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The Solidarity Motive

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Abstract

For decades, experimental economics has been very interested in behavior that could be characterized as practicing solidarity (although the term is rarely used). Solidarity is a key concept in Catholic Social Teaching. This paper builds a bridge between these two endeavors that, thus far, had little contact with each other. Catholic Social Teaching is essentially normative. People are informed what they should do if they are good Christians. Experimental Economics is descriptive. Experimenters want to learn how much solidarity experimental participants exhibit when this is costly. But from a Catholic perspective it is interesting how strongly their norms are reflected in actual behavior. The many distinctions uncovered by behavioral economics may also help refine Catholic thinking. And behavioral economics is confronted with new questions, in particular regarding deontological motives.

JEL: A12, A13, C91, D03, D63, D64, Z12

Keywords: Solidarity, Dictator Game, Stealing Game, Public Good Game, Social Preferences, Deontological Motives

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1. Introduction

Solidarity is a key concept in Catholic social teaching. As Pope Francis in his address on the occasion of the World Peace Day 2014 put it:

„The many situations of inequality, poverty and injustice, are signs not only of a profound lack of fraternity, but also of the absence of a culture of solidarity. New ideologies, characterized by rampant individualism, egocentrism and materialistic consumerism, weaken social bonds, fuelling that “throw away” mentality which leads to contempt for, and the abandonment of, the weakest and those considered “useless”. In this way human coexistence increasingly tends to resemble a mere *do ut des* which is both pragmatic and selfish“.

But what is meant by solidarity? And to which degree is this a normative concept: we define and uphold a standard since feeble human nature is tempted to let us replace what we all *should* be doing by what serves our immediate satisfaction? And to which degree is this a descriptive concept: some of us or even most of us, under some or even most circumstances, are willing to live up to the expectations of solidarity. Hence which is the culprit: bad motives, or circumstances that do even turn essentially good-natured individuals into beings who ignore the call of solidarity?

These are eternal questions. Ultimately these questions are exploring *conditio humana*. Traditionally, tentative answers to these questions have been speculative. There is nothing wrong with speculation. The good thing about speculation is: it is not limited by any conceptual or methodological constraints. It is free to formulate novel thoughts, to express a concern that has escaped disciplinary attention, or disciplinary custom. However the scientific taste for rigor is no aberration. It helps disciplines see distinctions, and it helps them gauge the degree of confidence in factual statements. This is why Catholic social teaching might have something to gain from confronting its major claims with an interdisciplinary endeavor that has been going on for quite a while. Behavioral and experimental economics, together with compatriots from neighboring disciplines like the psychology of judgement and decision making, or the sociology of norms, have been striving hard for conceptualizing and testing motives that transcend profit maximization.

In this endeavor, the term solidarity rarely features. Yet, the term solidarity is used in multiple ways in Catholic social teaching, some of which resonate well with behavioral and experimental research, while others do less so. This creates an opportunity for cross-fertilization. Catholic social teaching on solidarity stands to gain conceptual clarity and empirical evidence for some of its key claims. And behavioral research stands to generate new hypotheses by taking Catholic social teaching on solidarity seriously. It is the purpose of this paper to facilitate this cross-fertilization.

2. (Near) Tautologies

A rose is a rose is a rose, as Gertrude Stein famously put it. Some Catholic social teaching comes close:

When interdependence becomes recognized in this way, the correlative response as a moral and social attitude, as a ‚virtue,‘ is solidarity.¹

Solidarity is a precept of „moral theology“.² It follows from a „sense of moral responsibility“.³ It counteracts „that desire for profit and that thirst for power“.⁴

3. Utilitarian Interpretations

Seemingly equally vague statements are already more contained. Solidarity implies the “opposed attitude: a commitment to the good of one's neighbor“.⁵ This suggests a utilitarian interpretation. Solidarity matters (be that normatively or descriptively) since some beneficiaries are better off, and the increase in terms of well-being is caused by acts that are motivated by solidarity. From this perspective, private property is „under a social mortgage“.⁶

Now behavioral and experimental research are in business. Experiments have literally hundreds of times tested the following very simple situation, which is referred to as the dictator game: two participants are randomly matched. One is randomly assigned the active role. Another is assigned the passive role. The participant in the active role receives an endowment. She is free to keep the endowment, or to share any fraction with the passive participant. A substantial minority (36.11 %) indeed keep all the money (Figure 1 Right Panel). Yet most participants share a substantial fraction. On average they give 28.35% of their endowment to the passive participant (Figure 1 Left Panel).⁷

1 Sollicitudo Rei Socialis, 29.

2 Id. 33.

3 Id. 30.

4 Id.

5 Id.

6 Id. 34.

7 For composition of the sample(s), and the methodology of the meta-study see Christoph Engel, 'Dictator Games. A Meta-Study' (2011) 14 *Experimental Economics* 583.

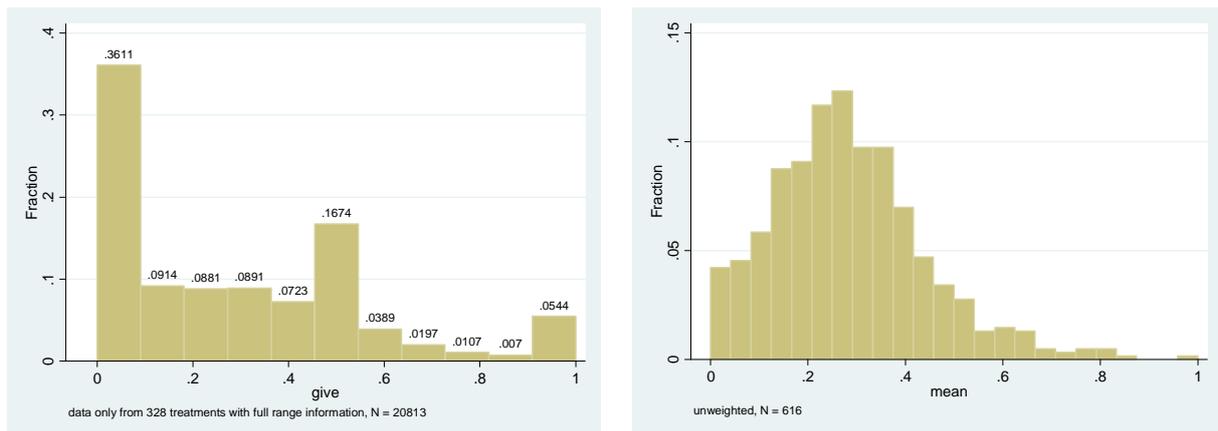


Figure 1
Dictator Game Giving
 left panel: individual choices
 right panel: mean choice per experimental treatment

This speaks against the average participant being plain selfish. It seems that the “desire for profit and that thirst for power”⁸ have limits. Typical participants seem to have some „sense of moral responsibility“.⁹ This is all the more remarkable since donor and recipient are typically completely anonymous. The donor is not even remunerated by the recipient learning who was her benefactor.

