

Lange, Andreas; Schwirplies, Claudia

Working Paper

Bargaining With Charitable Promises: True Preferences and Strategic Behavior

CESifo Working Paper, No. 9129

Provided in Cooperation with:

Ifo Institute – Leibniz Institute for Economic Research at the University of Munich

Suggested Citation: Lange, Andreas; Schwirplies, Claudia (2021) : Bargaining With Charitable Promises: True Preferences and Strategic Behavior, CESifo Working Paper, No. 9129, Center for Economic Studies and Ifo Institute (CESifo), Munich

This Version is available at:

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Andreas Lange, Claudia Schwirplies

Impressum:

CESifo Working Papers

ISSN 2364-1428 (electronic version)

Publisher and distributor: Munich Society for the Promotion of Economic Research - CESifo GmbH

The international platform of Ludwigs-Maximilians University's Center for Economic Studies and the ifo Institute

Poschingerstr. 5, 81679 Munich, Germany

Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de

Editor: Clemens Fuest

<https://www.cesifo.org/en/wp>

An electronic version of the paper may be downloaded

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Bargaining With Charitable Promises: True Preferences and Strategic Behavior

Abstract

We report experimental findings on the role of charitable promises in bargaining settings. We vary the enforceability of such promises within variants of ultimatum games where the proposer suggest a split between himself, the responder and a charitable donation. By renegeing on initial pledges, dishonest proposers can turn the bargaining power to their advantage. Providing ex post information on actual donations while leaving the contract incomplete outperforms a complete contract where proposers cannot renege on their charitable promises. The ex post information allows proposers to improve their (self-)image by voluntarily giving more than pledged and thus proving that the charitable pledge was not used for strategic reasons. We identify proposer competition as another (surprising) mechanism that partly eliminates cheating among accepted offers. We relate our findings to calls for information provision on actual CSR activities within the management literature.

JEL-Codes: C900, D640, H410, L310.

Keywords: bundling, charity, public good, donation pledges, cheating, prosocial ultimatum game, experiment.

Andreas Lange
Department of Economics
University of Hamburg
Von-Melle-Park 5
Germany – 20146 Hamburg
andreas.lange@uni-hamburg.de

*Claudia Schwirplies**
Department of Economics
University of Hamburg
Von-Melle-Park 5
Germany – 20146 Hamburg
claudia.schwirplies@uni-hamburg.de

*corresponding author

June 5, 2021

1 Introduction

The market for green and social products is rapidly expanding (Whelan & Kronthal-Sacco, 2019). Many firms market such product characteristics or directly link their products and services with contributions to public goods or charities. Amazon’s smile program, for example, gives 0.5% of proceeds from customer purchases to a charity of their choice. Green energy tariffs combine the purchase of electricity with the provider’s commitment to support the development of renewable energies. Other retailers plant trees for every product sold or guarantee the compliance with the standards of fair trade or organic farming. Conversely, charitable organizations appear to seize such opportunities to increase their funds and promote the bundling initiatives by companies (e.g., American Red Cross, 2017).

There is a substantial economic literature on reasons for such bundling of private and public goods (e.g., Bagnoli & Watts, 2003; Besley & Ghatak, 2005; Conrad, 2005; Kotchen, 2005, 2006, 2009; Besley & Ghatak, 2017; Aghion et al., 2020).¹ This literature largely appeals to product differentiation to cater consumers’ interests, yet increasingly also considers intrinsic motivation within firms (e.g., Besley & Ghatak, 2007; Morgan & Tumlinson, 2019; Chan & Lange, 2021).² In most of the theoretical literature, the bundling with charitable donations or prosocial purposes is assumed to be perfectly credible.

Yet, firms may not follow through with their prosocial promises. Several examples of fraud with charitable donations exist.³ Delmas & Burbano (2011), for example, identify an increasing extent of greenwashing, i.e. of firms conveying a false or misleading impression of environmental characteristics of their products.⁴ Laufer (2003) and Sprinkle & Maines (2010) describe challenges in monitoring and accounting practices of CSR.⁵ Since greenwashing also affects consumer choices (e.g., Szabo & Webster, 2020), addressing green or social concerns can be viewed as a strategic endeavor to generate revenue, but is also prone to misleading or incorrect statements.

In this paper, we report experimental findings with students and MTurk workers to contribute to a better understanding of behavioral motivations for bundling activities in the marketplace. Our experimental design builds on variants of ultimatum games

¹The impact of bundling is unclear: Kotchen (2006) and Besley & Ghatak (2007) find that bundling will reach the same level of public good provision as voluntary contributions by consumers. In contrast, Lai et al. (2017) identify conditions under which bundling increases profits and – at the same time – can benefit the charitable cause.

²Similarly, prosocial incentives and missions have been shown to be effective in motivating workers and thus consistent with profit maximization (an excellent overview and discussion of this literature are, among others, provided by Cassar (2018) and Cassar & Meier (2020)).

³A few prominent examples are listed in <https://www.charitywatch.org/charity-donating-articles/charitywatch-hall-of-shame>.

⁴The Economist (2016), reporting the findings from an academic study on behalf of a shoe brand, states “Shoe brands like TOMS and Skechers tease in customers by matching purchases with a donation of a pair of shoes to a child in need,” but the academics found that “handing out the free shoes had no effect on overall shoelessness, shoe ownership (older shoes were presumably thrown away), general health, foot health or self-esteem.”

⁵The U.S. Federal Trade Commission (FTC) actually gives several illustrations of greenwashing, thereby providing voluntary guidelines for green marketing claims that are not deceptive. See <https://www.ftc.gov/enforcement/rules/rulemaking-regulatory-reform-proceedings/green-guides>.

that abstractly represent the market process of firms making take-it-or-leave-it offers to potential consumers. Our main workhorse is a “prosocial ultimatum game” (PSUG), where the proposer (firm) can suggest a split of surplus between himself, the responder (consumer), and a charitable donation. Payments are only made if the responder accepts. While related to the three player ultimatum game introduced by Güth et al. (2007), a novel feature is the passive charity as a third player.

Importantly, we allow for cheating in further treatments, that is, the proposer may not follow through with the charitable promise after the offer is accepted by the responder. Instead she may increase her own payoff at the expense of the donation. Charitable promises in our cheating environments can thus be viewed as non-enforceable pledges.⁶ Motivated by discussions on better monitoring of CSR activities, we consider how cheating, i.e. a misleading use of appealing to charitable purposes, can be alleviated by information devices or is affected by competitive pressure. Our set of treatments allows to disentangle several motives for bundling discussed in the literature (e.g., Bénabou & Tirole, 2010): first, bundling might simply reflect the social preferences of board or management members of the firm. Second, bundling may serve as a strategic instrument to generate acceptance and thus may be prone to fraud, i.e. not following through with charitable promises.

Our work thus relates to the significant literature on dishonest behavior that has recently evolved (e.g., Gneezy, 2005; Fischbacher & Föllmi-Heusi, 2013; Houser et al., 2012; Pascual-Ezama et al., 2013; Cappelen et al., 2013; Cohn et al., 2014). Less is known on dishonest behavior related to charitable giving. Muñoz-Izquierdo et al. (2019) show that cheating behavior depends on whether it benefits the own payoff or donations given to charity, while Cojoc & Stoian (2014) conclude that dishonest behavior can increase when it serves a charitable purpose. Similarly, Maggian (2019) do not identify reduced cheating when it imposes a negative externality on charities. Rahwan et al. (2018) find a connection between morality perceptions (linked to cheating tasks) and donation behavior. Yet, none of these studies investigate how charitable or prosocial promises are used in bargaining contexts. Closest to our treatments is Testa & D’Amato (2018) who also introduce charitable donations into an ultimatum game, but do not allow for cheating which is the focus of this study. An allocation of surplus between two persons and charity is also considered by Khadjavi (2017) who finds a positive effect of providing options for voluntary charitable donations on tipping levels.

In our main treatments, we vary the enforceability of charitable promises in the PSUG. The proposed split between proposer, responder, and charity is automatically implemented in the base treatment. Relative to a standard ultimatum game (UG), we see substantial use of the donation channel. Allowing for cheating (PSUGcheat), i.e. for the proposer to renege on the charitable pledge, we observe that significantly more participants make positive pledges, yet eventually do not implement the charitable promise. These dishonest

⁶Andreoni & Serra-Garcia (2021) show a different mechanism how charitable pledges can benefit charities: even if giving pledges can be renegeed upon, they can serve as an initial screening mechanism to better target potential donors.

types make much larger charitable pledges, but still largely appeal to equal payoff between them and the responder. Yet, through renegeing on their charitable offer, they turn the bargaining power to their advantage as is seen in the final allocation of payoffs. We thus find that part of the substantial use of charitable promises in our bargaining context is due to strategic considerations. A complementary prosocial dictator game (PSDG) allows us to identify actual preferences for the allocation between proposer, the (here passive) responder, and charity. Here, the share of donors is similar to the baseline PSUG treatment, thus showing that donation decisions within the ultimatum bargaining are consistent with actually underlying preferences of proposers as long as these donation pledges cannot be renegeed upon.

