Sorting Into Incentives for Prosocial Behavior*

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Abstract

We study incentivized voluntary contributions to charitable activities. Motivated by the market for blood donations in Germany, we consider a setting where different incentives coexist and agents can choose to donate without receiving monetary compensation. We use a model that interacts image concerns of agents with intrinsic and extrinsic incentives to donate. Laboratory results show that a collection system where compensation can be turned down can improve the efficiency of collection. Image effects and incentive effects do not crowd each other out. A significant share of donors turn down compensation. Heterogeneity in treatment effects suggests gender-specific preferences over signaling.

Keywords: charitable giving, altruism, incentives, social image, laboratory experiment.

JEL Classification: H42, D64, C91, I18.

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1. Introduction

Many public goods rely on voluntary private contributions. Millions of people every year spend their time working as volunteers in their communities, give money to charity, or donate their own blood, organs, and other tissue. For charities seeking volunteers or money and for health care providers seeking blood donations, it is important to understand how to encourage this prosocial behavior.

An often-used way is to provide extrinsic incentives. The economics literature has found mixed evidence on the effects of monetary and non-monetary incentives on giving (Bowles and Polania-Reyes, 2012; Frey and Oberholzer-Gee, 1997). Although a positive effect of extrinsic incentives is in line with standard economic theory, it goes against a considerable literature in psychology and economics, which argues that they can backfire by either crowding out the intrinsic motivation to give (Deci, 1971,7; Titmuss, 1971), or ruining the reputation of donors who could be regarded as greedy (Benabou and Tirole, 2006; Exley, 2017). Field experiments have found evidence for extrinsic incentives to have both negative effects on volunteer work (Frey and Goette, 1999) as well as positive effects on organ (Lacetera, Macis and Stith, 2014b) and blood donations (Lacetera, Macis and Slonim, 2012,1).[1]

While the role of incentives has been analyzed in a wide range of domains, they have been mostly studied in isolation and contrasted to the absence of incentives. In this paper, we study a setting where different incentives coexist. In this environment, agents can turn down an extrinsic incentive to donate. This lets them reveal and signal their individual preferences through their actions.

Our setting is motivated by the market for human whole blood donations in Germany.[2] In most high-income countries, the concern that incentives could backfire is reflected in tight regulation of how blood donations can be collected. Regulations typically do not allow for monetary payments to donors (Council of Europe, 1995; The Lancet, 2005; World Health Organization, 2009). In many regions of Germany, however, monetary and non-monetary incentives appear to coexist in a "dual market" in which different blood collectors offer different incentives and prospective donors can

[1] Aside from the question of effectiveness, incentives to donate human tissue might be seen as controversial on moral grounds. Only limited incentives appear to be morally acceptable among a sample of people surveyed in the United States (Boulware, Troll, Wang and Powe, 2006). Becker and Elias (2007) provide a compelling argument in favor of allowing incentives for organ donations. Lacetera (2016) summarizes the debate. In this paper, we will abstract from the matter of the morality of incentives.

[2] The most common type of human blood donation is a "whole blood" donation, in which approximately one pint of blood is collected over a period of about ten minutes. Men can donate up to six times per year, women up to four times per year. Red blood cells from whole blood donations are typically used for transfusions to other patients and are most commonly seen as motivated by altruistic preferences (Niessen-Ruenzi, Weber and Becker, 2015). Other types of blood donations include platelet and plasma donations, which take much longer and require donors to be connected to a machine. Donors are commonly compensated in cash for these types of donations.

choose where to donate. Donations at the Red Cross are always unpaid, while donations at hospitals or commercial blood banks are compensated with 20 to 30 euro.

Very little is known about the features of such "dual markets" for the collection of charitable contributions. Does this system of collection increase donations compared to a single market in which either everyone is unpaid or everyone is paid? What are the determinants of the share of unpaid donations in a dual market? In this paper we focus on two channels that could help explain sorting into unpaid donations in a dual collection system: altruism and social image concerns.

To guide our analysis, we use a model of charitable giving in which prospective donors are motivated to give by intrinsic incentives, extrinsic incentives, and image concerns. We build on the framework by Benabou and Tirole (2006), but introduce two modifications: first, we change the payoff structure so that a potential compensation for the donation is paid out of the value that is generated by the donation. This tension between private and public benefit of the donation introduces a channel through which extrinsic incentives can crowd out intrinsic motivation. Second, we assume that donors do not differ in how much they value extrinsic incentives. This lets us make clear predictions, but comes at the cost of ruling out "reputational crowding out", that is we rule out that donors can have a negative response to the introduction of extrinsic incentives out of concern for appearing greedy. We derive three testable behavioral hypotheses from this model.

The first testable hypothesis states that the availability of compensation to donate should increase donations. We call this the "incentive effect". The second hypothesis states that irrespective of whether compensation is available, making actions visible should increase donations. We call this the "social image effect". Our third and novel hypothesis states that in a dual market, where agents can turn down compensation, a positive share of agents will choose to remain unpaid and that this share is larger when actions are taken in public. We call this "sorting", based on the idea that a dual market can bring about efficiency gains in the collection similar to those deriving from self-selection in second-degree price discrimination.

We test these three hypotheses in a laboratory experiment with 329 student subjects. For three rounds, each subject is confronted with the decision to participate in a real effort task. This task generates value for a charity under one of three market designs: donors receive no compensation for the donation (single market *NOT PAID*), donors always receive a compensation for the donation (single market *PAID*), and donors can choose whether they want to receive compensation for the donation (dual market *CHOOSE*). Like for the case of blood collection, any compensation paid out to donors reduces the social value of the donation. This is objectively measured in our controlled setup by the amount of money that goes to charity. We also vary the visibility of actions (*PRIVATE* vs. *PUBLIC*). The combination of market design treatments and visibility treatments in a full 3×2 design produces six distinct treatments, which we run between subjects.

The experimental results mostly support our behavioral hypotheses. We find clear evidence for the incentive effect. In the dual market, the availability of incentives does not crowd out intrinsic motivations of donors, irrespective of whether actions are observable. Moving from a single unpaid market to a dual market significantly increases the number of donations of our experimental subjects.

We also find evidence of strong social image effects. Making actions observable significantly increases donations in all three incentive schemes. Finally, we find support of our sorting hypothesis: when given the option to turn down compensation, a significant share of donors chooses to do so, though we do not find a significant difference between actions taken in private and in public.

Interestingly, and in contrast to similar studies that analyze the effectiveness of conditional and unconditional incentives to act prosocially (Ariely, Bracha and Meier, 2009; Carpenter and Myers, 2010), we do not find that social image effects attenuate incentive effects. We differ from Ariely et al. (2009) in that subjects decide to donate in the presence of an outside option. Our results suggest that when incentives are small and only partly offset the costs of donating, social image effects and incentive effects need not crowd each other out. In addition, we find heterogeneous effects of social image on contributions that we attribute to gender-specific preferences over signaling. Overall, our findings suggest novel ways to improve mechanisms for the collection of charitable donations by leveraging heterogeneity in individual preferences. Applied to the collection of blood donations, our results may inform the design and regulation of systems that use monetary incentives.

The remainder of the paper is organized as follows: Section 2 fixes ideas in a simple theoretical framework and presents testable behavioral hypotheses. Section 3 details experimental design and procedures. Section 4 presents the results. Section 5 concludes with a discussion of the implications of our findings for the market for blood that initially motivated our research.

2. Theoretical Framework

In the model by Benabou and Tirole (2006) (henceforth: BT), being compensated to donate can crowd out donations by spoiling the image of donors. Moreover, any compensation is paid from resources that are exogenous to the economy and is given to donors without affecting the social value of their donation. BT show that whether donors can turn down compensation should not matter, because neither image-indifferent nor image-concerned agents would want to do so. For image-indifferent agents, it would be a dominated strategy to turn down compensation that does not affect the social value of their donation. Image-concerned agents would be worried that their motivation is questioned: turning down incentives could reveal that they are not acting out of altruism, but just to appear as altruistic while in fact (on average) they are not.

For a dual market like in Germany, where prospective donors can choose from a menu of options, the model would thus predict that no one should turn down compensation. Yet we observe that a considerable share of donors chooses to remain unpaid when they have the choice between donating with a 20 to 30 euro compensation or donating without any compensation. Informational frictions and transportation costs may explain part of this outcome, though these do not appear to be empirically significant.

We suggest that a different payoff structure than the one by BT better fits the case of blood donations and many other charitable activities and could explain why prospective donors would choose to turn down incentives. In our version of the model, any potential compensation for the donation is paid out of the value that is generated by the donation. The collector of donations is a charitable organization that transforms collected donations into social value. To increase donations, the collector may find it optimal to pay donors a dividend from their donation as compensation. Increasing private returns from the donation comes at the expense of the value that the donation generates for the rest of the society. This feature of our setup introduces an additional channel through which incentives could potentially crowd out donations: a crowding out of intrinsic motivation. This channel is consistent with an earlier literature stemming from Deci (1971,7).

To formulate testable predictions that are directly relevant to our research question, we will substantially simplify the original model by BT. One key simplification is that we assume agents to be homogeneous in their taste for extrinsic incentives. When this is the case, there is no scope for signaling greediness (or a lack thereof). Despite being a common assumption in economics, a potential drawback of making this simplification is that it prevents the reputational crowding out from BT, i.e. a situation where extrinsic incentives reduce the donations of agents who seek to avoid signaling greediness through their actions.

2.1. Simple Model

The model economy is characterized by a unit mass of agents indexed by $i = \{1, ..., \infty\}$ and one collector of donations. This economy is analyzed under two different institutional settings. We refer to a *single* market when the collector is bound to pay an exogenously-set compensation $y = \tilde{y} \in \mathcal{R}_+$. We refer to a *dual* market when agents are allowed to choose remuneration $y = \{0, \tilde{y}\}$.

The ***collector*** takes donation d from each agent that decides to contribute and transforms it into social value $B \in \mathcal{R}_+$. For each contribution, the collector pays remuneration $y < B$.