But what exactly drives these choices? The easiest interpretation is the most involved. If an individual is purely altruistic, she cares about other individuals’ well-being - period. If this held, individuals should give the same amount in the following two situations:

The experimenter gives an individual power to decide upon the allocation of 40 units of money.

- (1) For any unit they keep for themselves, they earn 3 units. For any unit they give to an anonymous passive participant, this participant earns 1 unit.
- (2) For any unit they keep for themselves, they earn 1 unit. For any unit they give to an anonymous passive participant, this participant earns 3 units.

In both situations, they lose the money themselves, and the other individual is better off. But in the former situation, participants on average only give 8 units, while they give 12.8 units in the latter situation.¹⁰ Generosity is sensitive to price. “Pure altruism” is not a good explanation for such behavior.

Experimenters have also manipulated another parameter: the endowment of the potential recipient. In the standard setting, the recipient has nothing. Figure 2 compares this with settings

8 Sollicitudo Rei Socialis, 30.

9 Id.

10 James Andreoni and John Miller, 'Giving According to GARP. An Experimental Test of the Consistency of Preferences for Altruism' (2002) 70 *Econometrica* 737.

where the recipient was less poor (expressed in percent of the dictator's endowment). The more the recipient has already, the less she gets.¹¹

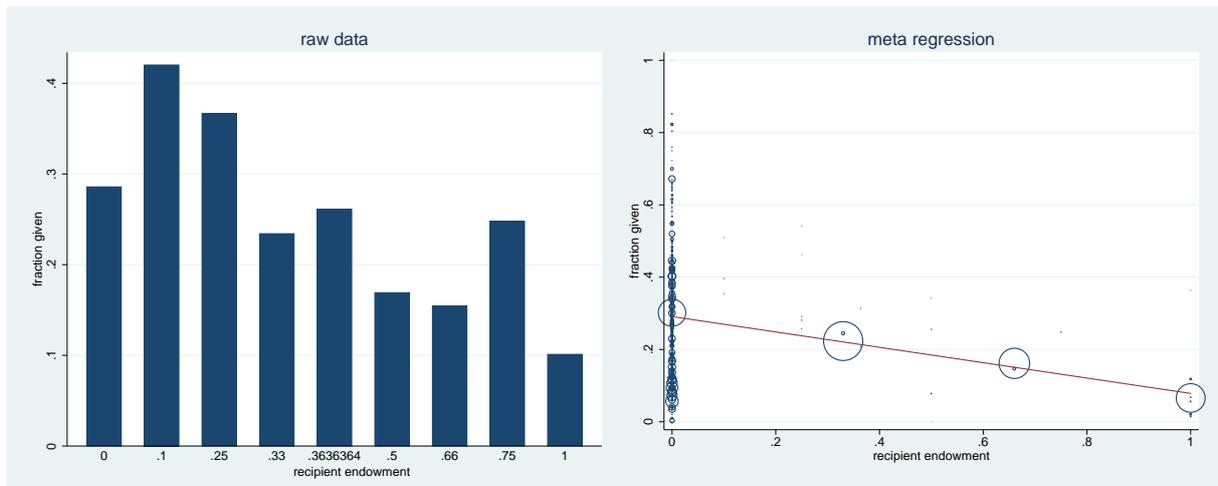


Figure 2
Effect of Recipient Endowment on Dictator Giving

left panel: x-axis: recipient endowment as a fraction of dictator endowment; y-axis: mean fraction of dictator endowment given

right panel: same x-axis; y-axis: mean fraction of dictator endowment given per experiment, bubble size indicates precision

These findings are typically rationalized with sensitivity towards relative well-being. The donor is averse to “advantageous inequity”.¹² The more the dictator’s own payoff exceeds the recipient’s payoff, the more she feels uneasy. Hence if the recipient has nothing, the dictator gives away half of her endowment. This is indeed what is frequently observed.¹³ And this resonates with demands made in Catholic social teaching. It deplores the “injustice of the poor distribution of the goods and services”,¹⁴ calls for „fundamental equality“,¹⁵ and stresses the „points of contact between solidarity and charity“.¹⁶

Yet Catholic social teaching has an additional focus. The alternative reading is potentially more demanding. The Encyclical *Sollicitudo Rei Socialis* admonishes not to neglect the “multitudes of the hungry, the needy, the homeless, those without medical care and, above all, those without hope of a better future”.¹⁷ Individuals „should feel responsible for the weaker and be ready to share with them all they possess“,¹⁸ for those who „do not succeed in realiz-

11 Engel, 'Dictator Games. A Meta-Study'.

12 Ernst Fehr and Klaus M. Schmidt, 'A Theory of Fairness, Competition, and Cooperation' (1999) 114 *Quarterly Journal of Economics* 817; Gary E. Bolton and Axel Ockenfels, 'ERC: A Theory of Equity, Reciprocity and Competition' (2000) 90 *American Economic Review* 166.

13 James Andreoni and B. Douglas Bernheim, 'Social Image and the 50-50 Norm. A Theoretical and Experimental Analysis of Audience Effects' (2009) 77 *Econometrica* 1607. Also see Figure 1.

14 *Sollicitudo Rei Socialis*, 20.

15 Id. 25.

16 Id. 31.

17 *Sollicitudo Rei Socialis*, 34.

18 Id. 30.

ing their basic human vocation because they are deprived of essential goods“.¹⁹ This can be interpreted as respect for the fairness norm of need.²⁰

The evidence from dictator games is in line with this motive as well. Experimenters have made the recipient deserving, most frequently through replacing the anonymous member from the same experimental population by a charity. This has a profound effect on dictator giving (Figure 3).

