

THE IMPACT OF COOPERATION DEFAULTS ON VOLUNTARY CONTRIBUTIONS TO PUBLIC GOODS[†]

Steffen Altmann^{1,*} and Armin Falk²

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Abstract

This paper reports evidence from an experiment that was conducted to test the influence of non-binding default rules on voluntary cooperation. We find that contributions to a public good increase significantly when a cooperative default is implemented. Non-binding defaults particularly influence contribution decisions of participants with lower levels of cognitive reflection whereas contributions of participants with high CRT scores are virtually unaffected. Compared to an environment with uncooperative contribution default, cooperative default options increase subjects' earnings independent of their individual levels of contribution. This suggests that cooperation defaults can effectively be used as a welfare-enhancing policy in the spirit of "libertarian paternalism".

Keywords: Cooperation, Defaults, Cognitive Reflection, Paternalism

JEL codes: D03, H41, C92

¹ Institute for the Study of Labor (IZA) and University of Bonn

² University of Bonn and IZA

* Corresponding Author. Address: Institute for the Study of Labor (IZA), P.O. Box 7240, D-53072 Bonn, Germany.

Email: altmann@iza.org; Tel.: +49-228-3894-403; Fax: +49-228-3894-180

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1 Introduction

Non-binding default options have a strong impact on behavior in a variety of economic settings, ranging from enrollment and contributions into retirement saving plans (Madrian and Shea 2001, Choi, Laibson, and Madrian 2004) over choices of insurance contracts (Johnson, Hershey, Meszaros, and Kunreuther 1993) to consent to mostmortem organ donations (Johnson and Goldstein 2003). In recent years, it has been argued that default rules could be a powerful instrument of what has been coined “libertarian” or “asymmetric” paternalism (Thaler and Sunstein 2003, Camerer, Issacharoff, Loewenstein, O’Donoghue, and Rabin 2003). The aim of libertarian paternalistic policies is to help some people in making “better” decisions without restricting choices for anyone. The concept rests on the insight that most people are not perfectly rational decision makers but rather characterized by unstable preferences, limited willpower, and limited cognitive abilities. If this is the case, appropriately chosen defaults could indeed be welfare-enhancing: since the cost of opting out of a non-binding default rule is usually negligible, defaults should not distort behavior of fully rational decision makers but could potentially improve decisions of boundedly rational agents.

In this paper, we extend the analysis of defaults to strategic decision making by studying the effects of cooperation defaults in social dilemmas. Using an experimental setup that combines elements of field and laboratory experiments, we explore whether non-binding cooperation defaults have an influence on voluntary contributions to public goods. We find that cooperative default rules indeed increase contributions, both compared to an environment where the default is not to cooperate and to a control treatment where no default rule is set and subjects have to decide actively on their level of cooperation. Since contributions to the public good are socially efficient, the increase in contributions caused by the cooperative default leads to socially more beneficial outcomes. Moreover, we show that subjects can individually benefit from more cooperative defaults, irrespective of their own contribution to the public good: subjects who follow the default and fully cooperate

under the cooperative default regime do not earn significantly less than subjects who contribute minimally under uncooperative defaults.

Our experimental approach also allows us to identify who is affected by default rules; we thus can explore the mechanisms through which defaults operate in an interactive decision-making environment. In our experiment, the cost of opting out of the default is trivial. The different default rules that apply in our treatment conditions should thus not influence decisions of rational decision makers, while they could have a strong impact on decisions of subjects with lower cognitive abilities. This is what we observe. Using a measure of cognitive reflection introduced by Frederick (2005), we show that it is indeed the subjects with low levels of cognitive reflection whose decisions are influenced by changes in the default rule. At the same time, decisions of subjects with high cognitive-reflection scores remain virtually unaffected.