Agents differ along two dimensions: the degree of altruism $a_i \sim F(\cdot)$ with positive bounded support, and the concern for image x_i, which we treat as binary with x_i taking value 1 with probability q (and 0 with probability $1 - q$). Both a_i and x_i are

independently distributed random variables. Agents make a decision to contribute $d = \{0, 1\}$ in exchange for remuneration y while facing a private cost c. Image concern matters for agents when actions are taken in public ($v = 1$) and is irrelevant when actions are taken in private ($v = 0$).

The utility of agent i can be written as follows:

$$U_i(d, y) = (1 - vx_i)[a_i(B - y) + y - c]d + vx_i E(a|d, y) \tag{2.1}$$

where $E(a|d, y)$ is the image that other agents have of agent i given her actions.

From this theoretical setting we derive two propositions that underpin our analysis:

Proposition 1 (Price discrimination)**.** *A dual market for donations increases contributions compared to a single market where no compensation is available. Compared to a single market where compensation cannot be turned down, allowing agents to turn down compensation reduces the cost of collection without affecting the number of donations.*

Proof in Appendix A.

The proposition characterizes the effect of various compensation schemes on donations. It applies when actions are taken in private and in public. Introducing extrinsic incentives to donate increases donations, irrespective of whether these incentives can be turned down. Allowing people to turn down incentives, introduces another margin for people to either express or signal their altruism. Highly altruistic agents donate and choose to turn down the compensation.

As a result, when incentives can be turned down, average cost of collection decreases without compromising supply of donations. These two results illustrate how a dual market, where agents are allowed to choose a remuneration, can bring about efficiency gains in the collection similar to those deriving from self-selection in second-degree price discrimination.

The following proposition is directly linked to the previous and highlights the interaction of image effects with price discrimination.

Proposition 2 (Image effect)**.** *The visibility of actions (i) increases participation in the single as well as in the dual market, and (ii) lowers the average cost of collection in the dual market.*

The proof of (ii) follows directly from the observation that the objective of image-concerned agents who are sufficiently altruistic to donate in private, but not altruistic enough to turn down compensation $y = \tilde{y}$, changes when acting in public. In order to improve their social image, these agents want to pool with the most altruistic agents, who turn down incentives.[3] Part (i) is due to the fact that image-concerned agents

[3]This signaling game may not have an equilibrium in pure strategy if the share of image-indifferent agents who are altruistic enough to turn down the incentives is positive but small compared to the share of image-concerned agents.

only care about their image when acting in public. As a result, even the least-altruistic of these decide to contribute in public in order to avoid the stigma of looking like the selfish segment of the population.

2.2. Behavioral Hypotheses

We re-organize the predictions contained in the two propositions above into three testable hypotheses. The *incentive effect* and *social image effect* hypotheses immediately derive from propositions 1 and 2, respectively. The *sorting* hypothesis consolidates predictions from both proposition to summarize the interaction of social image effects and incentive effects in the dual market for charitable giving.

Hypothesis 1 (Incentive Effect)**.** *Irrespective of whether actions are visible, the availability of incentives increases donations.*

Hypothesis 2 (Social Image Effect)**.** *Irrespective of whether compensation is available, making actions visible increases donations.*

Hypothesis 3 (Sorting)**.** *In a dual market, a positive share of agents chooses to be not paid. This share is larger when actions are taken in public.*

The incentive effect is consistent with an empirical literature on incentives for donating blood (Lacetera et al., 2012; Lacetera, Macis and Slonim, 2013; Mellstrom and Johannesson, 2008; Niessen-Ruenzi et al., 2015). Maybe most closely related to ours is the work by Mellstrom and Johannesson (2008), who conduct an experiment that offers monetary payments to prospective blood donors. Their findings suggest that for women (but not for men), monetary incentives can lead to a net crowding out of donations – thought it is difficult to say whether the results are driven by social signaling or by the fact that incentives lead to a shift in the perception of the incomplete contract, similar to the finding of Gneezy and Rustichini (2000). Moreover, they find that letting women turn down the compensation in favor of a donation to charity fully counteracts this crowding out. Our theoretical setup can partly explain this counteracting effect, in that for the most altruistic donors ($a_i > 1$) introducing incentives for charitable giving causes a net utility loss. Such utility loss can be undone when incentives can be turned down in the dual market. In a related paper, Chao (2017) suggests that even opt-in gifts could crowd out donations if they shift attention away from the intrinsic motivation. In our framework, we abstract from attention as a potential channel for crowding out.

The social image effect is consistent with a growing empirical literature on the effect of social image or social pressure on charitable actions in particular and economic behavior more generally (Ariely et al., 2009; Bursztyn and Jensen, 2017; Carpenter and Myers, 2010; Filiz-Ozbay and Ozbay, 2014; Lacetera and Macis, 2010). Our theoretical setup predicts that, no matter the incentive scheme, making actions visible should increase donations. Consistent with our prediction, Landry, Lange, List, Price and Rupp

(2006) find that both when a charity donation entitles to a lottery ticket and when it does not, social image concerns do increase monetary donations in a door-to-door fundraiser. They also find pronounced gender differences, where men are more likely to contribute to a charity when visited by physically attractive female solicitors. The finding that men are more willing to engage in costly signaling of generosity is consistent with costly signaling theory in evolutionary biology (Gintis, Smith and Bowles, 2001; Smith and Bird, 2000), which posits that prosocial behavior can be instrumental in signaling good character and attractiveness as a potential match. In particular, there is evidence that women in their mating decision place emphasis on signals indicating resource provision (as opposed to just physical attractiveness), which in turn induces men to strategically signal generosity (Barclay, 2010; Boehm and Regner, 2013; Eagly and Crowley, 1986; Iredale, Van Vugt and Dunbar, 2008). Van Vugt and Iredale (2013) call men's public good contributions the "human equivalent of a peacock's tail". Although our theoretical setup is silent on gender differences, we are going to investigate these empirically.

Finally, we are not aware of any empirical evidence on the sorting hypothesis as formulated above. It is not obvious whether prospective donors should increase donations when the choice set is augmented in a way to allow signaling of prosocial orientation either through increased donations or by turning down incentives to donate. A large body of evidence on pure and impure altruism suggests that even when donations are completely private, a positive share of prospective donors presented with the possibility to contribute time and effort – with or without compensation – would choose to donate not paid.[4] Signaling motives should increase the latent utility of acting prosocially. Increasing the visibility of actions could strengthen the signaling motive, potentially increasing the share of unpaid donations. The theory of Benabou and Tirole (2006) accommodates sorting as described above, but is hard to test empirically. In our theoretical framework, we chose to make substantial simplifications in order to derive testable hypothesis. We take our experiment as a first step to validate this simplified framework and to test simple hypotheses that could guide the field and inform policy on the properties of dual collection systems for charitable donations.

3. Experimental Design and Procedures

3.1. General Setup

We test our hypotheses in a laboratory experiment. In our experiment, subjects generate value for a charity by participating in a real-effort task. For the experimental task, we build on the "click for charity" design by Ariely et al. (2009). Different from Ariely

[4]See Ottoni-Wilhelm, Vesterlund and Xie (2014) for a review of the pure and impure altruism literature.

et al. (2009), subjects in our framework can choose between participating in the donation task or skipping the task and taking a fixed payoff as outside option.[5] This outside option introduces an homogeneous private cost of donating on top of the individual cost of exerting effort. If subjects choose to participate, they can generate a donation by sequentially entering 400 key sequences on a computer keyboard. One sequence constitutes of four key presses (*"w"*, *"e"*, *"e"*, *"return"*). On their screen, subjects see a bar indicating progress towards the required number of sequences. We chose this task because it is not inherently meaningful or intrinsically rewarding, and allows us to focus on motivation to exert effort for a charity. Other tasks, particularly ones that are more gamified, may be differentially appealing to subjects and thus increase noise and confounds (Charness, Gneezy and Henderson, 2018). Donations generated with this real-effort task are paid out to a charity chosen by each subject.

We employ a full 3×2 between-subject design where we systematically vary the type of incentives offered to engage in the donation task (*PAID*, *NOT PAID*, *CHOOSE*) and the visibility of actions (*PUBLIC* and *PRIVATE*). Visibility is randomly varied across experimental sessions while the incentives offered are randomly varied across all subjects. Table 1 summarizes the design.[6]

Table 1: Overview of Treatments

	Not paid $y = 0$	Paid $y = \tilde{y}$	Choose $y \in \{0, \tilde{y}\}$
Private Action $v = 0$	n = 46	n = 48	n = 60
Public Action $v = 1$	n = 47	n = 62	n = 66

Notes: Rows list visibility treatments, columns list incentive treatments. n refers to number of subjects in each treatment cell (total of 329 subjects). y refers to the incentive provided, v to the visibility of actions.

[5] Without the outside option, the marginal cost of participating in the task could be low enough for lab subjects to be indifferent between exerting effort and waiting while others exert effort. The outside option increases the costs of participating in the donation task, so that subjects that are not altruistic and not concerned about social image should not participate in the task – as predicted by the model.

[6] We conducted a pilot study of our experimental design online on Amazon Mechanical Turk ($N = 408$) to inform the choice between a within-subject and a between-subject design. To address concerns that a crowding-out effect of incentives may arise either only in an environment where incentives are introduced as a policy change (within-subject) or only in a market design where people are unaware of alternative institutional environments, we also considered an experimental design that allowed us to study the transition from a single market *NOT PAID* or single market *PAID* market design to a dual market *CHOOSE* market design. In this alternative design, we introduced the dual market to subjects after a first round in the single market design. We did not find evidence that the single market design has any persistent effects. Between- and within-subject designs led to qualitatively similar results. We conclude that the initial treatment has no impact on the effectiveness of the *CHOOSE* treatment. For the current project, we opt for a between-subject design to minimize potential confounders and demand effects (Charness, Gneezy and Kuhn, 2012). Online Appendix F summarizes the pilot.

After being assigned to one of six treatments, subjects independently engage in the donation task. After the first round, subjects learn that there will be two more rounds of this task. This lets us test our hypotheses both on the extensive and the intensive margin. Irrespective of the treatment, in each of the three rounds can choose between participating in the donation task or skipping. Throughout the experiment, we use tokens as experimental currency. One token is worth 0.04 euro.