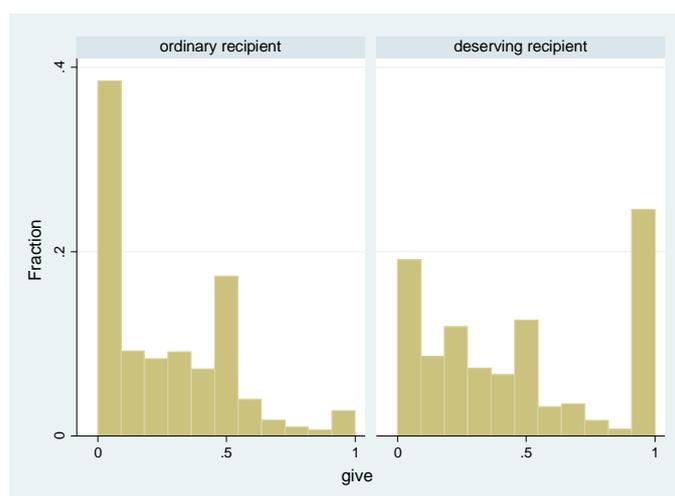


Figure 3
Effect of Deservingness on Dictator Giving
 x-axis: fraction of dictator endowment; y-axis: frequency of choice in sample

The following finding is also consistent with respect for the needy. Experimenters have manipulated the social proximity of the recipient. The standard recipient is an anonymous member of the same experimental population, usually students from the same university. Experimenters have replaced the recipient by a direct friend, or the friend of a friend, or the friend of the friend of a friend,²¹ or they have asked for donations to anonymous members of a distinct other group.²² Statistically one even finds that the amount given is the higher the higher social distance.²³ As one immediately sees when inspecting Figure 4, this is however a statistical artifact. It results from the fact that the large majority of dictator games have been done with student participants from the same subject pool.²⁴ In those experiments, other factors have

19 Id. 20.

20 On the competition between alternative definitions of fairness see James Konow, 'Which is the Fairest One of All? A Positive Analysis of Justice Theories' (2003) 41 *Journal of Economic Literature* 1186; James Konow, 'Mixed Feelings: Theories of and Evidence on Giving' (2010) 94 *Journal of Public Economics* 279.

21 Stephen Leider and others, *What Do We Expect from Our Friends?* (2009); Pablo Brañas-Garza and others, 'Altruism and Social Integration' (2010) 69 *Games and Economic Behavior* 249; Jacob K. Goeree and others, 'The 1/d law of Giving' (2010) 2 *American Economic Journal: Microeconomics* 183.

22 Coded as 0, whereas members from the same experimental population are coded as 1, friends of friends of friends as 3, friends of friends as 4, direct friends as 5. 2 stands for any situation where dictators had additional information about social proximity.

23 The regression line in Figure 4 has a negative slope.

24 In the figure, they are coded as social distance of degree 1: in the typical experiment, students know they interact with other students from the same university, but otherwise anonymity is guaranteed.

been manipulated that increase generosity. But social proximity does clearly not increase giving.

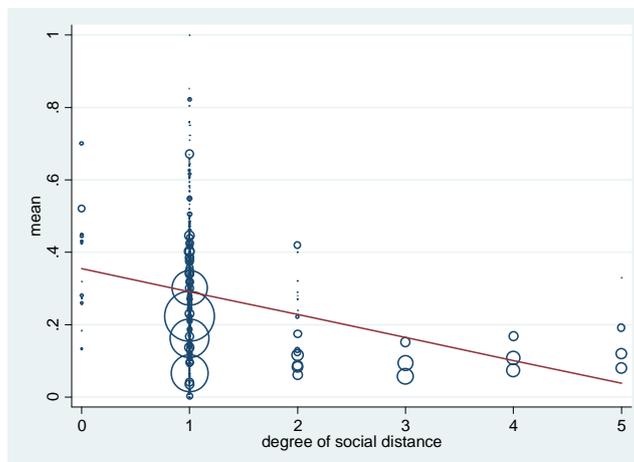


Figure 4

Effect of Social Proximity on Dictator Giving

x-axis: degree of social distance (see main text for codes 1-5)

y-axis: mean fraction of dictator endowment given, per experiment, bubble size indicates precision

One of my own experiments provides further support for the interpretation in terms of concern for the needy. The experiment had two parts. In the first part, we gave dictators 10€ and recipients 5€. As we expected, based on the evidence in Figure 2, dictators were not generous. On average, recipients only received 60 Cents. In the second part, participants kept their roles, but they were rematched to new counterparts and the experiment was repeated. Dictators received another endowment of 10€. We manipulated the information dictators received about the recipient’s endowment. Dictators gave most (1.20€ more than in the baseline) if we did not tell them anything about the recipient’s endowment. The more hints we gave dictators that, actually, the recipient had again received 5€, the less dictators gave. We conclude that dictators were concerned that “the worst comes to the worst”, and the recipient leaves the lab with nothing (from this part of the experiment). They did not want to be responsible for this outcome.²⁵

Experiments are run by researchers. The most convenient subjects for professors are students, which is why most experiments have been run with this sample. As Figure 5 shows, this choice is not innocent. For students, the most frequent choice is the selfish one: almost 40% of them keep the entire endowment. By contrast for non-students, the most prominent choice is splitting the endowment equally between the recipient and themselves.

25 Christoph Engel and Sebastian J Goerg, *If the Worst Comes to the Worst. Dictator Giving When Recipients’ Endowments are Risky* (2016).

