow and Earley (2002) use simple dictator games to disentangle the various effects influencing the relationship between happiness and pro-social behavior. The authors ask the subjects various questions about their subjective well-being either before or after a decision about dividing an amount of money between another person and the subjects themselves. The results indicate an indirect relationship between pro-social behavior and happiness: generosity contributes to self-actualization, which in turn increases long-run happiness.

Meier and Stutzer (2004) find robust evidence that volunteers are more satisfied with their lives than nonvolunteers, based on a large-scale panel dataset for Germany. Causality is addressed by taking advantage of a natural experiment: the collapse of East Germany and its volunteer infrastructure. People who accidentally lost their opportunities for volunteering are compared to people who experienced no change in their volunteer status. Exogenously losing the opportunity to volunteer decreases people's well-being. This result establishes that part of the correlation between happiness and volunteering is because volunteering causes higher well-being.

3.7 Concluding Remarks

The evidence is overwhelming that human behavior is not solely motivated by narrow self-interest. People accept costs when engaging in pro-social activities, like voluntarily contributing money or time to public goods or enforcing social norms. Pro-social behavior is

widespread and quantitatively important for economic and societal outcomes. When designing institutions, pro-social behavior has to be taken into account. If not, the institutions may not reach their intended goals.

In recent years, a number of theories have evolved that attempt to formalize pro-social behavior. The most important approaches presented in this survey can be classified into three groups: (1) those that emphasize the distributional outcome, as do theories of outcome-based pro-social preferences; (2) those that highlight the importance of the process that leads to a certain outcome (e.g., the intentions of the people involved), an aspect stressed by theories of reciprocity and conditional cooperation; and (3) those that focus on the importance of people's self-identity for pro-social behavior.

An important insight developed in this survey is the effect of the institutional environment on pro-social behavior. On the one hand, the institutional environment affects the salience of particular social norms, as well as the intrinsic motivation to behave pro-socially. On the other hand, it influences the social interaction between (egoistic and/or altruistic) individuals, as in how the violation of a social norm can be punished.

We believe that less emphasis should be given to the quest for the ultimate pro-social motivation but more to conditions which trigger one or the other of these effects. The evidence on theories of pro-social behavior is inconclusive because (1) not only do people differ substantially in their pro-social preferences, but (2) even the same people might show different patterns of pro-social behavior depending on the situation. While in some situations people are motivated by altruism or inequality aversion, in other situations people care more for the socially efficient outcome. To get a better understanding of the importance of these conditions will help to bring the various theories and their supporting evidence in line with each other.

Notes

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1. Estimations for the United States show that in 1995, more than 68 percent of households contributed to charitable organizations. In 1998, these private households donated more than \$134 billion (Andreoni 2002). In the same year, more than 50 percent of all adult Americans did voluntary work, amounting to 5 million full-time equivalents

(Anheier and Salamon 1999, 58). Although the extent of charitable contributions and the engagement in volunteer work is smaller in Europe, it is still substantial: in Europe, on average 32.1 percent of the population volunteer. Taking the hours volunteered into account, this amounts to 4.5 million full-time equivalent volunteers for the ten European countries taken into consideration (Anheier and Salamon 1999, 58).

2. As fundraising and revenues from ancillary goods constitute a "necessary evil" for many managers of nonprofit organizations (see, e.g., Segal and Weisbrod 1998) government grants may not only crowd out private contributions due to donors' altruistic preferences, but they may also lower the incentive of charities to undertake fundraising activities. Andreoni and Payne (2003) have empirically established that, for arts organizations and social service organizations, part of the crowding-out indeed comes from the reduction of charities' fundraising efforts when they receive government grants. If fundraising efforts are not included in the estimations, even a low crowding-out effect is likely to be overestimated.

3. Another extension of the pure altruism model assumes that donors value making a difference (Duncan 2004).

4. For a similar model, see Bolton and Ockenfels (2000).

5. For models which introduce other motives like envy and spitefulness, see Mui (1995) and Fehr and Schmidt (2003).

6. For the effect of framing on the proportion of noncontributors vs. the proportion of contributors, see Meier (2006).

7. See also the field experiment by Blumenthal, Christian, and Slenrod (2001). However, they find no statistically significant effect to informing taxpayers that few others cheat.

8. Another field experiment that can be interpreted as evidence for conditional cooperation is presented by List and Lucking-Reiley (2002). The authors analyze the impact of seed money on charitable donations, which shows a positive correlation between the giving of others and the giving of the individual donor.

9. A large Swiss charity, for example, raises donations by announcing the donated amount on public radio. The reasons for this technique may be twofold: first, people are more willing to donate when others do so as well (conditional cooperation) and, second, it may be easier to express the intention to donate than to actually do it. Surprisingly (for an economist), most people actually donate the promised amount although no enforcement mechanism exists. Cialdini (1993, 57–113) presents many examples of how firms use people's tendency to be consistent with former commitments to sell their products or to raise donations.

10. Interestingly, men and women have different price elasticities: "(...) when it is relatively expensive to give, women are more generous than men; however as the price of giving decreases, men begin to give more than women" (Andreoni and Vesterlund 2001, 294). Bohnet (in chapter 4 of this book) finds substantial differences in the trust behavior of men and women. However, in a field experiment men were not more sensitive to a matching mechanism than were women (Meier 2005b).

11. An exception from this general result is the study by Duncan (1999).

12. For a meta-study declaring the crowding effect to be "a myth," see Eisenberger and Cameron (1996). For an evaluation of the two contradictory meta-studies, see Lepper, Henderlong, and Gingras (1999).

13. However, little is known about whether a motivational crowding out is due to a change in preferences (Frey 1997b) or to the perceived nature of the task (Bénabou and Tirole 2002), nor about how exactly intrinsic motivation is rebuilt after an extrinsic incentive is removed.
14. Because an altruist mimics the behavior of an egoist every time he or she meets one, expectations about others differ between the two types. An egoist believes that everybody is an egoist because he or she only meets people who behave egoistically, while an altruist knows that there are egoists and altruists (Kelley and Stahelski 1970). For a test of this "triangle hypothesis," see van Lange (1992).
15. The importance of processes for utility is often neglected in economics. For a survey on procedural utility, see Benz (chapter 8 in this book).
16. The negative-state-relief theory in psychology (see Cialdini, Kenrick, and Baumann 1982) proposes exactly the opposite: people in a bad mood behave more pro-socially because they think that doing good lifts the bad mood.

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