3.2. Treatments

Along the first dimension of the 3×2 between-subject design we vary the market design, i.e. the availability of incentives to participate in the donation task. In the first two treatments, we either provide monetary incentives to participate in the donation task (single market *PAID* treatment) or no monetary incentives (single market *NOT PAID* treatment). In the third treatment (dual market *CHOOSE* treatment), subjects are presented with both the options of a not paid and a paid donation.

The payoffs are set such that donating generates more value for the charity (100 tokens) than the outside option for the subject (75 tokens). When subjects donate and receive monetary incentives for their donation (50 tokens), those reduce the value to charity (from 100 to 50 tokens). Note that the monetary incentives are always smaller than the outside option. Table 2 summarizes the choice set in each of the three treatments and the associated monetary payoffs in tokens.

Table 2: Payoffs to Subject and Benefits to Charity, by Treatment and Subject Choice (Experimental Currency: "tokens", 1 token = 0.04 euro)

Treatment	Action space	Payoff to subject	Benefit to charity
NOT PAID	Donate not paid	0	100
	Skip	75	0
PAID	Donate paid	50	50
	Skip	75	0
CHOOSE	Donate not paid	0	100
	Donate paid	50	50
	Skip	75	0

Along the second dimension of the 3×2 between-subject design we vary the visibility of subject actions to make public image salient. In the *PRIVATE* treatment, subjects are informed that their actions will remain anonymous. Subjects are seated at desktop computers separated by divider walls and curtains. To maximize anonymity and to rule out that subjects hear each other type while working on the real-effort task, we play a white noise sound using loudspeakers in the laboratory. We verified that the white noise indeed makes it impossible to hear typing from other workstations. We

did not receive any complaints from subjects about this measure. In the *PUBLIC* treatment, before beginning the donation task, we inform subjects that they will be asked to reveal their actions in this task in front of all other subjects in this session. Social image effects thus reflect the full decision environment, including the incentive choice in the dual market *CHOOSE* treatment, that each subject is in. After completing all three rounds we ask subjects to publicly report the number of donations they made.[7] Subjects do so by standing up next to their computer in front of the divider walls. There is no explicit requirement to truthfully report this information.[8] Note, however, that reporting takes place after all decisions have been made.

3.3. Procedures

Our theoretical framework asserts that more altruistic individuals are, ceteris paribus, more likely to donate to charity. To check that individual levels of altruism are balanced across treatments, we let all subjects play a simple dictator game before beginning the main experimental task that lets subjects donate to charity.[9] In this dictator game, each subject is randomly and anonymously paired with another subject and chooses to split 20 tokens between herself and the anonymous partner. After testing for subject comprehensions, we let both subjects of the pair play the game as the dictator. At the end of the experiment, the experimental software randomly determines which of the two subjects determines payoffs and the game is resolved.

We then introduce a menu of four charities. Three of those charities are chosen because they are assumed to be well-known among subjects: Doctors Without Borders, the International Committee of the Red Cross, and the World Wildlife Fund. We additionally included the Against Malaria Foundation, which is rated as one of the most effective charities by the independent charity evaluator GiveWell. Subjects are given a short description of each charity. We then let each subject choose the charity that they prefer to donate to throughout the experiment. We do this to reduce potential noise from heterogeneous taste for donations to a specific charity. In order to verify balance across treatments, we ask subjects to rate how they perceive each of the charities and how likely they would be to donate money to each of them. Finally, we let subjects practice the donation task before engaging in it for three rounds. In the *PUBLIC* treat-

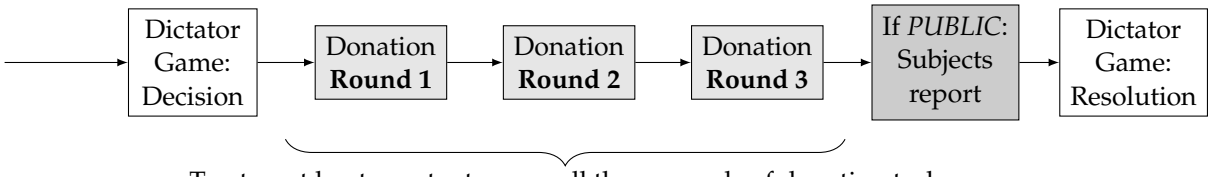
[7] The intention behind not having subjects reveal the incentives under which they donated was to avoid confusion from learning about other treatments.

[8] As an alternative design, we could have publicly announced actual subject choices at the end of the experiment. We decided against this design to stay closer to the theoretical framework of Benabou and Tirole (2006), where the desire to signal altruism has both instrumental and hedonic origins. We allow for both motivations by letting subjects state their own actions. To maintain the ecological validity of revealing a prosocial action, we do not force subjects to say the truth.

[9] While giving in the dictator game is a well-established measure of generosity vis-à-vis others, it is likely confounded by perceived social norms. As a result, we only rely on our measure of altruism as a balance check, but not to establish key empirical results or to analyze heterogeneous treatment effects.

ment, subjects publicly report their actions after the third round of the donation task. Figure 1 summarizes the sequence of tasks in the experiment.

Figure 1: Sequence of the Experiment



At the end of the experiment, we collect demographic data. After each session, we confidentially pay out the show-up fee and any earnings that subjects have generated for themselves in the dictator game and the donation task. We also inform subjects about the amount of money donated to charity on their behalf and provide information on how to obtain a confirmation of the donation on their behalf.

We implement the computerized experiment in oTree with our own modifications written in Python and JavaScript (Chen, Schonger and Wickens, 2016). A total of 18 experimental sessions were conducted in German at the BonnEconLab in Bonn, Germany, in April 2017 ($n = 329$). Sessions included 20 to 24 subjects and lasted approximately 40 minutes. All subjects are students from various majors at the University of Bonn. They are on average 22 years old, 61% are female. Table 3 summarizes the sample. On average, participants earned 10.70 euro for themselves and generated 4 euro for charity.[10]

We can verify that the sample is balanced on observable characteristics, including our measure of altruism measured by the dictator game and preference for the chosen charity. Using a nonparametric one-way ANOVA on ranks (Kruskal-Wallis) test, we fail to reject the null hypothesis that the subject pool exhibits the same characteristics across all treatment groups at the 95% level (Table 3, column 8).

[10]Subjects from the pool of the BonnEconLab were invited using hroot (Bock, Baetge and Nicklisch, 2014). Invitations were restricted to students of the University of Bonn, aged 18–25, with no more than one no-show in prior experiments. Online Appendix B provides further details.

Table 3: Summary Statistics of Observable Characteristics,
Full Sample and by Treatment (Means and Standard Errors in Parentheses)

	Full Sample	Private			Public			p-value
		Not paid	Paid	Choose	Not paid	Paid	Choose	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
a) Measured before treatment								
DG: Tokens kept	15.365	14.891	15.271	15.250	15.021	15.677	15.818	0.848
	(0.214)	(0.621)	(0.558)	(0.507)	(0.618)	(0.501)	(0.411)	
Charity rating	4.602	4.783	4.604	4.583	4.660	4.532	4.515	0.131
	(0.043)	(0.087)	(0.129)	(0.072)	(0.102)	(0.123)	(0.100)	
b) Socioeconomic characteristics, measured after treatment								
Age	21.544	21.630	21.708	21.717	21.511	21.210	21.545	0.499
	(0.091)	(0.263)	(0.223)	(0.213)	(0.263)	(0.184)	(0.207)	
Female	0.611	0.630	0.521	0.717	0.574	0.613	0.591	0.429
	(0.027)	(0.072)	(0.073)	(0.059)	(0.073)	(0.062)	(0.061)	
College major	4.398	4.239	4.417	4.400	4.383	4.661	4.258	0.814
	(0.100)	(0.277)	(0.258)	(0.224)	(0.273)	(0.236)	(0.221)	
Observations	329	46	48	60	47	62	66	

Notes: p-value in column (8) is for a one-way ANOVA on ranks (Kruskal-Wallis) test comparing the six treatment groups in columns (2) to (7). DG refers to the dictator game, in which we gave 20 experimental tokens to participants and asked them how many they would like to keep. Charity rating refers to the rating that subjects gave to the charity that they chose to donate to. We asked subjects to agree to the statement "I like the idea of donating money to [chosen charity]" on a 5-point Likert scale where 1 is "strongly disagree" and 5 is "strongly agree". College major is a categorical variable that summarizes the departmental affiliation of our student subjects.

4. Results

Recall that in each of the three rounds of the donation task, subjects can decide to participate in or skip the task. In our discussion of results, we consider each participation in the task as one "donation" (all subjects who choose to participate in the donation task complete it). Participation in the first round of the donation task lets us measure the extensive margin of the donation decision. By summing the number of donations across all three rounds, we can additionally analyze an intensive margin of the decision to donate.

Table 4 summarizes those measures and gives an overview of donation behavior across treatments. Panel I presents the fraction of subjects who decide to participate in each round while panel II sums the number of rounds that subjects decide to participate in the donation task. For subjects in the dual market *CHOOSE* treatment, columns (4) and (5) report whether subjects choose to be paid. In line with our theoretical predictions, donation behavior in the single market *PAID* and the dual market *CHOOSE*

treatments is statistically indistinguishable (column 6), both on the extensive margin and the intensive margin.