We then explore how charitable promises and their actual implementation respond (i) to giving responders information about the actually donated amount (PSUGinfo) and (ii) to competitive pressure in a proposer competition treatment (PSUGcomp). Providing information on actual donations ex post increases average donations relative to both cheating treatments as well as to when donation pledges are fully enforceable. We identify different mechanisms through which providing this information changes actual donations: (i) less proposers renege on their pledges. (ii) Dishonest proposers increase pledges in the information treatment as donations seem more trustworthy; they still end up donating almost nothing. (iii) A significant portion of donors gives more than promised. We interpret this as follows: on the one hand, these donors may try to avoid large donation pledges that might look suspicious. On the other hand, this behavior is consistent with (self-)signaling preferences: voluntarily going beyond the pledges proves that proposers have not used the charity bundle for strategic reasons. As a consequence, giving ex post information while allowing for cheating, i.e. leaving the contract incomplete, generates larger average donations than a complete contract where proposers cannot renege on their charitable promises.

Proposer competition (without ex post information) leaves the final donation levels unchanged, yet shifts surplus towards the responders. Cheating among the accepted offers is almost eliminated: responders decide against large donation offers (that rightfully seem incredible and would have been renegeed upon) and instead choose the offer that gives them a larger surplus. In our bargaining setting, we thus find concerns unwarranted that competition may generate less moral behavior (e.g., Falk & Szech, 2013; Cartwright & Menezes, 2014; Rigdon & D’Esterre, 2015), i.e. competition does not lead to more renegeing on charitable promises for strategic purposes.

Our findings are consistent with combinations of behavioral motivations that are prominently, yet typically separately, discussed in the literature: we provide an illustrative model which combines a variant of inequality aversion (Fehr & Schmidt, 1999) with warm-glow from donation (Andreoni, 1990). The findings in cheating conditions are consistent with image concerns by proposer who want to appear as prosocial (e.g., Bénabou & Tirole, 2006; Konow, 2000; Glazer & Konrad, 1996; Ariely et al., 2009; Dana et al., 2007). Our finding on benefits of incomplete contracts corresponds to Fehr et al. (2007), yet in a

different context.

The paper proceeds as follows: In section 2, we describe our experimental design, derive predictions in our theoretical model, and discuss the experimental procedure in detail. Section 3 presents our findings, before we conclude in section 4.

2 Experimental design

2.1 Introducing the treatments

Our main treatments are UG, PSUG, and PSUGcheat. While proposers in the ultimatum game (UG) offer a split (x^P, x^R) with $x^P + x^R = e$, payoffs materialize only if the responder accepts the offer. PSUG and PSUGcheat allow a portion of the surplus to go to charity, therefore called prosocial ultimatum game (PSUG). In PSUG, the proposer suggests (x^P, x^R, d) of payoff going to herself (x^P), the responder (x^R) and charity (d) with $x^P + x^R + d = e$. The offer can be accepted or rejected by the responder. PSUGcheat allows the proposer to deviate from the charitable pledge d *after* the responder has accepted: while the responder receives his promised share, the proposer can reallocate between herself and charity $(\hat{x}^P, x^R, \hat{d})$ with $\hat{x}^P + \hat{d} = x^P + d$. The responder thus cannot be sure whether the offered donation is actually triggered or instead amount $\hat{d} \neq d$ is donated. PSUGcheat and PSUG thereby differ regarding the enforceability of d .

The comparison of PSUG and PSUGcheat hints at the strategic use of charitable promises if proposers decide to not follow through with their charitable promise. In order to shed further light onto the strategic use of charity in bargaining situations relative to the actual preferences of the proposer, we complement these three treatments with a standard dictator (DG) and a prosocial dictator game (PSDG) that implement the payoff structure as in UG and PSUG, yet are not subject to potential rejections by the responders. The DG reveals the dictator's other-regarding preferences and the PSDG the dictator's preferences for charity relative to the other person. Both DG and PSDG are needed to identify proposer's actual social preferences absent strategic considerations.

We then turn to treatments designed to explore mechanisms to limit the extent of cheating. Charitable bundling in marketplaces sometimes comes with certification systems through which companies make the charitable contribution more credible (e.g., McWilliams, 2015). Such certification may make deviations from promised prosociality more visible and hence implement accountability for bundling firms. To move in this direction, we introduce PSUGinfo, where proposers can cheat, but the information on the actual donation amount \hat{d} is communicated to responders *ex post*.

Finally, we consider the role of competition in interaction with bundling activities. In PSUGcomp, each responder is matched with two proposers. The responder can decide to accept one of the two offers or reject both. If both offers are rejected, all three players and the charity receive a payout of zero. In case of acceptance, the selected proposer's potentially revised decision $(\hat{x}^P, x^R, \hat{d})$ is implemented, while the other proposer receives

nothing. While we are primarily interested in the interaction of cheating and competitive pressure, it is also interesting to consider the shares of surplus going to proposers vs. responders in this situation. For comparison, we finally implement a typical ultimatum game with proposer competition without charity (UGcomp).

The experimental protocol for PSUG can be found in Appendix B.

2.2 Behavioral motives

To guide our hypotheses and the later discussion of experimental results, we provide a simple behavioral model. Given the prevalence of inequality aversion in explaining behavior in dictator and ultimatum games, we use a variant of Fehr & Schmidt (1999), complemented by utility triggered through the contributions d to the public good. This utility can include both utility directly from the public good or from a warm-glow sensation (Andreoni, 1990).⁷

$$U^i = x^i - \alpha^i \max\{0, x^j - x^i\} - \beta^i \max\{0, x^i - x^j\} + \mu^i g(d) \quad (1)$$

with $0 \leq \beta^i \leq \alpha^i$, $\beta^i < 1$, and $i \in \{P, R\}$ referring to proposers and responders, respectively, and $g(\cdot)$ increasing and concave, $g(0) = 0$. In our discussion below, we complement this model by allowing for image concerns (e.g., Ariely et al., 2009; Bénabou & Tirole, 2006).

For UG, $d = 0$ is exogenously imposed, such that we expect the typical result of many proposers offering a 50:50 split (e.g., Güth, 1995), either because of own inequality aversion (if $\beta^P \geq 1/2$) or due to fears of rejections by responders (for large α^R). The donation option in PSUG could affect allocations by impacting both proposers' as well as responders' preferences: if responders gain utility from the public good, i.e. $\mu^R > 0$, an increase in d can be traded off with own payoff x^R : the offer is accepted if $x^R - \alpha^R(1 - 2x^R - d) + \mu^R g(d) \geq 0$, such that differentiation along the frontier yields $\partial x^R / \partial d = -(\alpha^R + \mu^R g'(d)) / (1 + 2\alpha^R) \leq 0$. It is noteworthy that this tradeoff is amplified by the responder's own interest in the public good, yet does not require it: even if $\mu^R = 0$, increasing d decreases x^P such that the inequality is reduced and x^R can be scaled down as well. Anticipating this trade-off between donations and x^R , the proposer could decide to bundle if this caters his own public good preferences: for $\beta^P \geq 1/2$, the proposer still voluntarily implements $x^P = x^R$ as in UG and the donation is governed by the first order condition $\mu^P g(d) \leq 0.5$ with equality if $d > 0$. For $\beta^P < 1/2$, the donation reduces the share given to the responder and the first order condition for the proposer changes to $\mu^P g'(d) \leq 1 - \beta^P + (1 - 2\beta^P) \partial x^R / \partial d < 1 - \beta^P$.⁸ The term $(1 - 2\beta^P) \partial x^R / \partial d < 0$ here reflects the strategic considerations as it only occurs due to the threat of rejection. Beyond a situation where x^R is fixed, the strategic

⁷While the donation level is decided upon by the proposer, the acceptance by the responder is required. Thus, the responder may also assign the donation partly to her decision and thus obtain a warm-glow beyond a potential utility from the public good itself. Conversely, it is unclear if the proposer's warm glow from a bundle is evaluated identically to a voluntary donation. The differential utility components are captured by potentially differing μ^P and μ^R parameters.

⁸Differentiating the utility of the proposer with respect to d , we obtain $-1 - \partial x^R / \partial d - \beta^P(-1 - 2\partial x^R / \partial d) + \mu^P g'(d) \leq 0$ which immediately can be rewritten to yield the condition above.

channel thus increases donations for individuals whose preferences do not demand an implementation of equal payoffs ($\beta^P < 1/2$). Summarizing, the use of charitable donations in PSUG vs. UG is affected both by the proposer's preference for the public good and strategic intentions to generate acceptance by the responder.

PSUGcheat enlarges the scope for these strategic considerations. It allows the proposer to try generating acceptance of an offer by pretending to give a higher share of the endowment to charity than is eventually administered. Given the derivation above, individuals with $\beta^P \geq 1/2$ would be honest and implement the suggested split. If $\beta^P < 1/2$, though, dishonesty would result and actual donations adjusted downwards to $\mu^P g'(\hat{d}) \leq 1 - \beta^P$. Taking the option of cheating into account, these dishonest $\beta^P < 1/2$ types may even increase their donation promise as they benefit from offering an even larger d as long as this is accepted. While dishonest behavior, i.e. $\hat{d} < d$, is thus a clear indication of strategic motives behind bundling, responders may anticipate this dishonest behavior and thus may be reluctant to accept specific splits. Given our linear inequality aversion model, offers with $x^R < x^P$ reveal that $\beta^P < 1/2$ and thus identify cheating intentions. We would thus expect these potentially dishonest types to pool with $\beta^P \geq 1/2$ types and offer equal splits joint with a donation. In equilibrium, their benefit from larger donation offers must be offset by a decrease in acceptance probability. That is, large offers might deem untrustworthy which may lead honest ($\beta^P > 1/2$) types to lower their donation promise. As a consequence of strategic charitable promises by dishonest types, the share of actual donors in PSUGcheat relative to PSUG is predicted to be stable, while the share of alleged donors as well as the share of equal offers can be expected to increase. However, the latter prediction depends on the linearity assumption: in a more general model, honest types are those for whom the acceptance constraint is not binding. If this is achieved through offering a large donation while allowing for (some) inequality, the share of equal splits may not necessarily increase.