Our paper also provides new insights into *why* default rules can be effective in environments that rely on voluntary cooperation, e.g., fundraising of charities or organ donations (Breman 2008, Johnson and Goldstein 2003). In the probably best-known example of default effects on cooperation—the higher fraction of potential organ donors in countries with “presumed consent” legislation—it has proven difficult to disentangle the direct effect of defaults from other, institutional differences that could affect donation decisions (Abadie and Gay 2006, Rithalia, McDaid, Suekarran, Myers, and Sowden 2009). It has also been argued that presumed consent legislation could crowd out life-time donations, ultimately equalizing *effective* donation rates across countries with presumed consent and explicit consent regulation for organs where life-time donations are feasible (Golsteyn and Istanto 2008). An advantage of studying defaults in a narrowly controlled environment is the possibility to clearly identify direct, causal consequences of changes in the default option. In addition, we can analyze the forces that drive the observed effects. For instance, defaults could influence behavior of conditionally cooperative decision makers via changing their beliefs and perceptions of others’ behavior. To the best of our knowledge, the idea that defaults could operate via their influence on beliefs has so far

been discussed only informally (see Thaler and Sunstein 2008, p. 181f.), partly because it is inherently difficult to assess with field data.¹ Our data show that, indeed, (i) many subjects in our experiment are conditionally cooperative and that (ii) the cooperative default increases both the expected level of contributions by others and subjects' confidence in their beliefs. It is likely that these more positive beliefs make subjects more willing to cooperate themselves.

In the remainder of the paper, we present our experimental design and procedures (Section 2) and discuss our results in Section 3. Section 4 concludes.

2 An experiment for studying cooperation defaults

Subjects in our experiment played a simple linear public goods game (e.g., Fehr and Gächter 2000a). Participants were randomly and anonymously allocated in groups of four subjects. The implemented voluntary contribution mechanism reflects the prototypical features of social dilemma situations: Each participant received an initial endowment y of 7 Euro. Subjects then decided independently how much of this initial endowment they would contribute to a public good. Individual contributions are denoted by g_i . Contributions were socially beneficial, i.e., they increased the total payoff for the group: every unit of money contributed was multiplied with a factor $a = 2$ and distributed equally among the four members of the group. This, however, implies that free-riding (i.e., contributing $g_i = 0$) is the dominant strategy for subjects who want to maximize monetary payoffs. The marginal return from a unit of (own) money contributed to the public good is smaller than one ($\frac{a}{4} < 1$). The monetary payoff π_i for subject i can be summarized as follows:

$$\pi_i = y - g_i + \frac{a}{4} \sum_{j=1}^4 g_j$$

All treatments of our experiment used this basic game, but differed in the procedures employed. At the beginning of the experiment, subjects in all treatments

¹ For instance, Abadie and Gay 2006 use blood donations as a proxy for differences in social preferences across countries to estimate whether prevailing default regulations have been *endogenously* implemented according to the population's (inherent) willingness to cooperate / donate.

received a set of written instructions², a printed “decision form” where the contribution decision could be entered, a stamped envelope to send back the decision form, and an ID-card to administer payments.

Participants had to send back the decision form within six days after the start of the experiment, using the stamped envelope that they had received. Treatments differed in the default option implemented in case a subject did *not* send back her decision form. One third of participants took part in the *cooperative default condition* (or *D-7 treatment*). These participants were instructed that they would automatically contribute their entire endowment of 7 Euro in case they did not send back their decision form. By contrast, participants in our second treatment (*uncooperative default condition* or *D-0 treatment*) were informed that they would contribute nothing unless they chose a different contribution level on their decision form. The last third of subjects took part in the *active decision condition* (or *AD treatment*). For these participants, no default option was specified, i.e., subjects *had to* decide actively how much to contribute. The prevailing default option was mentioned in the experimental instructions and specified on the decision form of subjects. Subjects knew that all participants in their group faced the same default option, and our design ruled out that subjects could be aware of different defaults in other treatments of the experiment.