Table 4: Summary Statistics of Behavior in Donation Task
(Fractions and Means, Standard Errors in Parentheses)

	Incentive Treatment			Incentive Choice		p-value
	Not paid	Paid	Choose	Not paid	Paid	H_0: Paid=Choose
	(1)	(2)	(3)	(4)	(5)	(6)
I. Fraction of subjects that participated in the task						
			a) PRIVATE treatment			
Round 1	0.609	0.604	0.667	0.083	0.583	0.504
	(0.072)	(0.071)	(0.061)	(0.036)	(0.064)	
Round 2	0.174	0.396	0.467	0.083	0.383	0.463
	(0.056)	(0.071)	(0.065)	(0.036)	(0.063)	
Round 3	0.348	0.313	0.383	0.067	0.317	0.446
	(0.070)	(0.067)	(0.063)	(0.032)	(0.061)	
Observations	46	48	60	60	60	
			b) PUBLIC treatment			
Round 1	0.766	0.806	0.818	0.136	0.682	0.866
	(0.062)	(0.050)	(0.048)	(0.043)	(0.058)	
Round 2	0.383	0.565	0.591	0.136	0.455	0.763
	(0.071)	(0.063)	(0.061)	(0.043)	(0.062)	
Round 3	0.362	0.484	0.530	0.136	0.394	0.601
	(0.070)	(0.064)	(0.062)	(0.043)	(0.061)	
Observations	47	62	66	66	66	
II. Average total number of rounds participated in the task						
			a) PRIVATE treatment			
Sum of all 3 rounds	1.130	1.313	1.517	0.233	1.283	0.290
	(0.129)	(0.142)	(0.135)	(0.072)	(0.132)	
Observations	46	48	60	60	60	
			b) PUBLIC treatment			
Sum of all 3 rounds	1.511	1.855	1.939	0.409	1.530	0.545
	(0.124)	(0.121)	(0.127)	(0.105)	(0.136)	
Observations	47	62	66	66	66	
			c) Aggregating over both visibility treatments			
Sum of all 3 rounds	1.323	1.618	1.738	0.325	1.413	0.348
	(0.092)	(0.095)	(0.094)	(0.066)	(0.096)	
Observations	93	110	126	126	126	

Notes: Total sample size is 329 subjects. Subjects can always choose between participating in the donation task or skipping. P-value in column (6) is for two-sample Wilcoxon rank-sum (Mann-Whitney) test comparing the outcomes for *PAID* treatment in column (2) and the *CHOOSE* treatment in column (3).

In the rest of this section, we pool together observations from *PAID* and *CHOOSE* treatments to estimate the effects of the availability of incentives on donations behavior. We use this pooled data to provide parametric tests of Hypotheses 1 and 2 on

the intensive margin.[11] We then use data from the dual market *CHOOSE* treatment to test Hypothesis 3, again on the intensive margin. We test our three hypotheses on the intensive margin due to better statistical power. Results are qualitatively similar on extensive margin based on the first round of the donation task. In addition to tests of our theoretical hypotheses, we discuss the potential interaction between incentive and visibility effects and analyze heterogeneous treatment effects across genders.

4.1. Incentive Effects, Social Image Effects, and Sorting

We test our first two hypotheses in a regression framework. Given the count nature of the outcome variable we use maximum likelihood to estimate the following Poisson regression:

$$\begin{aligned} Donations_i = \alpha + \beta_1 PAID\&CHOOSE_i + \beta_2 PUBLIC_i + \\ \beta_3 PAID\&CHOOSE_i \times PUBLIC_i + \boldsymbol{X}_i\boldsymbol{\gamma} + \psi_i \end{aligned} \tag{4.1}$$

where *Donations* is the total number of donations by subject i over all three rounds of the donation task, *PAID&CHOOSE* is a dummy for the pooled single market *PAID* treatment and the dual market *CHOOSE* treatment, *PUBLIC* is a dummy for the treatment in which subjects have to reveal their actions to other participants, $\boldsymbol{X}$ is a vector of controls, and ψ is a Poisson-distributed error term. Table 5 presents average marginal effect estimates while Appendix Table B1 presents the full set of estimated semi-elasticities.

Our results confirm our first behavioral hypothesis, which says that irrespective of whether actions are visible, the availability of incentives increases donations. We find that compared to the single market *NOT PAID* treatment, the availability of incentives does not induce lower participation in the donation task. This is true irrespective of the visibility of actions. The estimated average marginal effect in our specification without any other controls indicates that making incentives available leads to an increase of 0.364 donations over all three rounds (relative to a mean of 1.32 donations in the single market *UNPAID* treatment). The effect size is robust to various sets of controls. Introducing the number of tokens kept in the dictator game as an additional control (Table 5, columns 3 to 5) reveals that this measure of altruism is a strong predictor of participation in the donation task.

Result 1 (Incentive Effect). *Irrespective of whether actions are visible, the availability of incentives increases donations.*

[11] Online Appendix C establishes the same results using non-parametric tests.

Table 5: Poisson Regression for Total Donations: Average Marginal Effects
(Coefficient Estimates and Standard Errors in Parentheses)

Dependent variable:	# of donations over the three rounds				
	(1)	(2)	(3)	(4)	(5)
	a) Treatments				
PAID&CHOOSE *(Baseline: NOT PAID)*	0.364***	0.360***	0.432***	0.430***	0.456***
	(0.124)	(0.124)	(0.117)	(0.117)	(0.117)
PUBLIC *(Baseline: PRIVATE)*	0.454***	0.462***	0.498***	0.499***	0.494***
	(0.112)	(0.111)	(0.103)	(0.102)	(0.102)
	b) Controls				
Female		0.238**		0.075	0.030
		(0.116)		(0.110)	(0.110)
DG: Tokens kept			-0.099***	-0.097***	-0.090***
			(0.013)	(0.013)	(0.014)
Other Controls	No	No	No	No	Yes
Observations	329	329	329	329	329

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors are clustered at individual level. *NOT PAID* is the base market design treatment. *PRIVATE* is the base visibility treatment. DG refers to the dictator game, in which we gave 20 experimental tokens to subjects and asked them how many they would like to keep. Other controls are age, chosen charity, and individual rating of chosen charity. Note that due to the presentation of average marginal effects, the interaction (which cannot vary independently) is omitted.

We also find support for our second hypothesis of social image effects. Using the same Poisson regression in Equation (4.1), we find that irrespective of the incentive treatment, making actions visible significantly increases the number of donations over all three rounds. The effect of visibility is of similar magnitude to the incentive effect and is similarly robust to various sets of controls.

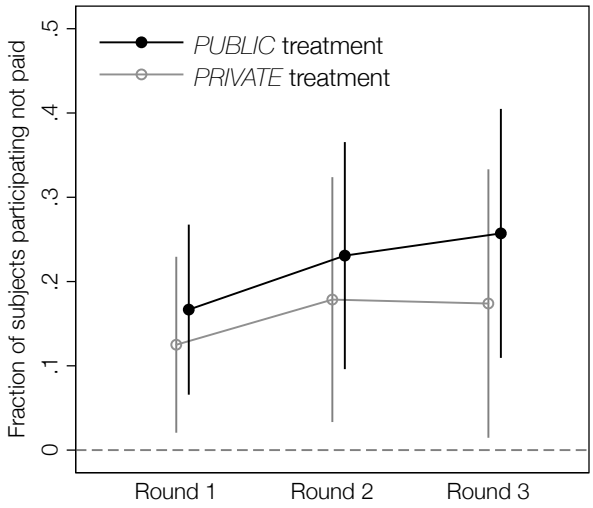
Result 2 (Social Image Effect). *Irrespective of whether compensation is available, making actions visible increases donations.*

We can use our experimental design to assess the potential interaction between incentive and visibility effects. A prominent result in the literature on charitable giving is that incentive effects negatively interact with image effects (Ariely et al., 2009). In our framework, in contrast, we do not find a negative interaction between image effects and incentive effects. In the presence of a salient outside option, small incentives to donate do not appear to spoil the image of donors. Appendix Table B1 presents semi-elasticities estimated from Equation (4.1), including for the interaction-term. We estimate a zero interaction effect that is robust across specifications.

Finally, our third behavioral hypothesis states that in a dual market, a positive fraction of donors chooses to be not paid, and that this fraction is larger when actions are observable. We can test this hypothesis by looking at all subjects in the dual market *CHOOSE* treatment.

In each of the three rounds and in each visibility treatment, the fraction of subjects deciding to not be paid for their donation is significantly larger than zero (Figure 2). Aggregating over the three rounds, subjects choose to make 0.23 donations without being paid in *PRIVATE* and 0.41 donations without being paid in *PUBLIC* (Table 4, panel II, column 4). This confirms the first part of our third hypothesis.

Figure 2: Fraction of Participating Subjects Turning Down Incentive in Donation Task, by Round



Notes: Bars indicate 95% confidence intervals. Standard errors clustered at the individual level.

Result 3 (Sorting into unpaid). *In a dual market, a positive share of agents chooses to be not paid.*

In order to analyze sorting into unpaid donations in the dual market *CHOOSE* treatment across visibility conditions, we estimate the following multinomial logit random effect model for the donation decision and the chosen incentive scheme. Each subject i takes decision $d_i \in \{\text{no participation, unpaid participation, paid participation}\}$:

$$d_{i,t} = \alpha + \beta PUBLIC_i + \boldsymbol{X}_i\boldsymbol{\gamma} + v_{i,t} \tag{4.2}$$

where for each subject i and round t, *PUBLIC* is a dummy for the treatment in which subjects have to reveal their actions, $\boldsymbol{X}$ is a vector of controls, and $v_{i,t} = c_i + u_{i,t}$ is the error term of the random effect model. Treatment assignment is permanent, but exogenous. While time invariance of treatment assignment makes the fixed effect model unidentifiable, exogenous treatment assignment meets the random effect assumption and makes this model specification the natural choice.[12]

The multinomial logit random effect model provides estimates for the relative probability of observing not paid rather than paid donations in the *CHOOSE* treatments.

[12] Any specification of the regression equation that includes individual characteristics is prone to bias and would require testing of the random effects assumption.

In the regression specification without controls, the relative probability increases by 77.3% when actions are visible, and the effect size is fairly stable in specifications with controls (see Table B2). While this confirms qualitatively the pattern from Figure 2, this increase is not statistically significant. We are not powered to detect a relative risk ratio that is significantly different from unity at any conventional confidence level.