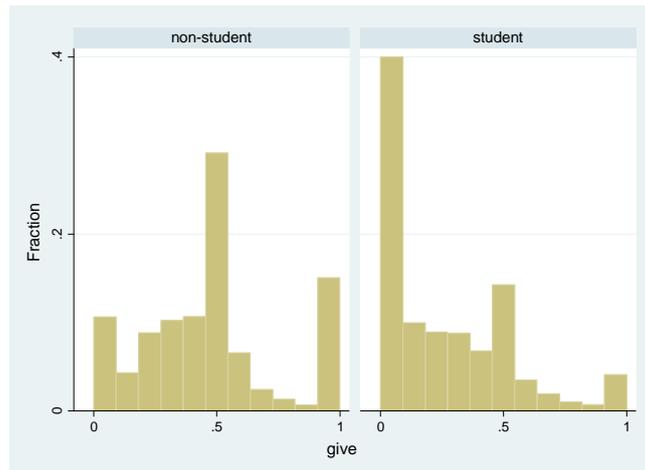


Figure 5
Dictator Giving by Students and Other Participants
 x-axis: fraction of dictator endowment; y-axis: frequency of choice in sample

Students are typically in their 20s. That too creates a bias. Students on average give 26.9% of their endowment, the middle aged give 40.7%, and the elderly give 71.2%. And as one would have expected, women give more.²⁶

In one of our own experiments, we went even further and tested prison inmates on the dictator game. This is certainly not the population where one would have expected generosity. Yet they turned out to be even more generous than students. More interestingly even: prisoners gave more to charity than to their co-prisoners, which excludes that giving could be driven by an ingroup bias among prisoners, or by fear for social sanctions after the experiment.²⁷

26 This effect is less pronounced though, and it only is present if one confines the sample to those 6 experiments that have explicitly tested for gender. In these experiments, men on average give 21.2%, while women give 27%.

27 Thorsten Chmura, Christoph Engel and Markus Englerth, 'At the Mercy of a Prisoner. Three Dictator Experiments' (2016) *** Applied Economics Letters ***.

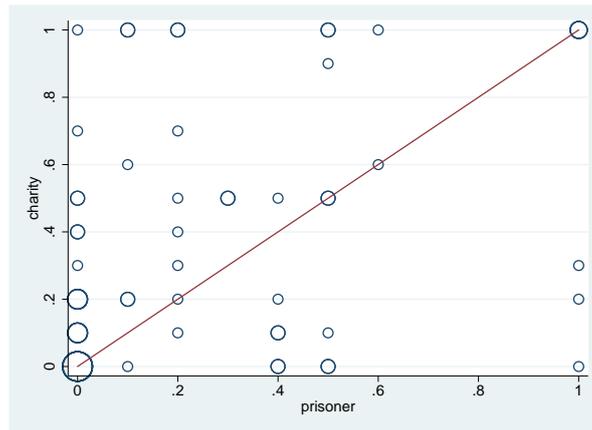


Figure 6

Dictator Giving by Prisoners to Co-Prisoners and to Charity

x-axis: fraction of dictator endowment given to other anonymous prisoner from same institution
 y-axis: fraction of dictator endowment given to charity
 bubble size indicates frequency

In an important respect, the dictator game is perfect for isolating the empirical force of the solidarity motive: it is so radically simple that many alternative explanations can be ruled out. One may in particular exclude that people actually are only willing to help others because they expect others to help them, should they need it. In the dictator game, the driving force cannot be reciprocity, which economists usually model as a motive based on reacting to good (or bad) intentions, not to (absolute or relative) outcomes.²⁸ The recipient is passive (she cannot react within the experiment) and anonymous (she cannot react outside the experiment).

But this simplicity has a price. One only sees the social benefit of solidarity. Those who need help are not left alone. But there might be a social cost. Those who pay for the help might anticipate that they will feel the urge to share, and reduce their effort in creating new wealth. Even if they derive some utility from helping others, this utility might be smaller than the utility from keeping their income for themselves. Then ultimately, the economy would be less wealthy. In the short run, those concerned about helping the needy might not care. In the long run however, the needy might suffer as well. This argument even holds if one completely assumes away the sovereign state. Even if nobody can force anyone to contribute to any public project, some public projects would be provided, just because enough wealthy individuals stand to gain enough from them. For instance there would be some streets, or some medical research, or some defense against enemies. Even if one is chiefly concerned about the needy, it therefore matters whether solidarity deters productive effort in individuals with high ability, (and therefore a high prospect of earning a lot).

In a dictator game, helping the needy is completely voluntary. This is good for showing that the solidarity motive is real. But voluntary giving puts the needy at the mercy of those who

28 Gary Charness and Matthew Rabin, 'Understanding Social Preferences with Simple Tests' (2002) 117 Quarterly Journal of Economics 817; Matthew Rabin, 'Incorporating Fairness into Game Theory and Economics' (1993) 83 American Economic Review 1281.

are touched by their fate. If society cares about the living conditions of the poor, this may be insufficient. Society may want to tax those with higher income or wealth, and redistribute the proceeds to the needy. Imposing redistribution may also be desirable as a means for distributing the burden evenly. Society may deem it more just if all those who have more contribute their fair share to helping others. And society may be concerned that, otherwise, those who in principle would be willing to help will stop to do so. Experimental research suggests that this is not unlikely. Many participants are strongly averse to being the sucker.²⁹ The underlying motive can be expressed in terms of inequity aversion. Many individuals are not only averse to outperforming others. They are even more averse to being outperformed.³⁰ Often the same finding is couched in the more suggestive terms: many individuals are even more averse to being exploited by others, rather than to exploit others themselves. To the extent that this is true, imposing redistribution reduces opposition by those who, in principle, are good-natured and would be happy to help. Now in Western countries the state is sovereign. But the state is not a despot. Government receives power from the electorate. If that is the case, it is not only theoretically or morally relevant whether those who have to pay for redistribution support it. This is also relevant for practical politics. If this opposition is strong, government is unlikely to impose redistribution since it puts re-election at risk.

One of our own experiments is designed to investigate whether redistribution deters productive effort, and whether those who have to pay for it resist redistribution.³¹ Participants have to solve math problems. We first measure their ability, and then classify them in four ability classes. This is meant to reflect heterogeneous ability in the population. The graphs in Figure 7 focus on choices from participants with the highest ability. These participants know they will have to pay for redistribution. We elicit effort choices, while exogenously imposing differently intense redistribution. As the left panel shows participants with high ability indeed reduce effort if a higher percentage of their earned income is taxed away and used for redistribution. However the deterrent effect is relatively mild. While they on average solve 31.25 math problems with no redistribution, with imposed redistribution of 45%, they still solve 25.94 problems. The right panel is even more interesting. We have made it increasingly hard to solve these problems. Now the dependent variable is a preference for redistribution. The preference of individuals with high ability for redistribution monotonically increases in the difficulty of the task. As earning an income by one's own labor becomes more difficult, those

29 The point has been made most forcefully in dilemma games. In such a game, collectively all are best off if they act in one way (e.g. contribute a lot to a joint project). But individually each participant is best off if all others do while she freerides on their efforts (and contributes nothing to the joint project, in the example). If they experience such free-riding, individuals stop acting in a socially desirable way themselves. This is why socially desirable behavior erodes over time. For a summary of this experimental literature see Jennifer Zelmer, 'Linear Public Goods. A Meta-Analysis' (2003) 6 *Experimental Economics* 299; Ananish Chaudhuri, 'Sustaining Cooperation in Laboratory Public Goods Experiments. A Selective Survey of the Literature' (2011) 14 *Experimental Economics* 47.