We thus can summarize our main predictions:

Prediction 1 (i) *Introducing a donation option in PSUG vs. UG leaves the share of equal offers constant. The charitable bundle d is employed due to the proposer's preference, but also out of strategic motives.*

(ii) *Allowing for cheating increases the share of alleged donors and the promised donation levels, while leaving the share of actual donors and actual donations constant. Relative to honest types, dishonest types on average are predicted to make larger charitable promises.*

The comparison of PSUG and PSUGcheat thus hints at the strategic use of charitable promises. If strategic motives play a role, proposers can exploit a moral wiggle room (e.g. Dana et al., 2007), because responders cannot identify cheating intentions when they make their decision.⁹

⁹The effects of promises and lies have been addressed in the literature before. Ellingsen & Johannesson

DG and PSDG are designed to provide further evidence of the strategic considerations among proposers. Without the threat of rejection, decisions should reflect the actually underlying social preferences. Within our simple model, decisions of $\beta^P > 1/2$ types do not change, while $\beta^P < 1/2$ types give less (none) to responders and lower their donation offer in PSDG to the level observed in PSUGcheat. We thus anticipate allocations to proposer vs. responders to be less equal than in UG or PSUG and donations to potentially fall.

Yet, a donation offer in PSDG conveys a different signal than in PUSG or PSUGcheat: absent the threat of rejection, the positive donation is clearly identifiable as non-strategic. If proposers are partly motivated by image concerns (e.g., Ariely et al., 2009; Bénabou & Tirole, 2006), some proposers may even make higher donations relative to PSUG or PSUGcheat.

PSUGinfo further explores this reputation channel: by giving information on the actual donation amount \hat{d} to responders, it makes not only the actual donation more salient to the responder, but might also trigger the proposer's image concerns in two dimensions: keeping the promise or even donating more than the offered amount yields a positive (self-)image as it shows that the offer was non-strategic. Conversely, giving less than promised may trigger a negative (self-)image or shame even in a completely anonymous setting (e.g., Brocas et al., 2021). Comparing PSUGinfo and PSUGcheat, we thus expect less dishonest behavior, i.e. a larger fraction of proposers following through with the charitable promise by choosing $\hat{d} \geq d$. Given the implied higher trustworthiness of donations, donation offers and actual donations can thus be expected to increase. This does allow dishonest types to also pretend larger donation amounts, while ending up using those to shift the bargaining advantage to their favor. Due to the (self-)image effect of following through with the charitable promise by choosing $\hat{d} \geq d$, we do however predict the frequency of honest types to increase.

Prediction 2 *Providing information about actual donations in PSUGinfo increases the share of honest types ($\hat{d} \geq d$) relative to PSUGcheat. The share of actual donors, the average donation offers, as well as the implemented actual donation amounts can also be expected to increase.*

We finally turn to the competition treatment PSUGcomp. The competitive pressure can be expected to shift the surplus to the responder. Extant studies demonstrate for UG-comp that proposer competition shifts power to the responder side, such that responders on average receive more than half of the pie (e.g. Fischbacher et al., 2009). In presence of the donation channel, shifting surplus to the responder may involve positive donations,

(2004) as well as Charness & Dufwenberg (2006) allow for non-binding communication in their experiments and show that promises are always kept and increase cooperation. Irlenbusch (2006) compares binding and non-binding contracts in a trading experiment. The intensity of trade even increases with non-binding contracts which might indicate that participants use the cheap talk as reference point for their decisions. For our setting, these findings suggest that attempts to cheat might be limited.

depending on the attractiveness of the public good and the utility the responder receives from the donation. For positive donations, however, more cheating relative to PSUGcheat can result due to the reduced income of proposers. Conversely, shifting the surplus to responders may imply smaller donation levels such that the scope for cheating is reduced. Given the ambiguous predictions, we consider the investigation of the effect of competition as largely exploratory.

2.3 Experimental procedure

We implemented the experiment with two different subject pools.

An initial set of three treatments was run with students at the University of Hamburg in October and November 2016. Overall, 611 students were recruited using the software hroot Bock et al. (2014). Participants were randomly assigned to a treatment and a role and participated via an online survey created with SoSci Survey (Leiner, 2019), which sequentially collected proposer offers and responder decisions. Proposers (role A) and responders (role B) bargained over an endowment of € 20 (€ 1 ≈ \$ 1.06 at the time of the experiment) in three treatments: UG, PSUG, and PSUGcheat. The charity was a charitable project planting trees in the city of Hamburg called “my tree – my city”.¹⁰ The duration of the experiment including a survey was about 14 minutes, the earnings averaged at € 9.42 for proposers, € 8.41 for responders, and a total of € 336 was donated to charity.

Second, we implemented the full set of treatments on Amazon MTurk in August 2017 (plus additional data in the three treatments PSUG, PSUGcheat, PSUGinfo in July 2018). The procedure was exactly the same as for the student sample. This time, proposer and responder bargained over an endowment of \$ 10 and received an additional dollar for participation. As recipient of the donations, we chose unicef in order to ensure that all participants have a positive connection to the charitable purpose. Overall, 1176 people, mainly U.S. citizens, participated in our experiment.¹¹

Tables A1 and A2 in Appendix A summarize the number of subjects acting as proposers and responders in the two samples and show how characteristics balance across treatments. On MTurk, the participation lasted about 5 minutes. In the 2017 sample with 949 people, proposers earned \$ 5.14 on average, responders \$ 4.29, and a total of \$ 228 was donated on their behalf to charity. In 2018, another 227 people took part in our experiment. Here, proposers earned \$ 4.22 and responders \$ 3.88 on average. \$ 205 was donated to charity in 2018.¹²

¹⁰In PSUGcheat, we also tested another charity with the same purpose but acting more globally by planting trees all over Germany, i.e. iplantatree.org. We expected the local charity to have a confidence-building effect which increases the acceptance rates. But offers, cheating, acceptance rates, and payouts were exactly the same in the two PSUGcheat treatments. Thus, we only report the findings from one cheating treatment with the locally acting charity in Section 3, i.e. from 452 student participants.

¹¹The full experimental design included two additional treatments, which are reported in Lange & Schwirplies (2021).

¹²This amount is significantly higher compared to our first data collection. The difference is caused by participants in PSUGcheat who make higher donation offers ($p = 0.08$) and actually donate more ($p =$

3 Results

We first report the results from the experiment with students from the University of Hamburg before we discuss the findings from the non-student subject pool (MTurk) in more detail. We report the results from Mann-Whitney tests in the student sample and Mann-Whitney tests with exact statistics for the MTurk sample, which are more reliable with small sample sizes (Harris & Hardin, 2013). We report allocations as percentage shares of the € 20 and \$ 10 endowments, in order to make the findings from the student and the MTurk subject pools comparable.

3.1 Results from the students pool

Figure 1 and Tables 1 and 2 report the results from the student sample. Within the ultimatum game, we observe standard behavior: proposers on average keep 0.55 of the endowment, leaving 0.45 to the responder. 58% of proposers offer a 50:50 split. Acceptance rates are very high at 90%.

Allowing for donations in PSUG, we observe that the charity channel is indeed employed: 57% of participants chose to donate a positive amount, on average 0.16 of the tokens are offered as donation. Correspondingly, the average offer to responders (0.40) and the proposer's share (0.44) are significantly smaller than in UG. The acceptance rate is 99%. In PSUG, 75% of subjects propose a split that gives at least as much to the responder as they keep for themselves. This compares to 61% in UG ($p = 0.05$) and thus differs from Prediction 1 (i). The finding suggests that some proposers apply a different notion of equality by partly ascribing the donation to their own allocation.

In PSUGcheat, the proposed splits average at 0.45 for the proposer, 0.38 for the responder, and 0.17 for charity and are thus almost identical as in PSUG. Yet, the acceptance rate decreases to 92% which indicates suspected fraud. Indeed, this concern is warranted: while 72% of proposers offer a donation, only 47% of participants actually donate. Due to the reallocation between charity and themselves, the actual average payoff to proposers is 0.55 and donations only average at 0.07. PSUGcheat thus allows proposers to obtain the same share as in UG such that donations – on average – are financed by responders.

Among those offering a positive donation, 58% are dishonest and eventually give less than promised as reported in Table 2. These dishonest types promise a donation of 0.29, while only 0.03 actually ends up being donated. Charitable giving thus significantly differs from the donation promised (0.15) and delivered (0.18) by honest types. This also indicates how to detect cheating: the larger the promised donation, the larger the fraction that cheat. In fact, while 65% of donation offers less or equal than 0.10 (i.e. 2 out of 20) can be trusted, only 29% of larger donation offers are actually carried out.

It is noteworthy that both honest and dishonest types appeal to equality (74% or 63% 0.02) as well as PSUGinfo where actual donations were significantly higher ($p = 0.08$). We still report results from the pooled samples, but are careful with interpretations regarding donations in these two treatments.

suggesting at least as much to the responder than to themselves). Across all proposers in PSUGcheat, thus 68% suggest at least as much to the responder as to themselves, while only 43% and thus significantly less than in UG and PSUG actually implement at least equal splits.