After one week, participants were invited to the university for receiving their payments and filling out a short post-experimental questionnaire. In the questionnaire, we elicited subjects’ beliefs regarding contribution decisions of the other members in their group³ and subjects’ socioeconomic characteristics. To analyze the question whether defaults specifically affect “less rational” decision makers, we also elicited a measure of cognitive abilities. The measure we used was the cognitive reflection test (CRT) introduced by Frederick (2005). This test consists of three items, and it has been shown that test results are highly correlated with economically relevant decisions like risk-taking and intertemporal decision making. In addition, CRT

² Instructions are available from the authors upon request.

³ We incentivized the beliefs elicited by rewarding correct estimates with 10 Euro.

scores are also highly correlated with other measures of cognitive ability like the SAT or the Wonderlic Personnel Test (see Frederick 2005).

Figure 1: Timing of the experiment.

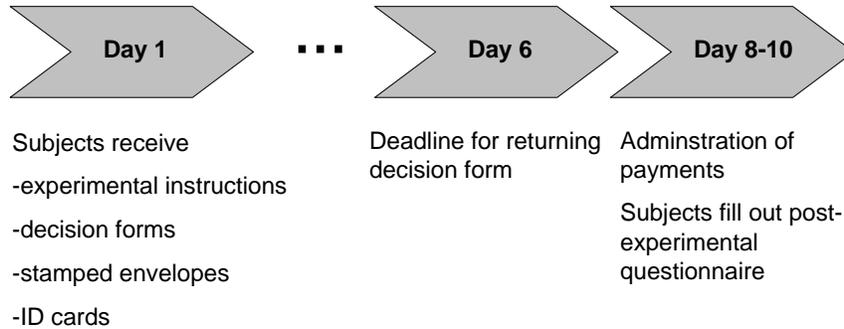


Figure 1 summarizes the timing and procedures of our experiment. The combination of lab and field elements in our experimental design was intended to fulfill several necessary requirements for studying the question at hand. First, it ensures that subjects interact in a natural decision environment. Specifically, subjects faced no time pressure to make their decision before the default option would become effective. Second, our design minimizes costs for subjects who want to opt out of the default regulation, as subjects only had to fill in their decision form and throw the stamped envelope into a mailbox. Similarly, “showing up” and participating in the experiment was also not costly for subjects: we recruited subjects after they participated in an experimental session at the experimental laboratory of the University of Bonn.⁴ At the same time, our experiment guarantees a degree of experimental control that can usually only be achieved in laboratory environments. For instance, subjects interacted completely anonymously. Group composition and subjects’ identity could only be revealed by the experimenter, using a 7-digit identification number (ID) that was printed on all documents that participants received. Additionally, our design enables us to measure several control variables and personal characteristics like subjects’ expectations, cognitive abilities, etc. These measures allow us to deeper analyze the mechanisms through which defaults operate.

⁴ Participants were informed that no group member in the public goods game would be one of the participants they faced in the past experiment.

3 Results

In this section, we first test whether default options have an influence on the level of cooperation in the voluntary contribution mechanism. We then explore the mechanisms behind the observed treatment effects, concentrating on the influence of cognitive abilities and the impact of cooperation defaults on subjects' beliefs. Finally, we address the question whether appropriately chosen defaults can increase social and individual welfare.

3.1 The behavioral consequences of cooperation defaults

In total, 72 subjects were invited to participate in the experiment (24 subjects in each treatment). Four subjects (two in the D-0 treatment and one each in the AD and D-7 treatment) did not send back their decision form and did not show up on the dates of payment. We do not count these subjects as participants and exclude them from the analysis below. This leaves us with 22 independent observations for the D-0 treatment and 23 independent observations for AD and D-7.⁵ Table 1 summarizes the fraction of subjects who (i) took an active decision (i.e., returned the decision form), (ii) followed the default, and (iii) did not participate in the three treatments of the experiment.