4.2. Heterogenous Social Image Effects Across Genders

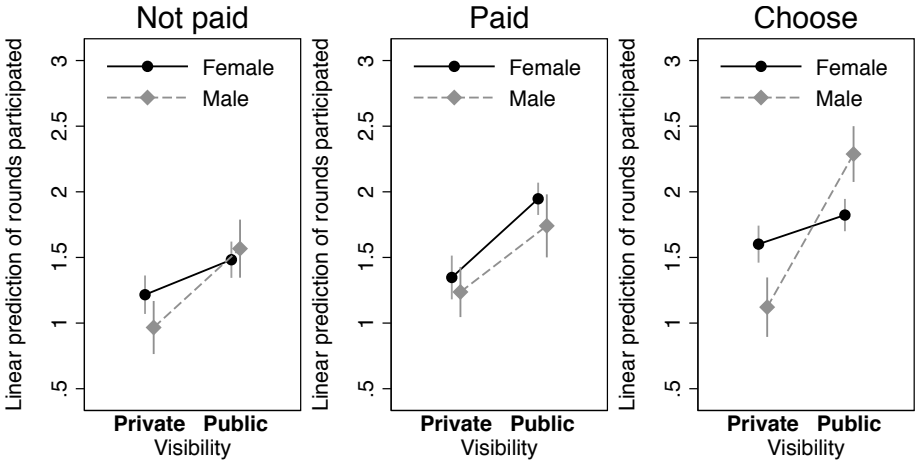
We find gender-specific effects in the *PUBLIC* treatment that suggest a differential willingness to engage in costly signaling: Making actions visible increases participation in the donation task significantly among men in the *NOT PAID* and *CHOOSE* treatment. For women, we find the inverse in that the increase is only significant in the *PAID* treatment.

Paralleling the analysis above, we use maximum likelihood estimates of a Poisson regression. For each incentive treatment, we separately estimate a model of the form:

$$\begin{aligned} Donations_i = \alpha + \beta_1 FEMALE + \beta_2 PUBLIC \\ + \beta_3 (FEMALE \times PUBLIC) + \beta_4 DG + \psi_i \end{aligned} \tag{4.3}$$

where for each subject i, $Donations_i$ is a count variable for number of individual donations over the three rounds of the donation task, and DG is the number of tokens kept in the dictator game. Table B3 presents estimates of the semi-elasticities, which reveal that the social image is significantly different across genders only in the dual market *CHOOSE* treatments. Figure 3 provides graphical illustration of the interaction effect by plotting the predicted participation in the donation task for each subsample. The heterogeneous effect of public image is particularly salient in the dual market *CHOOSE* treatment.

Figure 3: Gender-Specific Effects of Visibility Treatment, by Incentive Treatment (Linear Prediction of Rounds Participated, Based on Regressions in Table B3)



Notes: Bars indicate 95% confidence intervals. Standard errors clustered at the individual level.

We take this as suggestive evidence that men are more willing than women to engage in costly signaling. Recall that in our framework, choosing to participate in the donation task represents a signal that is differentially costly across the three donation treatments. Choosing to participate without being paid (either in the *NOT PAID* or *CHOOSE* treatments) carries the largest reputational gains, since subjects who engage in the real effort task incur the highest opportunity cost by leaving all value to the charity (i.e. they forego the outside option). In the *PAID* treatment, subjects can signal their altruism at a lower opportunity cost (i.e. they forego the outside option minus the individual compensation).

5. Discussion and Conclusion

Motivated by the market for blood donations in Germany, where different incentives for altruism coexist and donors can effectively turn down monetary incentives to donate, we set out to study a "dual market" for the collection of charitable donations. While incentives for prosocial behavior have mostly been studied in isolation and contrast to the absence of incentives, we explicitly allow agents to turn down a compensation for their donation.

In the case of blood donations in Germany, different blood collectors offer different incentives and prospective donors can choose where to donate. Donations at the Red Cross are always unpaid, while donations at hospitals or commercial blood banks are compensated with 20 to 30 euro. Everyone who lives in one of the 50 largest communities in Germany can reach an unpaid donation point of the Red Cross within 30

minutes time driving or on public transport. This compares to about 62% of the population who can reach a paid donation point within 30 minutes time using the same means of transport (see in the online appendix Table E2 for details and and Figure E1 for the spatial distribution of blood collection centers). In Meyer and Tripodi (2018) we survey knowledge of various institutions to donate blood in the city of Bonn and find awareness for paid and unpaid options to be similar (see in the online appendix Table E3).[13] While donors appear to be able to choose whether or not they want to be paid, unpaid donations still represent more than 70% of all donations in Germany (Paul-Ehrlich-Institut, 2018). Incidentally, the German market also has the highest per capita rate of donations among all 172 countries that report to the WHO and comparatively low wholesale prices for human blood.[14]

We study such a dual market in a stylized environment. The results from our laboratory experiment support our three behavioral hypotheses. We confirm our first hypothesis, which predicts that introducing a compensation for a donation should increase giving. In the dual market, the availability of extrinsic incentives does not crowd out intrinsic motivations of donors. In fact, giving significantly increases compared to the market design in which donations are not paid. These findings stand in contrast with the influential work of Titmuss (1971), who argued that paid blood donations could crowd out the intrinsic motivation to donate and lead to a net drop in donations.

For a simple illustration of the effect size, we can use the average marginal effects from the Poisson regression of the number of individual donations over the three rounds on treatment indicators, a gender dummy, and the number of tokens kept in the dictator game (Table B4, column 5). Holding everything else constant, the predicted number of donations in a dual market is 0.473 standard deviations larger than in the single market where donations are not paid. This is equivalent to the estimated effect of moving from the 20th percentile to the 60th percentile in the distribution of "generosity" of subjects as measured by the dictator game, again holding everything else constant.

Offering a compensation and letting agents turn down the compensation lets the collection system leverage the heterogeneity in individual preferences. This enables

[13] Meyer and Tripodi (2018) interview about 1,000 randomly sampled customers of the municipal service center in Bonn, a mid-sized city in the west of Germany. Although the data is not representative for Germany, we take awareness of both paid and unpaid collection centers, for a rich set of demographic groups in an urban area, as confirmation that the choice between incentives for donating blood is indeed salient for a non-negligible share of the population.

[14] Germany has the highest number of donations at 57.3 per 1,000 people, compared to 49.2 in Sweden and 43.7 in the United States. The cost of one blood unit on the German wholesale market is among the lowest in the world at about $110, compared to $190 in Sweden and Switzerland (Trimborn, 2009) and about $211 in the United States (Toner, Pizzi, Leas, Ballas, Quigley and Goldfarb, 2012). We calculate per capita donations based on the total number of whole blood donations collected in the years 2011 to 2013 (World Health Organization, 2017). We use the latest year available for all countries that report to the WHO. Population data comes from the World Bank World Development Indicator database. Online appendix E provides more details on the German market for whole blood donations.

efficiency gains in the collection similar to those deriving from self-selection in second-degree price discrimination. Our sorting hypothesis states that in a dual market, a positive fraction of donors chooses to be not paid and that this fraction is bigger when actions are taken in public. We find that when given the option to turn down the compensation, a significant fraction of donors choose to do so, though we find only weak evidence that donors turn down incentives more in public than in private. This result complements the findings of Lacetera et al. (2014a), who conduct a field experiment in which the American Red Cross offers gift cards as incentive to donate blood. They report that after donating, virtually none (2%) of the offered cards were turned down. In their setting, the ability to turn down incentives is not salient to prospective donors in their decision to come to the donation drive. Moreover, there is no clear signaling motive for turning down the gift card. In our setting, the two incentive schemes carry different utility in terms of private benefit and signaling value. With this choice between the two different incentives schemes, our dual market should be more effective at leveraging heterogeneity in individual preferences.

Even though we cannot provide strong evidence that sorting operates through social image concerns, we do find robust support of our second hypothesis, which states that visibility of actions increases donations irrespective of the type of available incentives. We can again use the average marginal effects from Poisson regression (Table B4, column 4) to illustrate the effect size of social image. Making actions observable while holding everything else constant increases the predicted number of donations by 0.493 standard deviations. This is slightly larger than the estimated effect of moving from the 20th percentile to the 60th percentile in the distribution of "generosity" of subjects as measured by the dictator game, again holding everything else constant.

The single market *PAID* and *NOT PAID* treatments allow us to compare our findings to the existing literature. In contrast to previous work, we do not find that social image effects attenuate incentive effects (Ariely et al., 2009; Carpenter and Myers, 2010). Individuals in our experiment have an outside option that is larger than the monetary incentives to donate, so that *homo economicus* would never choose to donate. Both our work and Ariely et al. (2009) are based on the theoretical framework of Benabou and Tirole (2006). Our findings suggest that in this framework, a salient outside option makes incentivized donations more likely to signal altruism and less likely to signal greed. This attenuates the image-spoiling effects of incentives that can bring about a negative interaction between incentive and image effects.

Our findings also suggest a gender-specific willingness to engage in costly signaling that could be interpreted as consistent with gender-specific aversion to standing out (Jones and Linardi, 2014) as well as with costly signaling theory in evolutionary biology (Gintis et al., 2001; Smith and Bird, 2000) and strategic signalling of generosity among men (Barclay, 2010; Boehm and Regner, 2013; Eagly and Crowley, 1986; Iredale et al., 2008).

Our findings have implications for the design of mechanisms for the collection of charitable donations. Applied to the collection of whole blood donations, our results

could inform the design and regulation of systems that use monetary incentives. Because voluntary provision of blood donations is often insufficient (Whitaker, Rajbhandary, Kleinman, Harris and Kamani, 2016), demand for blood is likely increasing in the future (Greinacher, Fendrich, Brzenska, Kiefel and Hoffmann, 2011), and modern screening technologies appear sufficiently safe to counter adverse selection (Offergeld, Faensen, Ritter and Hamouda, 2005), several countries are now re-evaluating partial reliance on incentivized or paid donations (Lacetera et al., 2013). Even small efficiency gains in these collection systems can imply economically meaningful savings for public health budgets. In the Unites States alone, about 13.6 million blood units are collected every year at a total value of more than US$ 3 billion.[15] Our results suggest that having different institutions provide distinct incentive schemes can improve the efficiency of the market compared to the case of all institutions offering the same incentives. In such a market, collectors may be able to increase donations by making image concerns more salient. In the case of Germany, the institution that offers unremunerated donations and has most to gain from making donations visible – the Red Cross – in fact largely relies on highly visible mobile drives for its collection.