The results from the students' sample thus are largely in line with Prediction 1 (ii): we identified substantial cheating behavior. This reflects strategic considerations, i.e. trying to generate acceptance through linking the offer with donations without having intentions to actually give to charity: while offers do not differ on average between PSUG and PSUGcheat, the final allocation does. Consequently, proposers are better off than in UG: they obtain on average a similar amount for themselves, yet may benefit from the implemented donation.

Figure 1: Proposer offers (student sample)

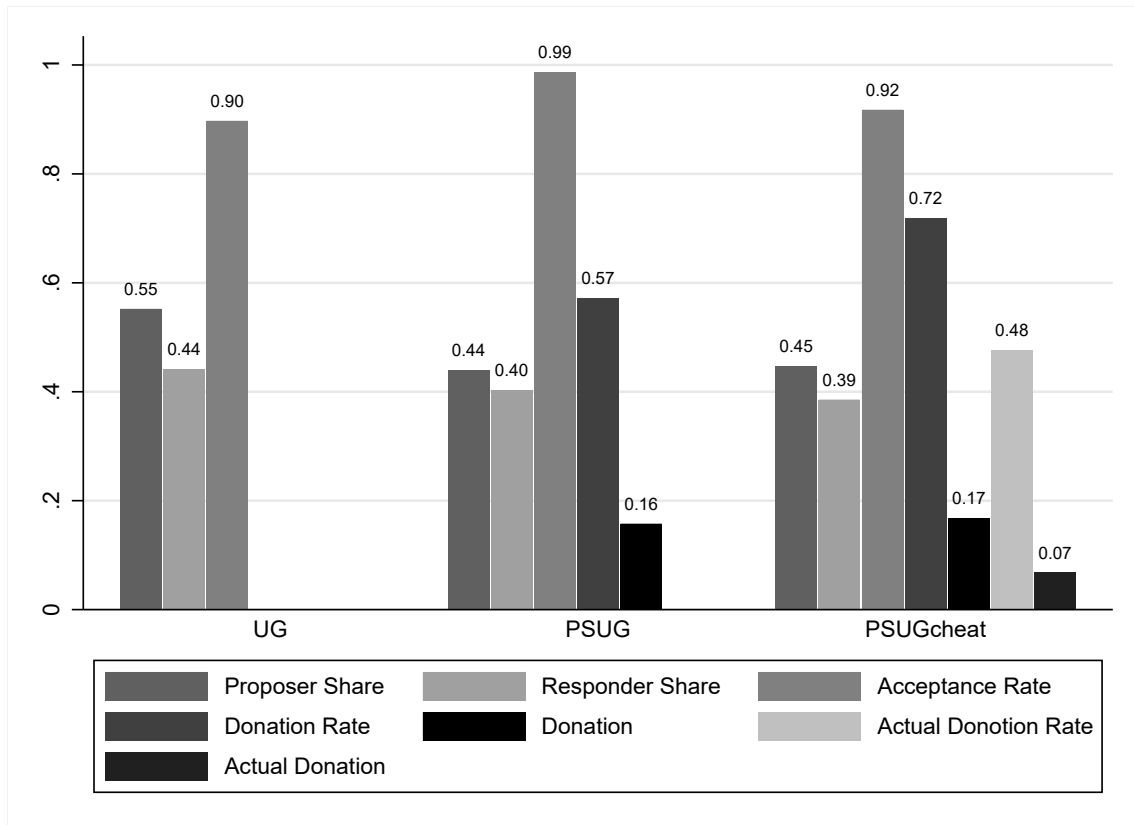


Table 1: Proposer offers (student sample)

Outcome	mean (1)	mean (2)	diff.	p-value
Proposer share				
UG (1) vs. PSUG (2)	0.56 (0.10)	0.44 (0.16)	0.12	0.00
PSUG (1) vs. PSUGcheat (2)	0.44 (0.16)	0.45 (0.17)	-0.01	0.54
Responder share				
UG (1) vs. PSUG (2)	0.44 (0.10)	0.40 (0.12)	0.04	0.01
PSUG (1) vs. PSUGcheat (2)	0.40 (0.12)	0.39 (0.13)	0.01	0.26
Donation				
PSUG (1) vs. PSUGcheat (2)	0.16 (0.23)	0.17 (0.19)	-0.01	0.21
Donation rate				
PSUG (1) vs. PSUGcheat (2)	0.57 (0.50)	0.72 (0.45)	-0.15	0.07
Acceptance rate				
UG (1) vs. PSUG (2)	0.90 (0.31)	0.99 (0.11)	-0.09	0.03
PSUG (1) vs. PSUGcheat (2)	0.99 (0.11)	0.92 (0.28)	0.07	0.10
Actual proposer share				
UG (1) vs. PSUGcheat (2)	0.56 (0.10)	0.55 (0.17)	0.01	0.57
PSUG (1) vs. PSUGcheat (2)	0.44 (0.16)	0.55 (0.17)	-0.11	0.00
Actual donation				
PSUG (1) vs. PSUGcheat (2)	0.16 (0.23)	0.07 (0.11)	0.09	0.01
Actual donation rate				
PSUG (1) vs. PSUGcheat (2)	0.57 (0.50)	0.47 (0.50)	0.10	0.30

Note: Standard deviations in parentheses.

Table 2: Proposer Types (student sample)

Outcome	mean (1)	mean (2)	diff.	p-value
Type Equal or More ($x^P \leq x^R$)				
UG (1) vs. PSUG (2)	0.61 (0.49)	0.75 (0.43)	0.14	0.05
PSUG (1) vs. PSUGcheat (2)	0.75 (0.43)	0.68 (0.47)	-0.07	0.34
Type Actual Equal or More ($\hat{x}^P \leq x^R$)				
UG (1) vs. PSUGcheat (2)	0.61 (0.49)	0.43 (0.50)	-0.18	0.03
PSUG (1) vs. PSUGcheat (2)	0.75 (0.43)	0.43 (0.50)	-0.32	0.00
In PSUGcheat:				
	Honest ($\hat{d} \geq d d > 0$)		Dishonest ($\hat{d} < d d > 0$)	
	0.42 (0.50)		0.58 (0.50)	
	n=23		n=33	
Proposer	0.41 (0.09)		0.38 (0.17)	
Responder	0.43 (0.08)		0.32 (0.11)	
Donation	0.15 (0.10)		0.29 (0.21)	
Actual donors	1 (0)		0.34 (0.48)	
Actual donation	0.18 (0.14)		0.03 (0.05)	
Actual Proposer	0.39 (0.13)		0.65 (0.11)	
Type Equal or More ($x^P \leq x^R$)	0.74 (0.45)		0.63 (0.49)	
Type Actual Equal or More ($\hat{x}^P \leq x^R$)	0.74 (0.45)		0.03 (0.18)	

Note: Standard deviations in parentheses.

3.2 Results from the non-student subject pool

We now discuss the results from the Amazon MTurk sample. The additional treatments with the MTurk sample allow to shed light on the strategic use of the donation channel as well as to identify mechanisms to limit the substantial cheating. We again report outcomes in shares of the endowment of \$10.

For UG, PSUG, and PSUGcheat, we largely replicate the results from the student sample. Figure 2 as well as Tables 3 and 4 report allocations and proposer types for the 2017 MTurk sample. In UG, again the average allocation is 0.55 vs. 0.45. PSUG leads to 46% going to the proposer, 43% to the responder, and 11% to charity. The donations and the fraction of donors (45%) in PSUG are slightly smaller than in the student sample, while the portion of equality-types (72%) is the same.

Allowing for cheating in PSUGcheat, we observe 60% offering a donation, which is higher compared to PSUG ($p = 0.06$), while about the same share of proposer actually give (45% in PSUG vs. 44% in PSUGcheat). In aggregate, PSUGcheat (vs. PSUG) reallocates final average payoffs from responders ($p = 0.00$) towards donations ($p = 0.08$) and proposers ($p = 0.04$). This is also witnessed by the reduced prevalence of actually equal payoffs: While the number of equality oriented types does not change from UG to PSUG, in line with Prediction 1 (i), it becomes significantly smaller in PSUGcheat (72% in PSUG vs. 54% in PSUGcheat, $p = 0.03$). Jointly, these results are consistent with Prediction 1 (ii).

Interestingly, the share of honest types among those who claim a positive donation (63%) is significantly larger than among the student population (42%). Yet, again dishonest types offer on average 0.32 to charity, but only give 0.04. Honest types offer a donation of 0.19, but actually end up donating more (0.27). In fact, 11% of proposers in PSUGcheat end up donating strictly more than promised. The intuition could be that they (rightfully) consider large donation offers as untrustworthy and thus may fear rejection by the responders if proposing their actually desired allocation. Alternatively, they may prefer a “silent” donation because they do not want to self-signal giving to charity for strategic reasons.

At face value, though, offers by dishonest types look more attractive than by honest types as they on average assign a slightly higher amount to the responder (0.34 vs. 0.36), while pretending to keep less for themselves (0.47 vs. 0.32) and promising a larger donation (0.19 vs. 0.32). Similar to the student sample, large donation offers could serve as an identification mechanism for dishonest intentions. Yet, they do not lead to rejections of the offers. Indeed, the acceptance rates in PSUGcheat (95%) is even higher than in PSUG (93%), possibly because responders cannot clearly identify cheating when they make their decision, i.e. proposers may exploit a moral wiggle room (e.g. Dana et al., 2007). Because of these large acceptance rates in the main treatments, we do not further explore the determinants of rejection decisions.