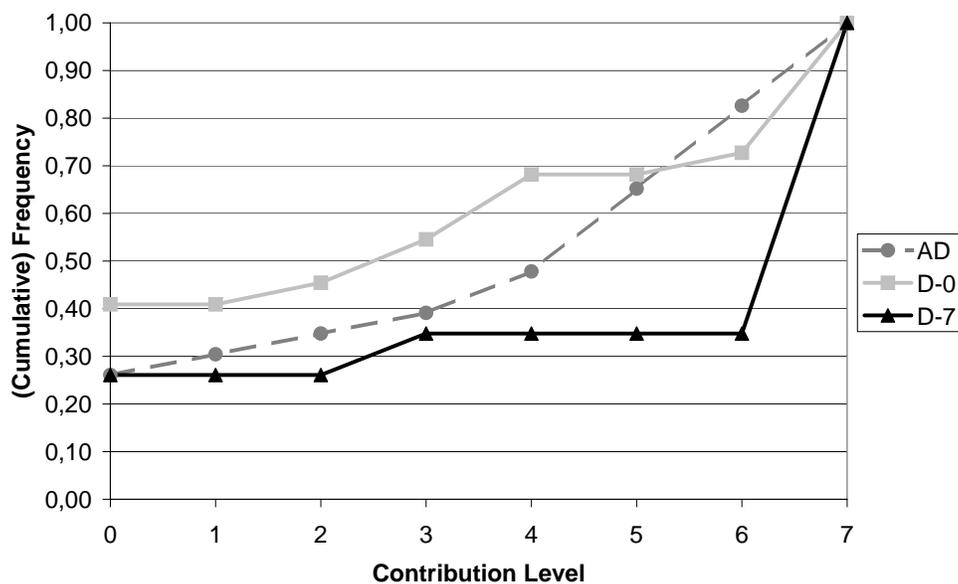
Treatment	Active Decision	Default Implemented	No Participation
AD	0.958	–	0.042
D-0	0.542	0.375	0.083
D-7	0.333	0.625	0.042

Table 1: *Response rates across treatments: Fractions of subjects who made an active contribution decision, contributed according to the default option, and did not take part in the experiment.*

⁵ The high response rate of 96% in the active decision condition is interesting in itself, as it suggests that the costs of participating and taking an active decision were indeed trivial.

In both default treatments, we observe a strong impact of default options on subjects' choices. 37.5% of subjects in the D-0 treatment and 62.5% of subjects in the D-7 treatment stick to the default. This implies that only one third of subjects in the cooperative default condition took an active decision. As a consequence, cooperation rates differ strongly across treatments. Figure 2 displays the cumulative frequencies of contributions in the three treatments. Compared to the control condition (AD treatment), contributions are shifted towards the default options in both default treatments. This implies that the average level of cooperation differs between the three treatment conditions: compared to the AD treatment where subjects contribute on average 3.74 Euro, contributions decrease to 3.09 Euro in the D-0 treatment and increase to 4.83 Euro in the D-7 treatment. While the difference between AD and D-0 is not significant (Mann-Whitney test, two-sided, $p = 0.506$), contributions in the cooperative default condition are significantly higher than in both other treatments (D-7 vs. AD, $p < 0.05$; D-7 vs. D-0, $p < 0.05$). The hypothesis that the distribution of contributions in D-7 is the same as in the other treatments can be rejected (Kolmogorov-Smirnov test, exact p -value = 0.052 (D-7 vs. AD) and $p = 0.009$ (D-7 vs. D-0), respectively).

Figure 2: Cumulative frequencies of contributions



The impact of defaults on subjects' behavior can also be seen if we compare the frequencies of contribution decisions in all treatment that coincide with one of the default options. 41% of the participating subjects contribute the minimal possible amount when “contributing nothing” is the default option. When no default is specified (AD treatment), only 26% of subjects do so. This figure exactly coincides with the number of subjects contributing the minimal possible amount in the *cooperative* default condition (D-7). Similarly, 17% (AD treatment) and 27% of subjects (D-0 treatment) contribute their entire endowment when it is not the default to do so. The fraction increases to 65% of the participants when “full cooperation” is the default option (D-7 treatment).