Our results point to various avenues for future research. First, it would be good to better understand the mechanisms through which sorting into unpaid donations operates both in the German blood market and in general. While our theoretical framework suggests that social image effects should play a key role, our experimental data provides only weak evidence to support this hypothesis. Second, our setting does not appear to suffer from the negative interaction of social image effects and incentive effects that has been found in the previous literature. Empirical studies to determine if and when incentives spoil image utility constitute fruitful avenue for future research. Third, we cannot rule out that specific features of our experimental task undermine the external validity of our findings. While we used a task that is popular in the literature because it is not inherently meaningful and lends itself to a test of subject motivation, there is scope for future work in less stylized settings. Finally, we hope this work stimulates theoretical efforts on the characterization of competitive aspects of dual markets that would allow us to better understand the endogenous formation and social welfare implications of such institutional arrangements–important matters from which we largely abstract in this paper.

[15] Back-of-the-envelope calculation based on 2007 US data from Toner, Pizzi, Leas, Ballas, Quigley and Goldfarb (2011).

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A. Appendix: Proofs

Proof of Proposition 1. The proposition is composed of two statements.

First statement: "*A dual market for donations increases contributions compared to a single market where no incentives are available.*"

When actions are private, the utility of any agent i can be re-written as

$$U_i(d,y) = \begin{cases} [a_i(B-y)+y-c]d, & \text{Dual Market: } y \in \{0,\tilde{y}\} \\ [a_iB-c]d, & \text{Single Market - No Incentives } y=0 \end{cases}$$

Availability of incentives $\tilde{y} > 0$ does not affect donation behavior of highly altruistic agents ($a_i > 1$), who can choose to turn down the incentive, gaining utility

$$a_iB - c > a_i(B-\tilde{y}) + \tilde{y} - c.$$

At the same time, the availability of incentives get agents for whom

$$a_iB - c < 0 < a_i(B-\tilde{y}) + \tilde{y} - c$$

involved in the donation.

When actions take place in public, the same as above applies for image-indifferent agents. Image-concerned agents will now focus instead on taking the action that sends the best possible signal about their degree of altruism. Independence in the distribution of the degree of altruism and image concern implies that image-concerned agents would never refrain from donating, as doing so would send the worst possible signal about their degree of altruism.

Second statement: "*Compared to a single market where conditional incentives are automatic and cannot be turned down, allowing to turn down incentives reduces the cost of collection without affecting the number of donations.*"

When actions are private, the utility of any agent i can be re-written as

$$U_i(d,y) = \begin{cases} [a_i(B-y)+y-c]d, & \text{Dual Market: } y \in \{0,\tilde{y}\} \\ [a_i(B-\tilde{y})+\tilde{y}-c]d, & \text{Single Market - with Incentives} \end{cases}$$

Define the share of highly altruistic agents as $s(a) = Pr(a_i > 1)$. Because $B > c$, a $s(a)$ share of agents would donate irrespective of the availability of incentives, even though their intrinsic motivation to donate is partially crowded out in a single market with incentives. Allowing agents, in a dual market, to sort out of incentives un-does the described crowding out of intrinsic motivation to donate and reduces the average cost of collection.

When actions take place in public, the same as in private applies for image-indifferent agents. For image concerned agents, we need to show that participation is unaffected

by the possibility of turning down incentives. Therefore, we need to show that in neither a single incentivized market nor in a dual market image concerned agents want to abstein from donating. The proof goes by contradiction.

In a dual market, suppose there exists a pure strategy equilibrium in which all image concerned agents were to not donate. Any one of these agents could deviate from the equilibrium by donating and turning down the compensation to mimic the most altruistic image indifferent agents. Such deviation would improve the reputation of this agent, hence her utility. A contradiction.

Similarly, in the single incentivized market the profitable deviation is represented by the reputational gain of donating with incentives.

□

B. Appendix: Additional Tables

Table B1: Poisson Regression for Total Individual Donations: Semi-Elasticities (Coefficient Estimates and Standard Errors in Parentheses)

Dependent variable:	# of donations over the three rounds				
	(1)	(2)	(3)	(4)	(5)
	a) Treatments				
Paid&Choose *(baseline Not Paid)*	0.232*	0.232*	0.261**	0.260**	0.294**
	(0.133)	(0.132)	(0.121)	(0.121)	(0.120)
Public *(baseline Private)*	0.290**	0.298**	0.299**	0.301**	0.320**
	(0.141)	(0.140)	(0.132)	(0.131)	(0.129)
Paid&Choose × Public	-0.004	-0.008	0.021	0.020	-0.010
	(0.163)	(0.162)	(0.152)	(0.152)	(0.150)
	b) Controls				
Female		0.151**		0.048	0.019
		(0.075)		(0.070)	(0.070)
DG: Dictator kept			-0.062***	-0.061***	-0.057***
			(0.009)	(0.009)	(0.009)
Other controls	No	No	No	No	Yes
Observations	329	329	329	329	329

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors are clustered at individual level. *NOT PAID* is the base market design treatment. *PRIVATE* is the base visibility treatment. Other controls include age, chosen charity, and individual rating of chosen charity.

Table B2: Random Effects Regressions: Relative Risk Ratios
(Coefficient Estimates and Standard Errors in Parentheses)

Dependent variable:	Incentive Choice				
	(1)	(2)	(3)	(4)	(5)
	a) Treatment				
Public	1.747	1.652	1.862	1.705	2.229
	(1.278)	(1.155)	(1.439)	(1.257)	(1.585)
	b) Controls				
Female		0.719		0.552	0.601
		(0.531)		(0.420)	(0.456)
DG: Tokens kept			0.928	0.915	0.934
			(0.104)	(0.102)	(0.104)
Other controls	No	No	No	No	Yes
Observations	378	378	378	378	378

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$ for relative risk ratios different from unity.
Notes: Standard errors are clustered at the individual level. *PRIVATE* is the base visibility treatment. The incentive choice dependent variable only applies to the 126 subjects in *CHOOSE* treatment over three rounds. Incentive choice takes value "0" if subject skips, "1" if participates unpaid, and "2" if participates paid to the donation task in a given round. The table reports relative risk ratio for outcome "1" unpaid participation and base outcome "2" paid participation.

Table B3: Poisson Regression for Total Individual Donations: Semi-Elasticities (Coefficient Estimates and Standard Errors in Parentheses)

	Incentive Treatment Subsamples		
	Not paid	Paid	Choose
	(1)	(2)	(3)
a) Gender dummy × visibility treatment			
Public	0.483*	0.342	0.713***
	(0.253)	(0.210)	(0.268)
Female	0.230	0.086	0.357
	(0.242)	(0.196)	(0.258)
Public × Female	-0.285	0.026	-0.584*
	(0.293)	(0.251)	(0.315)
b) Controls			
DG: Tokens kept	-0.050***	-0.053***	-0.083***
	(0.015)	(0.015)	(0.019)
Observations	93	110	126

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors are clustered at individual level. *NOT PAID* is the base market design treatment. *PRIVATE* is the base visibility treatment. DG refers to the dictator game, in which we gave 20 experimental tokens to subjects and asked them how many they would like to keep.

Table B4: Poisson Regression for Total Individual Donations
(Coefficient Estimates and Standard Errors in Parentheses)

Dependent variable:	# of donations over the three rounds					
	Semi-elasticities			Average marginal effects		
	(1)	(2)	(3)	(4)	(5)	(6)
	a) Treatments					
Paid	0.149	0.183	0.205	0.268**	0.322***	0.333***
	(0.157)	(0.142)	(0.140)	(0.129)	(0.121)	(0.118)
Choose	0.294**	0.318**	0.363***	0.409***	0.476***	0.512***
	(0.145)	(0.131)	(0.131)	(0.128)	(0.117)	(0.118)
Public	0.290**	0.301**	0.320**	0.451***	0.496***	0.492***
	(0.141)	(0.131)	(0.129)	(0.107)	(0.098)	(0.097)
Paid × Public	0.056	0.065	0.043			
	(0.189)	(0.175)	(0.172)			
Choose × Public	-0.044	-0.008	-0.043			
	(0.179)	(0.165)	(0.163)			
	b) Controls					
Female		0.040	0.010		0.064	0.016
		(0.069)	(0.070)		(0.109)	(0.111)
DG: Tokens kept		-0.062***	-0.057***		-0.097***	-0.091***
		(0.009)	(0.009)		(0.013)	(0.013)
Other controls	No	No	Yes	No	No	Yes
Observations	329	329	329	329	329	329

$^{*}p < 0.10$; $^{**}p < 0.05$; $^{***}p < 0.01$

Notes: Standard errors are clustered at individual level. *NOT PAID* is the base market design treatment. *PRIVATE* is the base visibility treatment. DG refers to the dictator game, in which we gave 20 experimental tokens to subjects and asked them how many they would like to keep. Other controls include age, chosen charity, and individual rating of chosen charity.

Sorting Into Incentives for Prosocial Behavior
Online Appendix (Not for Publication)

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This documents provides supplementary information to the paper "Sorting Into Incentives for Prosocial Behavior". The appendix is organized as follows:

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A. Outline of Experimental Design

Subjects in our laboratory experiment can generate donations to a charity by participating in a real-effort task. This task involves sequentially entering 400 key sequences on a computer keyboard. Donations generated with this real-effort task are paid out to a charity chosen by each subject. We use this task because it is not inherently meaningful and thus lends itself to a test of subject motivation. Variations of this task are frequently used in the literature. Subjects in our experiment can choose between engaging in the task (and generating a donation by completing it) or skipping the task and taking a fixed payoff as outside option.

The experiment employs a full 3×2 between-subject design, where each subject is randomly allocated to one of six treatments that exogenously change the environment in which she can participate in the experimental task. Once a subject is allocated to a treatment, she is given the opportunity to generate three donations to her chosen charity.

Along the first dimension of 3×2 design, we vary the market design, i.e. the availability of incentives to participate in the donation task. In the first two treatments, we either provide monetary incentives to participate in the donation task (single market *PAID* treatment) or no monetary incentives (single market *NOT PAID* treatment). In the third treatment (dual market *CHOOSE* treatment), subjects are presented with both options and can choose among them.

Along the second dimension of the 3×2 between-subject design we vary the visibility of subject actions to make public image salient. In the *PRIVATE* treatment, subjects are informed that their decisions will remain anonymous throughout the experimental session. In the *PUBLIC* treatment, subjects are informed before beginning the donation task that they will be asked to disclose to other participants their decisions in the donation task.