30 See again the canonical model by Fehr and Schmidt, 'A Theory of Fairness, Competition, and Cooperation'.

31 Claudia M. Buch and Christoph Engel, *Effort and Redistribution: Better Cousins Than One Might Have Thought* (Max Planck Institute for Research on Collective Goods 2012) For a survey of redistribution experiments see Franziska Tausch, Jan Potters and Arno Riedl, 'Preferences for Redistribution and Pensions. What Can We Learn from Experiments?' (2013) 12 *Journal of Pension Economics and Finance* 298.

who have to pay for it increasingly support redistribution. However the desired redistribution rate remains modest (8.52% of earned income) even when problems are difficult to solve.

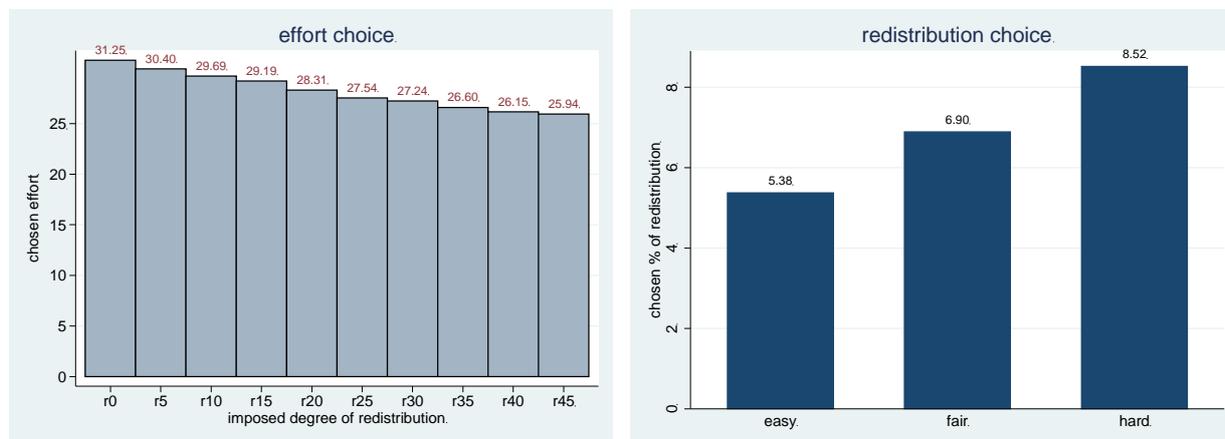


Figure 7

Effort and Redistribution Choices of Participants with High Ability

data from individuals only in highest ability quartile

left panel: x-axis: degree of exogenously imposed redistribution, in % of earned income

y-axis: chosen effort (number of math problems individuals commit to solve)

right panel: x-axis: "easy": find the one pair of numbers that add up to 10 in a table of size 2x2;

"fair": table of size 3x3; "hard": table of size 4x4

y-axis: chosen percent of redistribution

4. Identity Utility and Deontological Concerns

Catholic social teaching is not only based on utilitarian arguments. It also raises deontological concerns.³² "Members recognize one another as persons".³³ „Awareness of the value of the rights of all and of each person [...] implies a lively awareness of the need to respect the right of every individual to the full use of the benefits offered by science and technology“³⁴. This follows from the „virtues which favor togetherness“.³⁵

These claims resonate with economic models of "identity utility".³⁶ In one of our experiments, we have put these claims to the test. We used a public good game, which is a bit more involved than the dictator game. This is another tried and tested tool of experimental economics.³⁷ Participants are randomly matched to groups of four. They have a joint project. If all

32 On the distinction of deontological and utilitarian normative thinking see Eyal Zamir and Barak Medina, *Law, Economics, and Morality* (Oxford University Press 2011).

33 *Sollicitudo Rei Socialis*, 30.

34 *Id.* 25.

35 *Id.* 31.

36 George A. Akerlof and Rachel E. Kranton, 'Economics and Identity' (2000) 115 *Quarterly Journal of Economics* 715; Roland Bénabou and Jean Tirole, 'Identity, Morals, and Taboos. Beliefs as Assets' (2011) 126 *Quarterly Journal of Economics* 805; Esteban Klor and Moses Shayo, 'Social Identity and Preferences Over Redistribution' (2010) 94 *Journal of Public Economics* 269.

37 For surveys see John O. Ledyard, 'Public Goods. A Survey of Experimental Research' in J.H. Kagel and A.E. Roth (eds), *The Handbook of Experimental Economics* (The Handbook of Experimental Economics,

maximally contribute to this project, the group is best off. But each group member has a higher payoff if she keeps her endowment for herself. There is a conflict between selfishness and the common good. Our manipulation was introspection. After each period of the game, we asked each participant to state (a) what they thought other group members thought they would contribute; (b) which contribution they thought should be optimally made; (c) which contribution they thought should be minimally made. We made it clear that no other group member would ever learn their statements.³⁸ Descriptively, all forms of introspection increased contributions, compared with a baseline where we did not ask for any statement (Figure 8). Yet the only significant difference was between the baseline and the final treatment (c). Arguably, all treatments make identity salient. They shift the focus to the fact that the individual is a member of a group, and that group members have descriptive (a) or normative (b and c) expectations. Apparently the effect of elaborating social identity only has a sufficiently strong effect on behavior if individuals translate this into a norm they feel committed to (c).