3.2 How do defaults operate?

In this section, we analyze potential mechanisms through which defaults could operate in our setup. We focus on two complementary channels. First, we analyze whether defaults specifically affect certain subgroups of subjects. In particular, we analyze whether default options have a stronger impact on persons with lower levels of cognitive ability. Secondly, we analyze to what extent defaults change subjects' beliefs regarding behavior of others' in the social dilemma situation that we implemented. This is important in light of the large literature that stresses the role of beliefs for behavior of conditionally cooperative subjects in public goods dilemmas (e.g., Rabin 1993, Fischbacher, Gächter, and Fehr 2001).

3.2.1 Cooperation defaults and cognitive reflection

Since the implemented default rules are non-binding, they should have little or no effect on perfectly rational subjects with stable preferences. However, it could be the case that default options influence decisions of boundedly rational subjects, e.g., subjects with limited cognitive skills. This is exactly what could make defaults a powerful instruments of “libertarian paternalistic” policy making, since decisions of rational agents are not distorted, but decisions of boundedly rational subjects are potentially improved.

Treatment	D-0	AD	D-7
Low CRT	2.36	4.71	5.21
High CRT	3.82	3.31	4.22

Table 2: *Contribution levels for subjects with low and high CRT scores (0-1 and 2-3 correct answers in CRT test, respectively.)*

We measure cognitive ability—or, more precisely, cognitive reflection—using the cognitive reflection test (CRT). Following Frederick (2005), we classify subjects according to the number of correctly answered questions into a “low-CRT” group (0-1 correct answers) and a “high-CRT” group (2-3 correct answers). 47% of participants (32 subjects) fall into the former category, while the high-CRT group comprises 53% of participants. Table 2 summarizes average contributions of subjects with high and low CRT scores across treatments. The values indicate that default options indeed only had a modest impact on the behavior of participants with high CRT scores: compared to the active decision condition, cooperation levels are actually slightly higher, *both* for the cooperative and the uncooperative default. Contribution decisions of subjects with high CRT scores do not differ significantly between any two treatments (pairwise Mann-Whitney tests, $p > 0.364$).

The picture differs if we focus on the group of low-CRT subjects. Compared to the active decision condition (AD), these participants contribute less when facing the uncooperative default (D-0) and (slightly) more under the cooperative default option (D-7). Most importantly, the difference in contributions between the two default regimes is highly significant for this group of subjects (Mann-Whitney tests, $p = 0.014$).⁶ As hypothesized in the literature on libertarian or asymmetric paternalism (Thaler and Sunstein 2003, Camerer, Issacharoff, Loewenstein, O’Donoghue, and Rabin 2003), this indicates that defaults have a greater impact on behavior of

⁶ Pairwise Mann-Whitney tests reveal that, compared to the intermediate contributions in the AD treatment, contributions in D-7 and D-0 are not or only weakly significant ($p = 0.134$ and $p = 0.071$, respectively).

subjects with lower levels of cognitive reflection, while they leave decisions of more rational subjects unaffected. Indeed, only 45% of subjects with high CRT scores stick to the default option whereas roughly two thirds of low-CRT subjects (64%) do so.

3.2.2 Defaults, beliefs, and social preferences

A large literature stresses the importance of social preferences, especially preferences for conditional cooperation, for behavior in social dilemma situations (e.g., Fehr and Gächter 2000b, Fischbacher, Gächter, and Fehr 2001). If subjects have social preferences, beliefs about behavior of others become important, essentially rendering a social dilemma into a coordination game (e.g., Rabin 1993, Falk and Fischbacher 2006, Fischbacher and Gächter 2006): conditionally cooperative individuals who have more positive beliefs about others' behavior are willing to voluntarily cooperate more themselves. More positive beliefs about others' behavior could thus increase efficiency in several domains of economic interaction where voluntary cooperation is relevant; from charitable donations over tax evasion and environmental protection to blood or organ donation. Default options potentially play an important role in these fields if they impact *behavior* through changing beliefs about others' behavior. Our highly controlled decision environment allows us to directly test this hypothesis.