Figure 2: Proposer offers in UG, PSUG & PSUGcheat (MTurk sample)

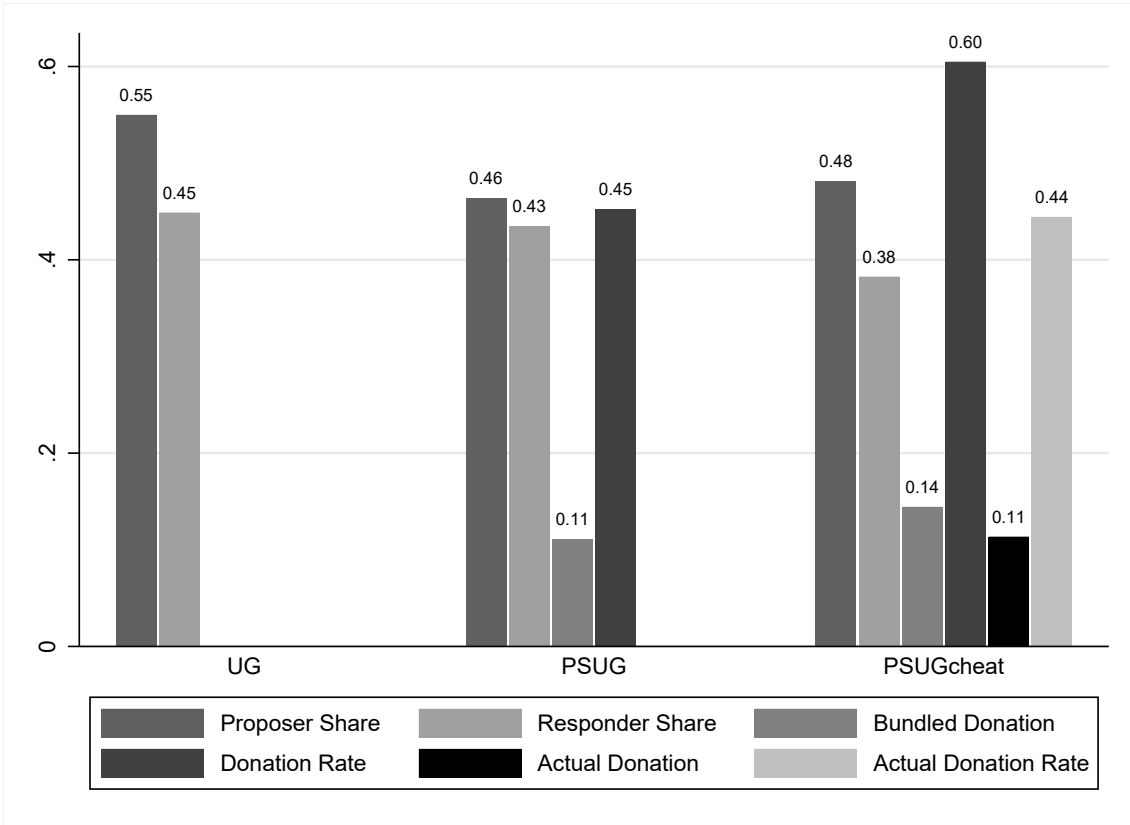


Table 3: Proposer offers in UG, PSUG & PSUGcheat (MTurk sample)

Outcome	mean (1)	mean (2)	diff.	p-value
Proposer Share				
UG (1) vs. PSUG (2)	0.55 (0.13)	0.46 (0.16)	-0.09	0.00
PSUG (1) vs. PSUGcheat (2)	0.46 (0.16)	0.48 (0.18)	0.02	0.63
Responder Share				
UG (1) vs. PSUG (2)	0.45 (0.13)	0.43 (0.10)	-0.02	0.09
PSUG (1) vs. PSUGcheat (2)	0.43 (0.10)	0.38 (0.14)	-0.05	0.00
Donation				
PSUG (1) vs. PSUGcheat (2)	0.11 (0.16)	0.14 (0.16)	0.03	0.08
Donation Rate				
PSUG (1) vs. PSUGcheat (2)	0.45 (0.50)	0.60 (0.49)	0.15	0.06
Acceptance Rate				
UG (1) vs. PSUG (2)	0.90 (0.30)	0.93 (0.25)	0.03	0.54
PSUG (1) vs. PSUGcheat (2)	0.93 (0.25)	0.95 (0.22)	0.02	0.64
Actual Proposer Share				
UG (1) vs. PSUGcheat (2)	0.55 (0.13)	0.51 (0.20)	-0.04	0.40
PSUG (1) vs. PSUGcheat (2)	0.46 (0.16)	0.51 (0.20)	0.05	0.04
Actual Donation				
PSUG (1) vs. PSUGcheat (2)	0.11 (0.16)	0.11 (0.18)	0.00	0.91
Actual Donation Rate				
PSUG (1) vs. PSUGcheat (2)	0.45 (0.50)	0.44 (0.50)	0.01	0.92

Note: Standard deviations in parentheses.

Table 4: Type of proposers in UG, PSUG & PSUGcheat (MTurk sample)

Outcome	mean (1)	mean (2)	diff.	p-value
Type Equal or More ($x^P \leq x^R$)				
UG (1) vs. PSUG (2)	0.73 (0.45)	0.72 (0.45)	-0.01	0.92
PSUG (1) vs. PSUGcheat (2)	0.72 (0.45)	0.62 (0.49)	-0.10	0.19
Type Actual Equal or More ($\hat{x}^P \leq x^R$)				
UG (1) vs. PSUGcheat (2)	0.73 (0.45)	0.54 (0.50)	-0.19	0.06
PSUG (1) vs. PSUGcheat (2)	0.72 (0.45)	0.54 (0.50)	0.18	0.03

In PSUGcheat:	Honest ($\hat{d} \geq d d > 0$)	Dishonest ($\hat{d} < d d > 0$)
	0.63 (0.49)	0.37 (0.49)
	n=31	n=18
Proposer Share	0.47 (0.15)	0.32 (0.17)
Responder Share	0.34 (0.11)	0.36 (0.11)
Donation	0.19 (0.10)	0.32 (0.15)
Actual Proposer Share	0.39 (0.21)	0.59 (0.17)
Actual Donation	0.27 (0.19)	0.04 (0.09)
Actual Donation Rate	1 (0)	0.22 (0.43)
Type Equal or More ($x^P \leq x^R$)	0.52 (0.51)	0.67 (0.49)
Type Actual Equal or More ($\hat{x}^P \leq x^R$)	0.58 (0.50)	0.22 (0.43)

Note: Standard deviations in parentheses.

Strategic behavior in PSUG involves two dimensions: proposers may try to generate acceptance through larger offers to the responder and/or larger donations. In order to delineate these dimensions better, we consider behavior in DG and PSDG, i.e. when proposers do not fear possible rejections. The results are reported in Table 5. Unsurprisingly, the average share that the proposers keep in PSDG (0.62) is much larger than in PSUG, while the allocation to responders is reduced (0.24). However, both the actual amount going to charity (0.15) and the fraction of donors (53%) are higher than in PSUG. Comparing PSDG and PSUG, we see that the proportion of offers that allocate at least as much to the responder as to the proposer is reduced (40% in PSDG vs. 72% in PSUG) – the threat of rejection thus primarily leads to a reallocation between proposers and responders towards equality, but also to a slight reduction in donations.¹³

This is consistent with the preferences as displayed in the dictator games. Comparing DG and PSDG, the option to donate does neither affect the fraction of offers in which the proposer keeps at most as much as is given to the responder (42% in DG vs. 40% in PSDG) nor the proportion of participants who allocate nothing to the other person (35% vs. 30% selfish types). Yet, selfishness towards the other person is connected with the decision to become a donor: among those who do not give to the other person, 25% give to charity, while 64% among those who give to the responder also donate to charity. The threat of rejection in PSUG can thus be expected to force primarily selfish types to increase the allocation to the other person. In PSUGcheat, they have additionally the option to mimic the donation behavior of honest donors, thus creating leeway to reallocate to their own

¹³The option to cheat again reduces this fraction in the actual allocation (54%).

advantage. This interpretation is consistent with the donation rate in PSUG (45%) being virtually identical to the actual donation rate in PSUGcheat (44%), while significantly more proposers claim to use the charity channel (60% vs. 45%, $p = 0.06$).

Table 5: Offers and type of proposers in DG & PSDG (MTurk sample)

	DG	PSDG
Proposer Share	0.71 (0.25)	0.62 (0.29)
Responder Share	0.32 (0.25)	0.24 (0.20)
Donation		0.15 (0.21)
Donation Rate		0.53 (0.51)
Type Equal or More ($x^P \leq x^R$)	0.42 (0.50)	0.40 (0.50)
Type Selfish ($x^R = 0$)	0.35 (0.48)	0.30 (0.46)
Donation if selfish ($d x^R = 0$)		0.07 (0.15)
Donation if not selfish ($d x^R > 0$)		0.18 (0.23)
Donation Rate if selfish ($d > 0 x^R = 0$)		0.25 (0.45)
Donation Rate if not selfish ($d > 0 x^R > 0$)		0.64 (0.49)

Note: Standard deviations in parentheses.

Limiting the extent of cheating – The information channel

For both the students and the MTurk sample, we have identified substantial deviations between promised and actually implemented donations in PSUGcheat. These limits of using the bundling channel without credible commitment exist as responders cannot differentiate honest from dishonest offers. In PSUGinfo, we partly close this wiggle room: While responders still do not know the cheating behavior when they accept or reject the offer, they will receive this information after all decisions are implemented. PSUGinfo thus is expected to intensify proposers' (self-)image concerns (e.g., Bénabou & Tirole, 2006; Konow, 2000; Glazer & Konrad, 1996; Ariely et al., 2009).