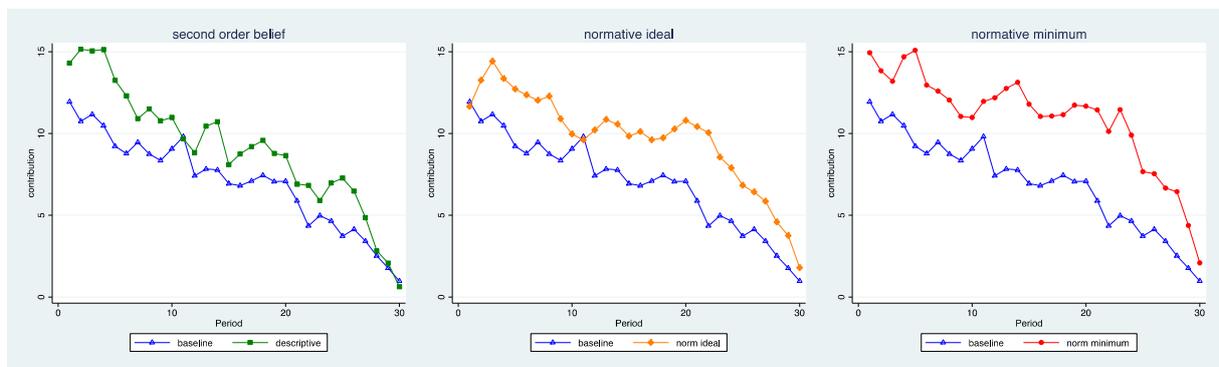


Figure 8
Public Good with Elicitation of Subjective Norms
 x-axis: period in a game with announced 30 repetitions
 y-axis: mean number of 20 tokens invested in joint project

Linking solidarity to the provision of common goods also fits Catholic social teaching. It stresses the “firm and persevering determination to commit oneself to the common good”,³⁹ and speaks of „solidarity, based upon the principle that the goods of creation are meant for all“.⁴⁰ Testing such radically deontological motives experimentally is the natural next step in this endeavor, but we must still wait for these tests to be run.

Princeton University Press 1995); Zelmer, 'Linear Public Goods. A Meta-Analysis'; Chaudhuri, 'Sustaining Cooperation in Laboratory Public Goods Experiments. A Selective Survey of the Literature'.
 38 Christoph Engel and Michael Kurschilgen, *The Jurisdiction of the Man Within. Introspection, Identity, and Cooperation in a Public Good Experiment* (2015).
 39 Sollicitudo Rei Socialis, 29.
 40 Id. 30.

5. Too Good to be True?

All the foregoing suggests that the solidarity motive is a solid asset on which human society can build. It seems that, essentially, humans are good-natured. They are prepared to help those in need. Institutional intervention can be very soft-handed. The occasional gentle reminder may already do the trick.⁴¹ Doesn't this sound too good to be true?

There is indeed a considerable amount of evidence tainting the picture. Take the following finding: in the baseline the standard dictator game was played with student subjects. Dictators and recipients received a show up fee of 4£. Dictators were additionally given an endowment of 7£. As the left panel of Figure 9 shows, they were rather generous towards the recipients. More than a quarter of dictators gave the passive recipient half of their endowment. In the treatment, dictators had the possibility to take at most half of recipients' show up fees. As the right panel of Figure 9 shows, this became the most prominent choice. Even participants who were still willing to share part of their endowment gave less once they had a chance to take money from the recipient.⁴²

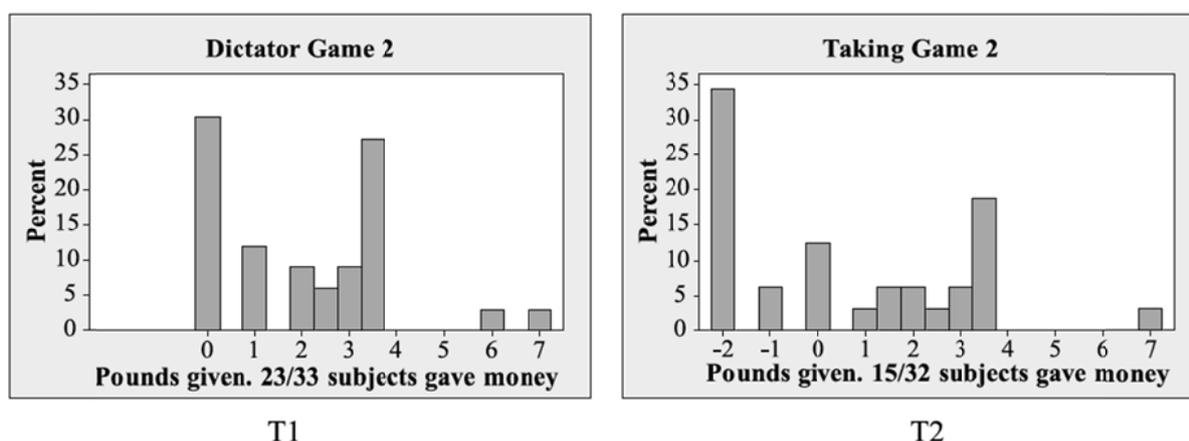


Figure 9
Dictator Giving When Taking is Possible

x-axis: how many £ of a 7£ endowment does dictator give to passive recipient?
y-axis: % of dictators making this choice

One of our own experiments cast an even more skeptical light.⁴³ A stealing game is a dictator game in the negative domain. Here the active participant may take money from the passive participant. We have played this game, but added punishment. Punishment was stochastic though. We had three treatments. In the “indifferent” treatment, the probability of being punished, and the size of the sanction, were such that a participant who maximizes her expected payoff is indifferent between stealing and not stealing any money from the passive participant. In this condition, participants on average took almost half of the passive player's en-

41 See the famous book by Richard Thaler and Cass R. Sunstein, *Nudge. Improving Decisions about Health, Wealth, and Happiness* (Yale University Press 2008).

42 Nicholas Bardsley, 'Dictator Game Giving. Altruism or Artefact?' (2008) 11 *Experimental Economics* 122.

43 Christoph Engel and Daniel Nagin, 'Who is Afraid of the Stick? Experimentally Testing the Deterrent Effect of Sanction Certainty' (2015) 2 *Review of Behavioral Economics* 405.

dowment of 20 tokens (9.81). If we made stealing individually profitable, they on average even stole 12.75 tokens. Only 6 of 48 participants in 8 repetitions never took anything. Most surprising is the left panel of Figure 10. In this condition, the expected value of the sanction was higher than the expected value of stealing. A “rational” person should not steal, just because this is a bad deal. Yet we still find that the average stolen amount is 6.28 tokens. Only 21 of 48 participants never stole anything.