In the post-experimental questionnaire—prior to giving information on payoffs in the experiment—we elicited subjects' beliefs about the contributions of the other three group members (see Section 2). Additionally, we asked subjects about their confidence in their beliefs.⁷ The data demonstrate that conditional cooperation is clearly relevant in our experiment: a regression of subjects' contribution on the expected sum of contributions by other group members indicates that, on average, participants increased their own contribution by 0.83 Euro if they expect the average contribution of the three other group members to increase by 1 Euro ($p < 0.001$).

How do the different default options influence beliefs? First, the cooperative default indeed has a positive influence on subjects' beliefs: the expected sum of con-

⁷ Confidence or (perceived) certainty of beliefs was rated on a 8-point Likert Scale.

tributions by other group members increases from 11.95 Euro (D-0) over 12.78 Euro (AD) to 14.57 Euro (D-7). While qualitatively in line with the hypothesized effect of defaults on beliefs, the difference between the expected levels of contributions is not significant. However, treatments differ significantly in subjects' *confidence* in their beliefs: subjects in the cooperative default condition feel significantly more confident that their estimated belief is correct (Mann-Whitney test, D-7 vs. other treatments: $p = 0.016$, D-7 vs. AD: $p = 0.019$, D-7 vs. D-0: $p = 0.072$). Together with the more positive beliefs, the higher confidence in cooperative behavior of others could make conditional cooperates more willing to cooperate in the D-7 treatment. This is also reflected participants' actual contribution decisions: while subjects in the D-0 treatment contribute on average 0.89 Euro less than they expect others' to do, this difference between own contribution and expected average contribution shrinks to 0.52 Euro in AD and 0.03 Euro in the D-7 treatment.

3.3 Are cooperative defaults beneficial?

Since contributions to the public good are—by design—socially beneficial, the higher contributions in D-7 compared to D-0 imply that a switch in the default option from an uncooperative to a cooperative default leads to an increase of “social welfare” in our setup. By changing the default from no cooperation (D-0 treatment) to high cooperation (D-7 treatment), average earnings of subjects increase by 23.5%. A regression that compares subjects' earnings in the D-0 and D-7 treatment indicates that this difference is highly significant (see Column (I) of Table 3. Reported robust standard errors are adjusted for clustering within groups).

However, the appeal of “libertarian paternalistic” policies lies in the idea of achieving actual pareto-improvements—by helping to increase utility for some agents without restricting choices and decreasing utility of any agent. In a trivial (and purely selfish) sense, this is not possible in our setup since the payoff structure of our experiment implies that, *ceteris paribus*, individual monetary payoff is maximized by free-riding and contributing the minimal possible amount. However, we have already seen that contributions and therefore social efficiency increased substantially

	(I)	(II)	(III)
Dependent Variable	π_i	π_i	π_i
D-7	2.29** (0.797)	3.479** (1.237)	-1.211 (1.680)
g_i	–	-0.684*** (0.125)	–
cons	9.773*** (0.633)	11.885*** (1.079)	11.778*** (1.224)
N. Obs.	45	45	24
R^2	0.124	0.525	0.054