Figure 3 displays the characteristics of the offers in PSUGinfo. The results are also reported in Tables 6 and 7. Indeed, providing information in PSUGinfo only marginally increases the share of participants promising to bundle relative to PSUGcheat, yet more subjects actually do donate (0.60, $p = 0.07$ vs. PSUG and $p = 0.06$ vs. PSUGcheat) and the actual donation amount is larger than in PSUGcheat and PSUG (0.17, $p = 0.08$ vs. PSUG and $p = 0.06$ vs. PSUGcheat). The extra donation in PSUGinfo is apparently taken from the proposers's share, although the difference between PSUGcheat and PSUGinfo is not significant. Only 5% percent of the offers are rejected.

Relative to PSUGcheat, providing information on actual donations in PSUGinfo increases the share of honest types to 75% (see Table 7). These propose to donate on average 0.25, yet end up donation 0.31. In fact, 20% of subjects strictly donate more than promised. The increase of the share of such silent donors ($\hat{d} > d$) relative to PSUGcheat indicates that part of the motivation is due to (self-)image concerns: These proposers show a desire to not be viewed as donating for strategic reasons. Another reason that is a potential fear of being rejected because being mistakenly viewed as a dishonest type when offering a larger donation. Indeed, dishonest types in PSUGinfo offer to donate more

(0.46), while ending up donating a mere share of 5%. Again honest and dishonest types do not differ with respect to their allocation to the responder (0.33 vs. 0.34).

Providing information thus prevents some from not delivering on their promises, yet does not deter the extreme cheaters. However, it leads to larger donations eventually ending up with charity than in PSUGcheat (0.11 vs. 0.17, $p = 0.06$). The findings in PSUGcheat are thus consistent with our theoretical considerations as summarized in Prediction 2.

Figure 3: Proposer offers in PSUGcheat, PSUGinfo & PSUGcomp (MTurk sample)

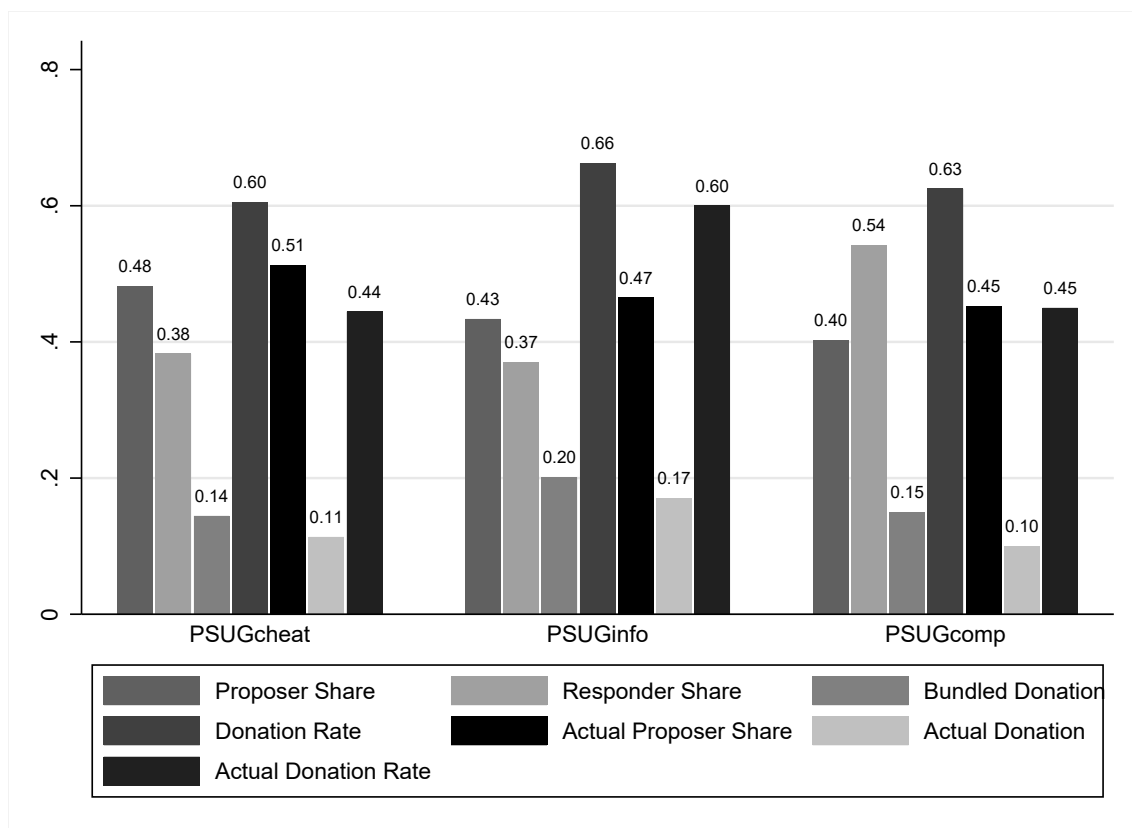


Table 6: Proposer offers in PSUGcheat, PSUGinfo & PSUGcomp (MTurk sample)

Outcome	mean (1)	mean (2)	diff.	p-value
Proposer Share				
PSUG (1) vs. PSUGinfo (2)	0.46 (0.16)	0.43 (0.20)	-0.03	0.39
PSUGcheat (1) vs. PSUGinfo (2)	0.48 (0.18)	0.43 (0.20)	-0.05	0.19
PSUGcheat (1) vs. PSUGcomp (2)	0.48 (0.18)	0.40 (0.22)	0.08	0.01
Responder Share				
PSUG (1) vs. PSUGinfo (2)	0.43 (0.10)	0.37 (0.14)	-0.06	0.00
PSUGcheat (1) vs. PSUGinfo (2)	0.38 (0.14)	0.37 (0.14)	-0.01	0.45
PSUGcheat (1) vs. PSUGcomp (2)	0.38 (0.14)	0.54 (0.19)	0.26	0.00
Donation				
PSUG (1) vs. PSUGinfo (2)	0.11 (0.16)	0.20 (0.22)	0.09	0.00
PSUGcheat (1) vs. PSUGinfo (2)	0.14 (0.16)	0.20 (0.22)	0.06	0.16
PSUGcheat (1) vs. PSUGcomp (2)	0.14 (0.16)	0.15 (0.17)	0.01	0.99
Donation Rate				
PSUG (1) vs. PSUGinfo (2)	0.45 (0.50)	0.66 (0.48)	0.21	0.01
PSUGcheat (1) vs. PSUGinfo (2)	0.60 (0.49)	0.66 (0.48)	0.06	0.45
PSUGcheat (1) vs. PSUGcomp (2)	0.60 (0.49)	0.63 (0.49)	0.03	0.83
Acceptance Rate				
PSUG (1) vs. PSUGinfo (2)	0.93 (0.25)	0.95 (0.22)	0.02	0.64
PSUGcheat (1) vs. PSUGinfo (2)	0.95 (0.22)	0.95 (0.22)	0.00	1.00
Actual Proposer Share				
PSUG (1) vs. PSUGinfo (2)	0.46 (0.16)	0.47 (0.23)	0.01	0.42
PSUGcheat (1) vs. PSUGinfo (2)	0.51 (0.20)	0.47 (0.23)	-0.04	0.22
PSUGcheat (1) vs. PSUGcomp (2)	0.51 (0.20)	0.45 (0.22)	-0.06	0.03
Actual Donation				
PSUG (1) vs. PSUGinfo (2)	0.11 (0.16)	0.17 (0.22)	0.06	0.08
PSUGcheat (1) vs. PSUGinfo (2)	0.11 (0.18)	0.17 (0.22)	0.06	0.06
PSUGcheat (1) vs. PSUGcomp (2)	0.11 (0.18)	0.10 (0.15)	-0.01	0.89
Actual Donation Rate				
PSUG (1) vs. PSUGinfo (2)	0.45 (0.50)	0.60 (0.49)	0.15	0.07
PSUGcheat (1) vs. PSUGinfo (2)	0.44 (0.50)	0.60 (0.49)	0.16	0.05
PSUGcheat (1) vs. PSUGcomp (2)	0.44 (0.50)	0.45 (0.50)	0.01	0.95

Note: Standard deviations in parentheses.