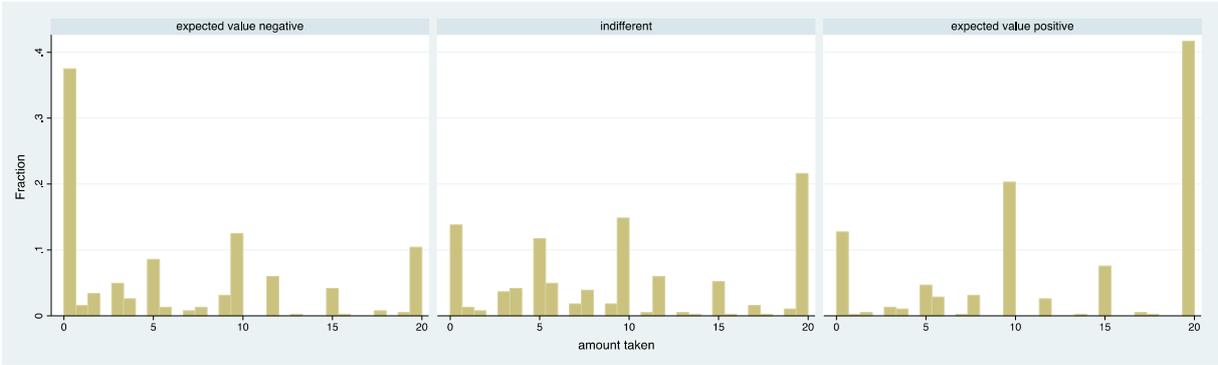


Figure 10
Stealing Game
 x-axis: number of tokens (from a total of 20) taken from passive player
 y-axis: fraction of dictators making this choice

Further skeptical news comes from a dictator game that gave dictators the possibility to opt out. If they chose “not to participate”, they would keep the dictator’s endowment, and the recipient would never learn that she was on the passive side of a dictator game. More than 70% of participants took this option, and then kept everything (Figure 11).⁴⁴

44 Edward P Lazear, Ulrike Malmendier and Roberto A Weber, 'Sorting in Experiments with Application to Social Preferences' (2012) 4 American Economic Journal: Applied Economics 136. This is data from Barcelona. The authors replicated their experiment in Berkeley, where 50% opted out.

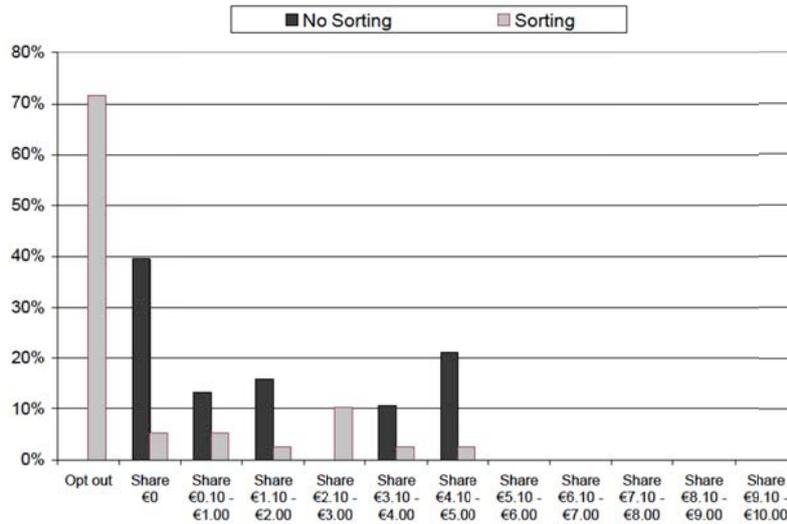


Figure 11
Dictator Game with Possibility for Dictators to Opt Out

x-axis: dictator choice (share 0€: dictators reveal game, but do not share anything)
y-axis: % of dictators making that choice

black bars: recipients knew the game; grey bars: dictators had the option not to reveal the game to the recipient

The authors even pushed the analysis one step further and “subsidized” that dictators let recipients know that they participated in a dictator game. As Figure 12 shows, dictators were sensitive to the subsidy. If the subsidy is as large as 100% (the dictator's endowment doubles), all their participants were happy to reveal the game to recipients. But even then, they would on average only be willing to share 45.3% of the original endowment, or 22.8% of the new endowment (including the subsidy), including the subsidy. The data can also be interpreted the following way: by paying the subsidy, experimenters introduced a price for not revealing the structure of the game to the potential recipient. If this subsidy was small (5% of the original endowment), 43% of participants were willing to pay this price if, after the structure of the game was revealed, their identity would still remain disclosed (left part of the panel). If the subsidy was 10% of the original endowment, the experimenters compared this choice under two conditions: if anonymity was preserved, and if the dictator’s identity was revealed as soon as the structure of the game became known (right part of the panel). Anonymity had a profound effect. If they could still hide behind the screen of anonymity, 74% of all dictators chose to reveal the structure of the game. If, however, revelation included their identity, 42% found it preferable to keep the original 10€ rather than accept revelation and receive an endowment of 11€

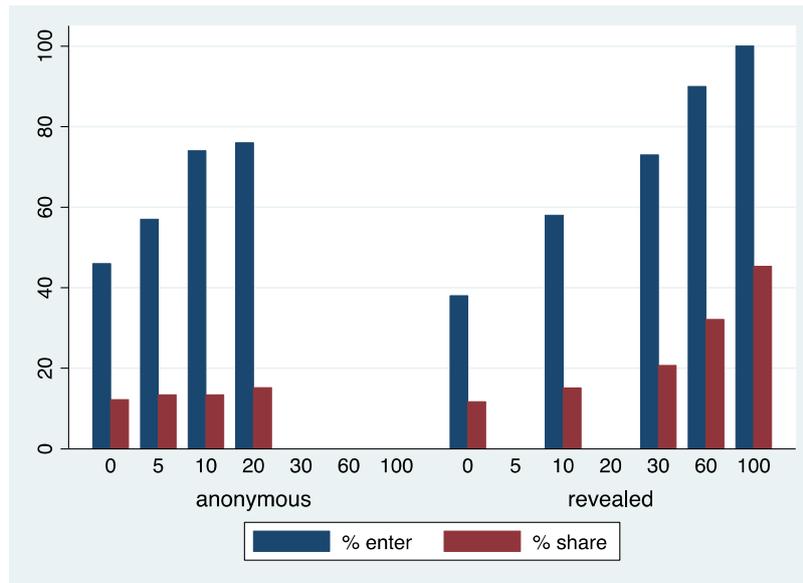


Figure 12
Dictator Game with Possibility for Dictators to Opt Out and Opt In Subsidy
 x-axis: subsidy for revealing game to recipient, in % of dictator endowment in case she does not reveal
 “anonymous”: in case the game is revealed, recipient does not learn dictator identity
 “revealed”: in case the game is revealed, recipient also learns dictator identity
 y-axis: blue bars: % of dictators making that choice; red bars: % of endowment shared by those dictators who choose to reveal the game