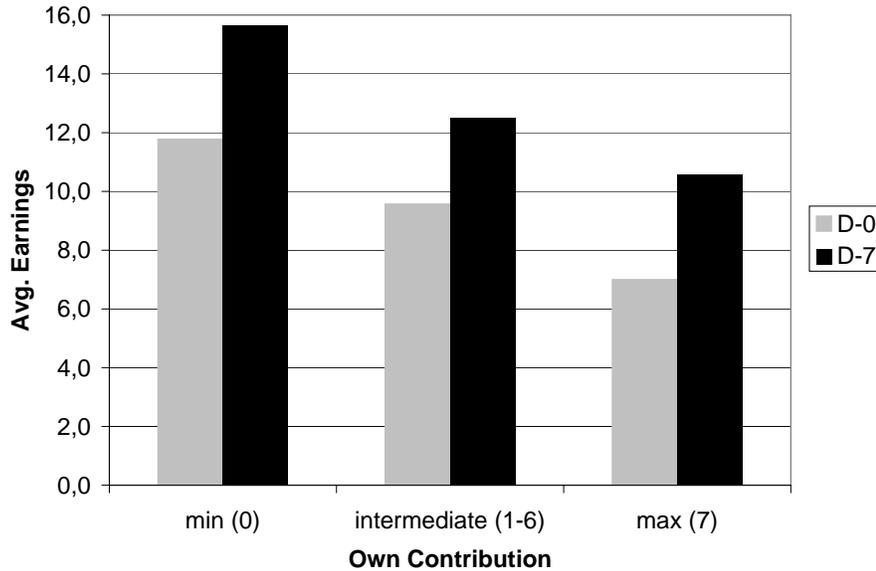
Table 3: *Payoff regressions. The dummy “D-7” is equal to 1 for the cooperative default condition. Robust standard errors adjusted for clustering on group level are reported in parentheses. Significance on the 5% and 1% level is denoted by **, and ***, respectively.*

due to the more cooperative default in the D-7 treatment. It could therefore be the case that, compared to the alternative situation of having an uncooperative default rule, subjects gained also individually. To analyze this question, we compare subjects’ earnings under the two default regimes, depending on their individual contribution decision.⁸ We classify subjects according to whether they followed one of the default options (either zero contribution or full contribution) or whether they contributed intermediate amounts ($g_i \in [1, 6]$).⁹ Figure 3 displays monetary payoffs for the three groups of subjects. The negative relation between own contribution and payoff *within treatment* reflects the incentive structure of our experimental game. Comparing payoffs *between treatments*, it is immediately apparent that all groups

⁸ In the presence of agents with social preferences, this comparison of monetary payoffs can necessarily provide only a rough estimate of subjects’ “utility”, e.g., as conditionally cooperative subjects might value achieving highly cooperative outcomes in itself.

⁹ As can be seen in figure 2, only few subjects contributed intermediate amounts in the two default treatments. We therefore collapse these subjects into one category for the following analysis. The results, however, do not depend on this classification and also hold when we analyze more detailed classifications. Specifically, individual earnings are higher in D-7 compared to D-0 irrespective of the individual contribution level.

Figure 3: Contributions and Earnings



of subjects benefit from the higher levels of cooperation in the cooperative default condition (D-7) compared to subjects with the same contribution levels in D-0. More importantly, however, the group of subjects who followed the default and contributed *fully* in the D-7 treatment does not earn lower payoffs compared to the groups of subjects who contributed *lower* amounts under the uncooperative default regime. On average, the group of subjects who contributes maximally if “full cooperation” is the default earns 10.57 Euro. This value is slightly higher than the payoff of subjects who contribute intermediate amounts in D-0 (9.57 Euro) and slightly lower than the payoff of freeriders when “no cooperation” is the default (11.78 Euro).

The regressions in Columns (II) and (III) of Table 3 illustrate these effects. Column (II) indicates that higher own contributions g_i (by design) decrease monetary payoffs but that, conditional on own contributions, payoffs are higher in the cooperative default condition. In Column (III) we directly compare payoffs of subjects who followed the default in the two default treatments (the group of subjects who contributed nothing in D-0 and the group of subjects who contributed fully in D-7). As already suggested by figure 3, payoffs of subjects who followed the

cooperative default in D-7 were not significantly lower than those of freeriders in D-0 ($p = 0.486$). In this sense, switching to from the uncooperative default to the cooperative default option indeed increased efficiency and individual “welfare” for some subjects without harming others.