Given the between-subject design, each subject only knows about the decision environment in her own treatment.

A total of 18 experimental sessions were conducted at the BonnEconLab in Bonn, Germany, in April 2017 ($n = 329$). The session size ranged from 20 to 24 subjects. The experiment was conducted in German. On average, participants earned 10.70 euro for themselves and generated 4 euro for charity. Sessions lasted approximately 40 minutes.

B. Selection and Eligibility of Participants

All 329 participants were recruited from the subject pool of the BonnEconLab at the University of Bonn, Germany. BonnEconLab uses hroot (Bock, Baetge, & Nicklisch, 2014) to organize and administer lab sessions. Invitations were restricted to students of the University of Bonn, aged 18–25, with no more than one no-show in prior experiments.

Experimental subjects who participated on average 22 years old and have studied an average of 5 semesters at the University of Bonn. 61 percent of subjects are female.

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C. Non-Parametric Tests of Hypotheses 1 and 2

Given that treatment assignment is random and experimental subjects are balanced on observables across treatments, we can use non-parametric tests as an additional robustness check to our main results.

Non-parametric analysis confirms the first behavioral hypothesis, which says that irrespective of whether actions are visible, the availability of incentives increases donations. When actions are taken in *PRIVATE*, the average number of donations increases from 1.13 in *NOT PAID* to 1.43 in *PAID&CHOOSE*. When actions are taken in *PUBLIC*, the average number of donations increases from 1.51 in *NOT PAID* to 1.9 in *PAID&CHOOSE*. Pairwise two-sided Wilcoxon rank-sum (Mann-Whitney) tests confirm that making incentives available increases the number of donations both in PRIVATE ($z = -1.680$, $p = 0.093$) and in PUBLIC ($z = -2.520$, $p = 0.012$).

We also find support for our second hypothesis of social image effects. Irrespective of the incentive treatment, making actions visible significantly increases the number of donations over all three rounds. In the *NOT PAID* treatment, making actions visible increases the total number of donations from 1.13 in *PRIVATE* to 1.51 in *PUBLIC*. In *PAID&CHOOSE*, making actions visible increases donations from 1.43 to 1.9. Pairwise two-sided Wilcoxon rank-sum tests (Table 1 columns 3 and 4) reject equal distributions of donations between *PRIVATE* and *PUBLIC* treatments both in *NOT PAID* ($z = -2.247$, $p = 0.025$) and in *PAID&CHOOSE* ($z = -3.512$, $p < 0.001$) market designs.

Table 1 summarizes these test results.

Table 1: Incentive and Social Image Effects: Non-Parametric Analysis

	Not Paid vs. Paid&Choose		Private vs. Public	
	Private	Public	Not Paid	Paid&Choose
	(1)	(2)	(3)	(4)
Difference in average Donations	0.295	0.388	0.380	0.473
z-score	-1.680	-2.520	-2.247	-3.512
p-value	0.093	0.012	0.025	0.000
N	154	175	93	236

Notes: Test statistics are for the total number of rounds participated in the donation task based on a two-sample Wilcoxon rank-sum test.

D. Experimental Instructions

D.1. On-screen Instructions (German Original)

This section presents the German original of all instructions used in the software of the computerized laboratory experiment. Each subsection represents one screen of the experiment. We provide screenshots for selected parts of the experiment.

Herzlich willkommen!

Vielen Dank, dass Sie sich bereit erklärt haben, an diesem Experiment teilzunehmen. In diesem Experiment untersuchen wir karitative Tätigkeiten.

Diese Studie wird von Forschern des Instituts für Angewandte Mikroökonomik an der Uni Bonn durchgeführt.

Die Studie beginnt auf der nächsten Seite. Sie können die Seite wechseln, indem Sie auf den "Weiter" Button am Ende jeder Seite klicken. Bitte lesen Sie sich alle Beschreibungen und Anweisungen sorgfältig durch. Wenn Sie zu irgendeinem Zeitpunkt während des Experiments Fragen haben, heben Sie bitte Ihre Hand.

Warteseite

[Waiting page: Players are randomly paired for dictator game.]

Hintergrund und Aufbau des Experiments

Dieses Experiment untersucht karitative Tätigkeiten. Zunächst werden wir Ihnen eine Liste von vier wohltätigen Organisationen präsentieren und Sie bitten, darunter Ihre bevorzugte Organisation auszuwählen. Wir werden Sie dann bitten, zwei Aufgaben zu bearbeiten. In der zweiten Aufgabe können Sie durch Ihre Handlungen eine Geldspende für Ihre ausgewählte Organisation generieren. Wir werden diese Spende in Euro an die Organisation überweisen. Im Nachgang zu diesem Experiment erhalten Sie einen Nachweis über die Spende.

Zuerst werden Sie Aufgabe A bearbeiten. In dieser Aufgabe geben wir Ihnen einen festgelegten Geldbetrag. Sie müssen sich entscheiden, wie viel von diesem Geldbetrag Sie für sich behalten und wie viel Sie an einen anderen, anonymen und zufällig ausgewählten Teilnehmer des Experiments geben möchten. Ihr zufällig zugeteilter Partner wird die gleiche Entscheidung treffen. Am Ende des Experiments wird unsere Software zufällig ermitteln, ob Ihre Entscheidung oder die Entscheidung von Ihrem Partner für die Aufteilung des Geldbetrags zwischen Ihnen beiden entscheidend ist.

Danach werden Sie Aufgabe B bearbeiten. Dabei arbeiten Sie unabhängig von anderen Teilnehmern des Experiments an einer einfachen Aufgabe. Mit Ihren Handlungen in dieser Aufgabe können Sie eine Geldspende für Ihre ausgewählte wohltätige Organisation generieren. Diese Geldspende werden wir nach Abschluss des Experiments an die Organisation überweisen. Am Ende von Aufgabe B werden wir Sie außerdem auffordern, sich neben Ihren Computer zu stellen. Wir werden Sie dann öffentlich vor allen Teilnehmern des Experiments fragen, welche Entscheidungen Sie in Aufgabe B getroffen haben. Ihre Entscheidung in Aufgabe A bleibt hingegen geheim.[1]

An Stelle von Geldbeträgen werden wir in diesem Experiment Spielmarken verwenden. Diese Spielmarken werden am Ende des Experiments in Euro umgerechnet. Eine Spielmarke ist 0,04 EUR wert.

Es wird keine Überraschungen oder Tricks geben. Das Experiment wird genauso ablaufen, wie wir es hier beschrieben haben. Dieses Experiment ist Teil einer wissenschaftlichen Studie zum Verständnis von individuellem Verhalten. Bitte wählen Sie daher völlig frei und bedenken Sie, dass es keine "richtigen" oder "falschen" Antworten gibt. Sollten Sie zu irgendeinem Zeitpunkt Fragen haben, melden Sie sich bitte mit einem Handzeichen.

Wählen Sie Ihre bevorzugte wohltätige Organisation

Wir haben vier bekannte wohltätige Organisationen ausgesucht. Wir bitten Sie, aus dieser Liste Ihre bevorzugte Organisation auszuwählen. Wir werden auf Basis Ihrer Entscheidungen in diesem Experiment Geld an diese Organisation spenden. Im Nachgang zu diesem Experiment erhalten Sie einen Nachweis über die Spende.

Das Internationale Komitee vom Roten Kreuz (IKRK) ist eine unabhängige, neutrale Organisation, die den humanitären Schutz und die Unterstützung von Opfern von Krieg und bewaffneter Gewalt sicherstellt. Das IKRK ist Teil der Internationalen Rotkreuz- und Rothalbmondbewegung mit Millionen von freiwilligen Helfern weltweit. Das IKRK hat drei Friedensnobelpreise gewonnen.

Die Against Malaria Foundation (AMF) finanziert und verteilt Moskitonetze, insbesondere langlebige insektizidimprägnierte Netze, die zum Schutz vor Malaria in tropischen Ländern dienen. Unabhängige Beobachter bewerten Spenden an die AMF als eine der effektivsten Formen des Altruismus.

Ärzte ohne Grenzen, auch bekannt als "Médecins Sans Frontières" (MSF), ist eine internationale, nichtstaatliche Organisation. MSF leistet medizinische Nothilfe in Krisen- und Kriegsgebieten, für Opfer von Epidemien, Naturkatastrophen, und für Menschen, die von medizinischer Versorgung abgeschnitten sind. Die Organisation hat für ihre Arbeit einen Friedensnobelpreis gewonnen.

[1] In *PUBLIC* treatment.

Der World Wildlife Fund for Nature (WWF) ist die größte internationale Natur- und Umweltschutzorganisation. Der WWF setzt sich in mehr als tausend Projekten und in über einhundert Ländern weltweit für den Erhalt der biologischen Vielfalt der Erde ein.

An welche Organisation möchten Sie gerne spenden? [Dropdown menu]

Hinweis: Mit dieser Entscheidung legen Sie die Organisation fest, für die Sie im Laufe des Experiments Geldspenden generieren. Diese Entscheidung kann nicht rückgängig gemacht werden.

Wählen Sie Ihre bevorzugte wohltätige Organisation

Bitte bewerten Sie, ob Sie gerne für wohltätige Zwecke Geld an die vier aufgelisteten Organisationen spenden würden. Ihre Antworten haben keinen Einfluss auf den Wert Ihrer Spende in diesem Experiment.

Ich würde gerne für wohltätige Zwecke Geld spenden an: IKRK [5-Punkt Likert Skala: Stimme nicht zu / Stimme eher nicht zu / Unentschlossen / Stimme eher zu / Stimme zu]

Ich würde gerne für wohltätige Zwecke Geld spenden an: AMF [5-Punkt Likert Skala: Stimme nicht zu / Stimme eher nicht zu / Unentschlossen / Stimme eher zu / Stimme zu]

Ich würde gerne für wohltätige Zwecke Geld spenden an: MSF [5-Punkt Likert Skala: Stimme nicht zu / Stimme eher nicht zu / Unentschlossen / Stimme eher zu / Stimme zu]

Ich würde gerne für wohltätige Zwecke Geld spenden an: WWF [5-Punkt Likert Skala: Stimme nicht zu / Stimme eher nicht zu / Unentschlossen / Stimme eher zu / Stimme zu]

Aufgabe A: Anleitung

Wir werden nun mit der ersten Aufgabe beginnen.