The authors who had first found the effect dubbed it "moral wiggle room".⁴⁵ Dictators are more likely to be selfish if they have a chance to hide behind the veil of uncertainty. This for instance is the case if there is a small probability that the less selfish choice does not increase the recipient’s payoff; if the poor outcome for the recipient only obtains provided a second dictator also behaves selfishly; if the dictator's choice is with a small probability overridden by chance.

A final study is most sobering.⁴⁶ The experiment was implemented at Las Vegas, at a bus stop not far away from the major casinos. Participants did not know they participated in an experiment. They were singled out while waiting alone at the bus stop. A first confederate of the experimenter passed by and talked on his cell phone. Then the second confederate arrived and was seemingly in a hurry to reach the airport. He told the participant: “I still have a few casino chips which I did not have time to cash in. You can take them”. The critical sentence followed: “If you wish you can share some of them with that guy over there” (i.e. the first confederate). Not a single one of the 90 participants shared anything with the confederate.

45 Jason Dana, Roberto A Weber and Jason Xi Kuang, 'Exploiting Moral Wiggle Room. Experiments Demonstrating an Illusory Preference for Fairness' (2007) 33 *Economic Theory* 67.

46 Jeffrey Winking and Nicholas Mizer, 'Natural-field Dictator Game Shows No Altruistic Giving' (2013) 34 *Evolution and Human Behavior* 288.

6. Solidarity Needs Institutional Support

The Is is not the Ought. Every normative theorist is wary not to commit the naturalistic fallacy.⁴⁷ Had experimental evidence shown that individuals are unequivocally socially minded, normative theorists, and Catholic social teaching in particular, would not be out of business. It would still be relevant to trace back the moral request to exhibit solidarity with other humans to its conceptual foundations. Moral theology is not bound by the empirics of morality.

This is, however, not to say that empirical evidence about the solidarity motive is irrelevant for Catholic social teaching. Typical experiments have been run with student subjects in Western universities. Even if the typical student at these universities is not necessarily Christian, let alone Catholic, they have grown up in cultural contexts that have been profoundly shaped by a Christian past and present. Christian religions do not only support solidarity. Christian theology expects its members to exhibit solidarity. Selfishness is sinful. The experimental evidence can thus be read as (of course imperfect) information about the success, and the failure, of attempts at educating the population to show solidarity. The experimental evidence thus serves a backward looking purpose. It implicitly evaluates the effectiveness of teaching solidarity.

The evidence also serves a forward-looking purpose. The enterprise is not called Catholic social theorizing. It is called Catholic social teaching. Interest not only lies in consistently deriving the norm of solidarity from Catholic first principles. While normative in nature, Catholic social teaching serves a practical purpose. It is meant to guide the faithful in their actions. Those who teach others how to be a good Christian shall learn what this implies when others are in need of help. They shall formulate appropriate behavioral rules, and they shall shape appropriate attitudes. The practical arm of Catholic social teaching cares about effectiveness. If experimental evidence had shown that solidarity is a robust human universal, teaching efforts could concentrate on other matters.

Now this is not what the evidence shows. It does, however, also not show the opposite. In hundreds of experiments, anonymous dictators have shared substantial fractions of their endowments with anonymous recipients they knew not to have an endowment. In richer games, many participants also show behavior that is not plainly selfish. In many experiments such behavior can also not be rationalized by a longer shadow of the future. Acting in a socially responsible manner now is not just an investment in future exploitation.⁴⁸ On average, humans seem to show solidarity, but solidarity is fragile.

Actually the story is even more complicated. Very few behavioral effects are near universal. The willingness to show solidarity, even if this is unlikely or impossible to be individually profitable, is certainly not universal. This willingness is heterogeneous. The distribution of

47 William K Frankena, 'The Naturalistic Fallacy' (1939) 48 *Mind* 464.

48 On the theoretical background see David M. Kreps and others, 'Rational Cooperation in the Finitely Repeated Prisoners' Dilemma' (1982) 27 *J Econ Theory* 245.

dictator choices in Figure 1 illustrates the point. There is not only variance. The heterogeneity is patterned. A solid minority are plain selfish. People who give more to the passive participant than to themselves are rare. The majority give something, but at most half of what they have.

Consequently, for solidarity to be practical, two challenges must be parried. Those who are potentially good-natured, but tempted to be selfish, need support. And a solid body of experimental evidence shows that people hate being the sucker.⁴⁹ Of course the Bible teaches: Whenever someone slaps you in the face you give the other cheek. However if Catholic social teaching cares about effective solidarity, teaching this principle is a long shot. It might be wiser to check out the work by Nobel Prize winner Elinor Ostrom. Based on decades of fieldwork, she had formulated five principles for the successful provision of common goods; arguably solidarity is a common good. The two principles of relevance at this point are vigilance and mild sanctions.⁵⁰ Those who are essentially willing to show solidarity may need an occasional nudge themselves. And they will quite likely need a sufficient degree of confidence in not being exploited if they follow the urge for solidarity.

The bottom line thus is: human nature is not bleak. Catholic social teaching is not on mission impossible if it calls for solidarity. Yet solidarity is also not to be taken for granted. It needs institutional backing. In providing useful nudges, and sufficient confidence, the church has an important role to play.

49 See again „aversion to disadvantageous inequity“, Fehr and Schmidt, 'A Theory of Fairness, Competition, and Cooperation'.

50 Elinor Ostrom, *Governing the Commons. The Evolution of Institutions for Collective Action* (The Political economy of institutions and decisions, Cambridge University Press 1990).