4 Concluding remarks

Non-binding default rules are prevalent in many areas of economic and social life such as savings and insurance, online trade, and health decisions. In this paper, we have analyzed the role of defaults in strategic decision making by studying the effects of cooperation defaults in social dilemmas. We find that voluntary contributions to a public good increase significantly when a cooperative default is implemented. In particular, non-binding defaults influence contributions of participants with lower levels of cognitive reflection while leaving contribution decisions of participants with high CRT scores virtually unaffected. Compared to an environment with uncooperative contribution default rule, cooperative default options increase subjects’ earnings independent of their individual levels of contribution. This suggests that cooperation defaults can effectively be used as a welfare-enhancing policy in the spirit of “libertarian paternalism”.

References

- ABADIE, A., AND S. GAY (2006): “The Impact of Presumed Consent Legislation on Cadaveric Organ Donation: A Cross-Country Study,” *Journal of Health Economics*, 25, 599–620.
- BREMAN, A. (2008): “Give More Tomorrow: Two Field Experiments on Intertemporal Choice in Charitable Giving,” *Working Paper, University of Arizona*.
- CAMERER, C., S. ISSACHAROFF, G. LOEWENSTEIN, T. O’DONOGHUE, AND M. RABIN (2003): “Regulation for Conservatives: Behavioral Economics and the Case for “Asymmetric Paternalism”,” *University of Pennsylvania Law Review*, 151, 1211–1254.
- CHOI, J., D. LAIBSON, AND B. C. MADRIAN (2004): “Plan Design and 401(k) Savings Outcomes,” *National Tax Journal*, 57(2), 275–298.
- FALK, A., AND U. FISCHBACHER (2006): “A Theory of Reciprocity,” *Games and Economic Behavior*, 54(2), 293–315.
- FEHR, E., AND S. GÄCHTER (2000a): “Cooperation and Punishment in Public Goods Experiments,” *American Economic Review*, 90, 980–994.
- (2000b): “Fairness and Retaliation: The Economics of Reciprocity,” *Journal of Economic Perspectives*, 14, 159–181.
- FISCHBACHER, U., AND S. GÄCHTER (2006): “Heterogenous Social Preferences and the Dynamics of Free Riding in Public Goods,” *IZA Discussion Paper, No. 2011*.
- FISCHBACHER, U., S. GÄCHTER, AND E. FEHR (2001): “Are People Conditionally Cooperative? Evidence from a Public Goods Experiment,” *Economics Letters*, 41, 397–404.
- FREDERICK, S. (2005): “Cognitive Reflection and Decision Making,” *Journal of Economic Perspectives*, 19(4), 25–42.

- GOLSTEYN, B. H., AND T. ISTAMTO (2008): “Organ Donation Defaults and Waiting Time for Kidneys,” *mimeo*, *Maastricht University*.
- JOHNSON, E. J., AND D. GOLDSTEIN (2003): “Do Defaults Save Lives?,” *Science*, 302, 1338–1339.
- JOHNSON, E. J., J. HERSHEY, J. MESZAROS, AND H. KUNREUTHER (1993): “Framing, Probability Distortions, and Insurance Decisions,” *Journal of Risk and Uncertainty*, 7, 35–51.
- MADRIAN, B. C., AND D. F. SHEA (2001): “The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior,” *The Quarterly Journal of Economics*, 116, 1149–1187.
- RABIN, M. (1993): “Incorporating Fairness into Game Theory and Economics,” *American Economic Review*, 83(5), 1281–1302.
- RITHALIA, A., C. MCDAID, S. SUEKARRAN, L. MYERS, AND A. SOWDEN (2009): “Impact of Presumed Consent for Organ Donation on Donation Rates: a Systematic Review,” *BMJ*, 338, a3162.
- THALER, R. H., AND C. R. SUNSTEIN (2003): “Libertarian Paternalism,” *American Economic Review*, 93, 175–179.
- (2008): *Nudge*. Yale University Press, New Haven & London.