Table 7: Type of proposers in PSUGcheat, PSUGinfo & PSUGcomp (MTurk sample)

Outcome	mean (1)	mean (2)	diff.	p-value
Type Equal or More ($x^P \leq x^R$)				
PSUG (1) vs. PSUGinfo (2)	0.72 (0.45)	0.61 (0.49)	-0.11	0.18
PSUGcheat (1) vs. PSUGinfo (2)	0.62 (0.49)	0.61 (0.49)	-0.01	0.95
PSUGcheat (1) vs. PSUGcomp (2)	0.62 (0.49)	0.73 (0.45)	0.11	0.24
Type Actual Equal or More ($\hat{x}^P \leq x^R$)				
PSUG (1) vs. PSUGinfo (2)	0.72 (0.45)	0.54 (0.50)	-0.18	0.02
PSUGcheat (1) vs. PSUGinfo (2)	0.54 (0.50)	0.54 (0.50)	0.00	0.94
PSUGcheat (1) vs. PSUGcomp (2)	0.54 (0.50)	0.63 (0.49)	0.09	0.39
Type Honest ($\hat{d} \geq d d > 0$)				
PSUGcheat (1) vs. PSUGinfo (2)	0.63 (0.49)	0.75 (0.43)	0.12	0.18
PSUGcheat (1) vs. PSUGcomp (2)	0.63 (0.49)	0.60 (0.50)	-0.03	0.79
Type Silent donor ($\hat{d} > d$)				
PSUGcheat (1) vs. PSUGinfo (2)	0.11 (0.32)	0.20 (0.40)	0.09	0.12
PSUGcheat (1) vs. PSUGcomp (2)	0.11 (0.32)	0.10 (0.30)	-0.01	0.85

In PSUGinfo:	Honest ($\hat{d} \geq d > 0$)	Dishonest ($\hat{d} < d, d > 0$)
	0.75 (0.43)	0.25 (0.43)
	n=40	n=13
Proposer Share	0.42 (0.17)	0.20 (0.17)
Responder Share	0.33 (0.12)	0.34 (0.12)
Donation	0.25 (0.17)	0.46 (0.20)
Actual Proposer Share	0.37 (0.23)	0.62 (0.15)
Actual Donation	0.31 (0.24)	0.05 (0.08)
Actual Donation Rate	1 (0)	0.31 (0.48)
Type Equal or More ($x^P \leq x^R$)	0.48 (0.51)	0.77 (0.44)
Type Actual Equal or More ($\hat{x}^P \leq x^R$)	0.53 (0.51)	0.15 (0.38)

In PSUGcomp:	Honest ($\hat{d} \geq d > 0$)	Dishonest ($\hat{d} < d, d > 0$)
	0.60 (0.50)	0.40 (0.50)
	n=15	n=10
Proposer Share	0.40 (0.14)	0.25 (0.14)
Responder Rate	0.42 (0.14)	0.42 (0.15)
Donation	0.18 (0.11)	0.33 (0.19)
Actual Proposer Share	0.37 (0.14)	0.55 (0.16)
Actual Donation	0.21 (0.14)	0.03 (0.07)
Actual Donation Rate	1 (0)	0.20 (0.42)
Type Equal or More ($x^P \leq x^R$)	0.67 (0.49)	0.80 (0.42)
Type Actual Equal or More ($\hat{x}^P \leq x^R$)	0.67 (0.49)	0.40 (0.52)

Note: Standard deviations in parentheses.

Limiting the extent of cheating – The competition channel

We finally report the impact of competition in interaction with bundling and cheating, again reported in Figure 3 and Tables 6 and 7. PSUGcomp shifts the bargaining power towards responders who are now, on average, offered a larger piece of the pie (0.54 in PSUGcomp vs. 0.38 in PSUGcheat, $p = 0.00$), significantly decreasing the share that

proposers want to keep for themselves from 0.48 in PSUGcheat to 0.40 in PSUGcomp ($p = 0.01$). Still, donation offers under competition (0.15) are as high as in PSUGcheat (0.14), and proposers again plan on cheating such that the actual donation would be 10% vs. 11% in PSUGcheat.

Within PSUGcomp, every responder accepted one of the two offers. In order to better understand the role of competition, Table 8 reports the characteristics of accepted vs. rejected offers. We observe that accepted offers give less to proposers (0.34 vs. 0.47) and charity (0.11 vs. 0.20). The rejection process still cannot fully eliminate cheating: While the implemented shares among accepted offers almost equals the initial proposal (actual donations 0.10), the share of actual donors (0.40) is smaller than the share who offered a donation (0.55). Rejected offers involve substantial cheating with an actual donation of 0.10, but a much larger share intended to go to the proposer (0.56 vs. 0.35). Rejected and accepted offers thus do not differ w.r.t. to the donation that actually would have been triggered, but only in the surplus shares allocated to responders and proposers.

Under competition, some subjects thus still try to exploit the lacking enforceability of donation offers, yet a lot of these offers end up being rejected. While this appears somewhat surprising, the data shows two reasons: First, responders typically pick the offer that gives themselves a higher share. By doing so, they also tend to take the offers with lower donation pledges and thus reduce the scope for cheating. Second, as discussed before, larger donation offers may lack credibility such that responders are not willing to trade off a smaller payoff against uncertain prospects of triggering a larger donation.

Table 8: Characteristics of accepted and rejected offers in PSUGcomp (MTurk sample)

	Accepted Offers	Rejected Offers	diff	p-value
	n = 20	n = 20		
Proposer Share	0.34 (0.17)	0.47 (0.25)	0.13	0.14
Responder Share	0.56 (0.16)	0.34 (0.16)	-0.22	0.00
Donation	0.11 (0.13)	0.20 (0.20)	0.09	0.16
Donation Rate	0.55 (0.51)	0.70 (0.47)	0.15	0.33
Actual Proposer Share	0.35 (0.16)	0.56 (0.22)	0.21	0.00
Actual Donation	0.10 (0.16)	0.10 (0.13)	0.00	0.67
Actual Donation Rate	0.40 (0.50)	0.50 (0.51)	0.10	0.53
Type Equal or More ($x^P \leq x^R$)	0.90 (0.31)	0.55 (0.51)	-0.35	0.01
Type Actual Equal or More ($\hat{x}^P \leq x^R$)	0.85 (0.37)	0.40 (0.50)	-0.45	0.00

Note: Standard deviations in parentheses.

4 Conclusion

In this paper, we report findings from a modified ultimatum game motivated by an increasing use of bundling offers of private goods with public good provision. Our experiment was designed to investigate motivations for using charitable pledges within bargaining contexts. Our treatments allow to disentangle prosocial preferences of proposers from using prosocial promises as a strategic instrument. Specifically, we introduced a series of

prosocial ultimatum games where a proposer can suggest a split between himself (firm), the responder (consumer), and a charitable donation. We varied the enforceability of the donation pledge and the competitive pressure.

We identify a substantial use of prosocial promises in our experimental bargaining situation. While part of this is ascribed to preferences of the proposers, the strategic motive is particularly prevalent when promised donations cannot be enforced. We observe substantial cheating behavior among proposers, i.e. they deviate from the initial donation pledges after their offer was accepted. While most proposers appeal to equality of payoffs between proposers and responders to generate acceptance, renegeing on the charitable promise allows to shift the bargaining advantage towards the proposer.

The extent of cheating can be limited by ex post providing the responder with information of the actual donation decision of the proposer. Here, (self-)image concerns discipline some participants in their decision to not follow through with their charitable pledge. Yet, we also identified another important behavior: a significant number of participants donates more than promised in their charitable pledge. We suggest two different motivations for this: First, large prosocial promises may not be credible and thus face a threat of rejection. Second, proposers may show (either to themselves or to others in the information treatment) that their donation decisions are *not* due to strategic reasons. Thus, the information treatment does not only discourage cheating behavior, it also provides a mechanism through which prosocial individuals can better signal their type.

Interestingly, we do not find competitive pressure to intensify cheating. Proposer competition does not lead to larger intentions to renege on charitable pledges. Rather allowing responders to choose from two offers is found to reduce cheating among the accepted offers as responders decided to accept offers with a larger share for themselves and thereby against offers with larger (and potentially untrustworthy) donation pledges.

Our experimental findings are consistent with conclusions within the management literature that greenwashing might be facilitated by imperfect information and transparency about firms' environmental performance (e.g., Delmas & Burbano, 2011). Low credibility motivates profit-driven (in our experiment: selfish) types to engage in greenwashing (i.e. cheating) (Wu et al., 2020). Interpreting our findings, information provision on actual performances can not only increase the credibility of prosocial activities, but also allows firms (here proposers) to display their intrinsic rather than strategic motivation (e.g., Morgan & Tumlinson, 2019; Chan & Lange, 2021) by potentially going beyond their promises or their regulatory obligations and thereby separating from the selfish types (Wu et al., 2020).

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A Tables: Sample characteristics

Table A1: Overview of sample size and characteristics (student sample)

Characteristic	Total	UG	PSUG	PSUGcheat
	mean (sd)	mean (sd)	mean (sd)	mean (sd)
Born in Germany	0.86 (0.34)	0.87 (0.33)	0.89 (0.31)	0.83 (0.37)
Female	0.57 (0.50)	0.56 (0.50)	0.56 (0.50)	0.62 (0.49)
Age	25.19 (5.25)	25.13 (3.87)	25.71 (7.53)	24.91 (4.36)
Single	0.76 (0.43)	0.72 (0.45)	0.75 (0.43)	0.71 (0.45)
Partner	0.24 (0.43)	0.28 (0.45)	0.25 (0.43)	0.29 (0.45)
University degree	0.36 (0.48)	0.37 (0.48)	0.32 (0.47)	0.42 (0.50)
Income above median	0.02 (0.15)	0.01 (0.11)	0.03 (0.16)	0.04 (0.20)
Number of participants	611	157	154	149
Number of proposers	313	79	77	75
Number of responders	298	78	77	74

Table A2: Overview of sample size and characteristics (MTurk sample)

	2017	2018	Total	DG	PSDG	UG	UGcomp	PSUG	PSUGcheat	PSUGinfo	PSUGcomp
	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean	mean
Characteristics	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
U.S. citizen	0.91 (0.29)	0.76 (0.43)	0.88 (0.33)	0.94 (0.24)	0.91 (0.28)	0.93 (0.26)	0.95 (0.21)	0.86 (0.34)	0.84 (0.36)	0.83 (0.38)	0.95 (0.21)
Female	0.42 (0.49)	0.38 (0.49)	0.41 (0.49)	0.40 (0.49)	0.45 (0.50)	0.51 (0.50)	0.35 (0.48)	0.42 (0.49)	0.39 (0.49)	0.39 (0.49)	0.30 (0.46)
Age	34.42 (9.94)	33.79 (10.93)	34.30 (10.14)	34.23 (10.12)	35.96 (9.75)	35.58 (11.36)	34.26 (9.59)	34.55 (10.31)	32.90 (9.74)	34.12 (9.38)	32.79 (10.73)
Single	0.43 (0.50)	0.46 (0.50)	0.44 (0.50)	0.48 (0.50)	0.43 (0.50)	0.49 (0.50)	0.49 (0.50)	0.41 (0.49)	0.47 (0.50)	0.39 (0.49)	0.52 (0.50)
Partner	0.50 (0.50)	0.50 (0.50)	0.50 (0.50)	0.49 (0.50)	0.50 (0.50)	0.36 (0.48)	0.49 (0.50)	0.51 (0.50)	0.50 (0.50)	0.54 (0.50)	0.45 (0.50)
University degree	0.58 (0.49)	0.66 (0.47)	0.60 (0.49)	0.54 (0.50)	0.49 (0.50)	0.53 (0.50)	0.58 (0.50)	0.61 (0.49)	0.65 (0.48)	0.65 (0.48)	0.52 (0.50)
Income above median	0.45 (0.50)	0.42 (0.49)	0.45 (0.50)	0.48 (0.50)	0.44 (0.50)	0.35 (0.48)	0.47 (0.50)	0.46 (0.50)	0.42 (0.50)	0.42 (0.50)	0.49 (0.50)
(Self-)employed	0.87 (0.34)	0.89 (0.32)	0.87 (0.33)	0.88 (0.32)	0.86 (0.35)	0.80 (0.40)	0.87 (0.34)	0.86 (0.35)	0.92 (0.27)	0.87 (0.33)	0.92 (0.27)
Number of participants	1,020	246	1,266	80	80	85	65	546	173	171	66
Number of proposers	320	115	435	40	40	40	40	74	81	80	40
Number of responders	700	131	831	40	40	45	25	472	92	91	26

Note: We accidentally oversampled the responders in PSUG due to a programming bug.

Table A3: Proposer offers across all treatments (pooled MTurk sample)

	DG	PSDG	UG	UGcomp	PSUG	PSUGcheat	PSUGinfo	PSUGcomp
	mean	mean	mean	mean	mean	mean	mean	mean
Outcome	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)	(sd)
Proposer Share	0.71	0.62	0.55	0.46	0.46	0.48	0.43	0.40
	(0.25)	(0.29)	(0.13)	(0.17)	(0.16)	(0.18)	(0.20)	(0.22)
Responder Share	0.29	0.24	0.45	0.55	0.43	0.37	0.37	0.45
	(0.25)	(0.20)	(0.13)	(0.17)	(0.10)	(0.13)	(0.14)	(0.19)
Donation		0.15			0.11	0.14	0.20	0.15
		(0.21)			(0.16)	(0.16)	(0.22)	(0.17)
Donation Rate		0.53			0.45	0.60	0.66	0.63
		(0.51)			(0.50)	(0.49)	(0.48)	(0.49)
Actual Proposer Share	0.71	0.62	0.55	0.46	0.46	0.51	0.47	0.45
	(0.25)	(0.29)	(0.13)	(0.17)	(0.16)	(0.20)	(0.23)	(0.22)
Actual Donation		0.15			0.11	0.11	0.17	0.10
		(0.21)			(0.16)	(0.18)	(0.22)	(0.15)
Actual Donation Rate		0.53			0.45	0.44	0.60	0.45
		(0.51)			(0.50)	(0.50)	(0.49)	(0.50)
Type Selfish	0.35	0.30	0.03	0.03	0.00	0.02	0.01	0.05
	(0.48)	(0.46)	(0.16)	(0.16)	(0.00)	(0.16)	(0.11)	(0.22)
Type Honest $\hat{d} \geq d d > 0$						0.63	0.75	0.60
						(0.49)	(0.43)	(0.50)
Type Equal or More $x^R \geq x^P$	0.42	0.40	0.72	0.88	0.72	0.62	0.61	0.72
	(0.50)	(0.50)	(0.45)	(0.33)	(0.45)	(0.49)	(0.49)	(0.45)
Type Actual Equal or More $\hat{x}^R \geq x^P$	0.42	0.40	0.72	0.88	0.01	0.56	0.54	0.68
	(0.50)	(0.50)	(0.45)	(0.33)	(0.12)	(0.50)	(0.50)	(0.47)

B Experimental Protocol

Thank you for participating in our study!

Please read the following information carefully!

This study is an economic experiment. Throughout the experiment, your identity will be completely anonymous and will not be disclosed to anyone else. We assure you that this study and the related data will be handled in compliance with data protection laws. All analyses are carried out anonymously and the results are used exclusively for research purposes.

Participation takes about 10 minutes and you can make money in the course of the experiment. You can earn up to \$ 10 (on top of your \$ 1 reward for participation). The amount depends on your own decisions in the experiment and the decisions of another participant with whom you are randomly and anonymously partnered.

Note: If only the male form is chosen, this is not meant to be gender-specific but serves solely for the better comprehensibility and legibility of the text.

About the experiment

You are randomly and anonymously partnered with another participant. This participant will be your partner in this experiment. You and your partner receive an amount of \$10 and are asked to split this amount among one another. In addition, you can also make a donation to a charitable purpose.

Course of the experiment

You and your partner are randomly assigned a role, one partner is assigned the role A and the other partner the role B.

The experiment proceeds in **three steps**:

1. Participant A makes an offer to participant B, how to split the \$ 10 between himself and participant B. He also indicates how much he wants to donate for the charitable purpose from the amount he wants to keep for himself.
(Note: Only integer amounts can be indicated here.)
2. Participant B can accept or reject the offer.
 - If participant B rejects the offer, both partners, i.e. participant A and participant B, receive a payout of \$ 0.
 - If participant B accepts the offers, the \$ 10 will be split according to the offer. Participant B's share will be paid out according to the offer.
3. If participant B accepts the offer, participant A decides again about his donation. He is not bound by the amount indicated in the offer, i.e. he can also donate more or less. This donation amount will be passed to the non-profit organization and the rest of the \$ 10 (i.e. \$ 10 - amount for B - actual donation) will be paid out to participant A.

Example: Participant A proposed the following allocation: \$ 2 for B and \$ 8 for A with \$ 2 being donated. If participant B accepts the offer, then participant A can decide again about the donation. For example, he could keep the \$ 8 and donate nothing. Alternatively, he could donate the entire \$ 8 and keep nothing for himself. Also any other donation between \$ 0 and \$ 8 is possible.

Examples

1. Offer by participant A: \$ 0 for B, \$ 10 for A with \$ 10 being donated. B accepts. A now decides to donate only \$ 1.
Payouts: \$ 0 for B, \$ 9 for A, \$ 1 for the charitable purpose.
2. Offer by participant A: \$ 3 for B, \$ 7 for A with \$ 1 being donated. B rejects.
Payouts: \$ 0 for B, \$ 0 for A, \$ 0 for the charitable purpose.
3. Offer by participant A: \$ 5 for B, \$ 5 for A with \$ 0 being donated. B accepts. A sticks with his donation decision.
Payouts: \$ 5 for B, \$ 5 for A, \$ 0 for the charitable purpose.

On the next page you will learn about the charitable purpose for which you and your partner can donate and then find out which role was randomly assigned to you.

The charitable purpose: UNICEF

UNICEF works in 190 countries and territories and has spent 70 years working to improve the lives of children and their families. UNICEF staffers fight for the rights of every child seeking safe shelter, nutrition, protection from disaster and conflicts, and equality.

Every dollar that you donate goes to UNICEF to protect the rights of children.

The following role has been assigned to you by the random number generator:

Role A

That means:

1. In a first step, you will **make an offer to your partner** (participant B) about the allocation of the \$ 10 as well as about the amount that you want to give for the charitable purpose. Your partner will be informed about your offer.
2. In a second step, you decide again about **your actual donation** for the case that your partner accepts your offer. Your partner will not be informed about this second decision.
3. Participant B then **decides whether to accept or reject the offer**.
 - If he **rejects** the offer, you and your partner will receive a payout of \$ 0.
 - If he **accepts** the offer, he will receive the offered amount. Your donation decision from step 2 will be implemented and you will receive the rest of the \$ 10 (i.e. \$ 10 - amount for B - actual donation).
 - We will inform you about your partner's decision after this study is finished.

Before you make your decision, please answer the following test questions to ensure that you have understood the rules of the experiment.

Your decision:

Please enter your offer how to split the \$ 10 between yourself and your partner as well as your planned donation, which will be sent to your partner.

Please enter only integer amounts. The sum must be \$ 10. A rejection by your partner will result in a payout of \$ 0 for you.

Please note that your entries will result in real payouts if your partner accepts your offer. Payouts are transferred to you and your partner via amazon mturk.

The planned donation amount is not binding. On the next page you will enter your actual donation amount that will be implemented if your partner accepts your offer.

Amount that you would like to transfer to your partner	<input type="text"/>	\$
Amount that you plan to donate	<input type="text"/>	\$
Amount that you want to keep for yourself	<input type="text"/>	\$
Total:		0 \$