Für diese Aufgabe wurde Ihnen anonym und nach dem Zufallsverfahren ein anderer Teilnehmer des Experiments als Partner zugeteilt.

Sie erhalten von uns 20 Spielmarken. Ihre Aufgabe ist es zu entscheiden, wie viele Spielmarken Sie für sich selbst behalten möchten. Ihr Partner wird die verbleibenden Spielmarken erhalten. Wenn Sie beispielsweise 16 von 20 Spielmarken behalten, wird Ihr Partner die verbleibenden 4 Spielmarken bekommen. Wenn Sie im umgekehrten Fall wollen, dass Ihr Partner 12 Spielmarken bekommt, sollten Sie nur 8 Spielmarken für sich selbst behalten.

Ihr zufällig zugeteilter Partner wird parallel die gleiche Entscheidung treffen. Am Ende des Experiments wird unsere Software zufällig ermitteln, ob Ihre Entscheidung oder die Entscheidung Ihres Partners für die Aufteilung des Geldbetrags zwischen Ihnen beiden entscheidend ist.

Auf der nächsten Seite werden wir Ihnen ein Beispiel zeigen. Damit möchten wir sicherstellen, dass Sie diese Erklärungen verstanden haben.

Aufgabe A: Beispiel

Schauen wir uns ein weiteres Beispiel an.

Nehmen wir an, dass Sie sich dazu entschieden haben 14 von 20 Spielmarken zu behalten. Ihr zugeteilter Partner hat sich entschieden 18 von 20 Spielmarken zu behalten.

Angenommen, unsere Software hat zufällig ermittelt, dass Ihre Entscheidung am Ende die Aufteilung des Geldbetrags bestimmt. Bedenken Sie, dass Ihre Entscheidung dann bestimmt, wie viele Spielmarken Sie bekommen und wie viele Spielmarken Ihr Partner erhält.

Wie viele Spielmarken bekommen Sie und wie viele bekommt Ihr Partner in diesem Beispiel?

Anzahl der Spielmarken, die Sie in diesem Beispiel erhalten würden [text field]

Anzahl der Spielmarken, die Ihr Partner in diesem Beispiel erhalten würde [text field]

Aufgabe A: Beispiel

Die Frage lautete: Nehmen wir an, dass Sie sich dazu entschieden haben 14 Spielmarken zu behalten. Ihr zugeteilter Partner hat sich entschieden 18 Spielmarken zu behalten. Angenommen, unsere Software hat zufällig ermittelt, dass Ihre Entscheidung am Ende die Aufteilung des Geldbetrags bestimmt. Wie viele Spielmarken bekommen Sie und wie viele bekommt Ihr Partner?

Lösung: Sie würden 14 Spielmarken erhalten. Ihr Partner würde (20 - 14 =) 6 Spielmarken erhalten.

Aufgabe A: Ihre Entscheidung

Entscheiden Sie sich jetzt, wie viele Spielmarken Sie für sich selbst behalten möchten.

I behalte (0 bis 20) [text field]

Aufgabe A: Abgeschlossen

Sie haben sich entschieden XX Spielmarken zu behalten. Falls unsere Software zufällig ermittelt, dass Ihre Entscheidung am Ende die Aufteilung des Geldbetrags bestimmt, wird Ihnen dieser Betrag am Ende des Experiments ausgezahlt.

Damit ist Aufgabe A abgeschlossen.

Wir fahren jetzt mit Aufgabe B fort.

Warteseite

[Waiting page: Players have to wait for all other participants to complete the first task.]

Aufgabe B: Erinnerung zur Vertraulichkeit Ihrer Entscheidungen

Wie Sie bereits in der Einverständniserklärung gelesen haben, werden in bestimmten Sitzungen dieses Experiments Ihre Handlungen vor anderen Teilnehmern des Experiments öffentlich gemacht.

Dies ist der Fall in der heutigen Sitzung.

Am Ende von Aufgabe B werden wir Sie auffordern, sich neben Ihre Kabine zu stellen. Wir werden Sie dann öffentlich vor allen Teilnehmern des Experiments fragen, welche Entscheidungen Sie in Aufgabe B getroffen haben. Ihre Entscheidung in Aufgabe A bleibt hingegen geheim. Weitere Anweisungen folgen nach Abschluss von Aufgabe B.[2]

Dies ist nicht der Fall in der heutigen Sitzung.

Alle Entscheidungen die Sie in Aufgabe A getroffen haben und alle Entscheidungen die Sie in Aufgabe B treffen werden bleiben geheim. Keiner der anderen Teilnehmer des Experiments wird erfahren, wie Sie sich entschieden haben.[3]

[2] In *PUBLIC* treatment.
[3] In *PRIVATE* treatment.

Aufgabe B: Anleitung

Aufgabe B: Training

Aufgabe B: Training beendet

Sie haben erfolgreich 200 Tastenkombinationen abgeschlossen. Damit hätten Sie nun eine Spende generiert. Bedenken Sie, dass dies nur ein Beispiel war.

Wir beginnen nun mit Aufgabe B. Durch die Teilnahme haben Sie die Möglichkeit eine Geldspende an [ausgewählte Organisation] zu generieren. Dazu müssen Sie wie in diesem Beispiel eine bestimmte Anzahl von Tastenkombinationen abschließen.

Aufgabe B: Anleitung

Sie können nun eine Spende erzeugen, indem Sie 400 Tastenkombinationen abschließen.

Bedenken Sie, dass wir Sie am Ende von Aufgabe B öffentlich vor allen Teilnehmern des Experiments fragen werden, wie Sie sich entschieden haben.[4]

Sie können für die von Ihnen ausgewählte Organisation eine Spende von 100 Spielmarken generieren, wenn Sie alle 400 Tastenkombinationen abschließen.

Alternativ können Sie diese Aufgabe überspringen. Sie würden dann keine Spende für die ausgewählte Organisation generieren. Ihnen würde ein festgelegter Betrag von 75 Spielmarken ausgezahlt werden.

Wie möchten Sie fortfahren?
- Spenden (100 Spielmarken für die wohltätige Organisation, 0 Spielmarken für Sie)
- Überspringen (0 Spielmarken für die wohltätige Organisation, 75 Spielmarken für Sie) [5]

Sie können für die von Ihnen ausgewählte Organisation eine Spende von 100 Spielmarken generieren, wenn Sie alle 400 Tastenkombinationen abschließen.

Als Bezahlung für Sie wird die Hälfte der Spielmarken von dieser Spende abgezogen und am Ende des Experiments an Sie ausgezahlt. Das bedeutet, dass Sie mit erfolgreichem Abschluss 50 Spielmarken für sich selbst und 50 Spielmarken als Spende für die wohltätige Organisation generieren.

Alternativ können Sie diese Aufgabe überspringen. Sie würden dann keine Spende für die ausgewählte Organisation generieren. Ihnen würde ein festgelegter Betrag von 75 Spielmarken ausgezahlt werden.

Wie möchten Sie fortfahren?
- Spenden (50 Spielmarken für die wohltätige Organisation, 50 Spielmarken für Sie)
- Überspringen (0 Spielmarken für die wohltätige Organisation, 75 Spielmarken für Sie) [6]

Sie können für die von Ihnen ausgewählte Organisation eine Spende von 100 Spielmarken generieren, wenn Sie alle 400 Tastenkombinationen abschließen.

Sie können sich entscheiden, ob Sie für Ihre Teilnahme nicht bezahlt oder bezahlt werden möchten. Wenn Sie bezahlt werden möchten, verringert sich der Wert der Spende an die von Ihnen ausgewählte wohltätige Organisation.

[4] In *PUBLIC* treatment.
[5] If *NOT PAID* treatment
[6] If *PAID* treatment

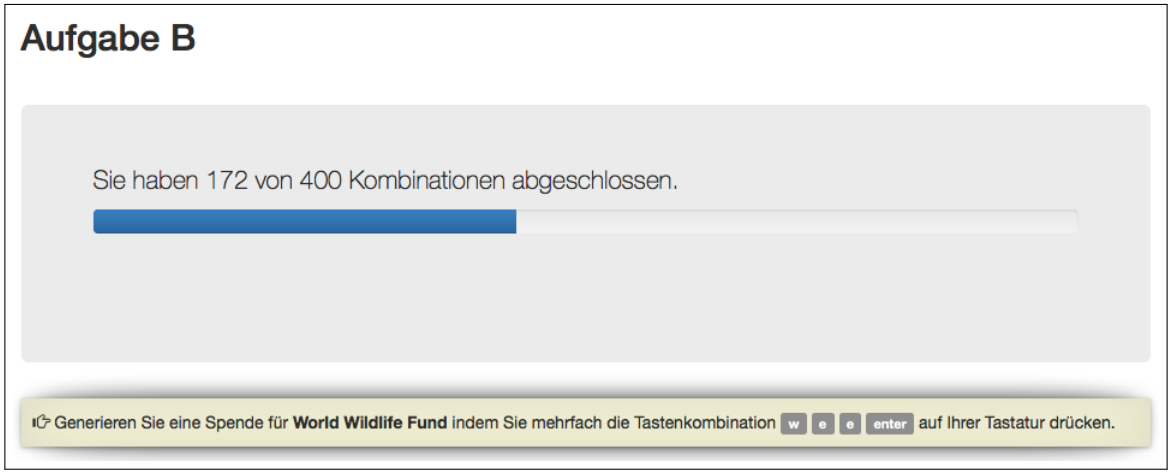
Wenn Sie sich entscheiden nicht bezahlt zu werden, wird der gesamte Betrag den Sie generieren an die ausgewählte Organisation gespendet. Das bedeutet, dass Sie mit erfolgreichem Abschluss 100 Spielmarken als Spende für die wohltätige Organisation generieren.

Wenn Sie sich entscheiden bezahlt zu werden, wird die Hälfte der Spielmarken von dieser Spende abgezogen und am Ende des Experiments an Sie ausgezahlt. Das bedeutet, dass Sie mit erfolgreichem Abschluss 50 Spielmarken für sich selbst und 50 Spielmarken als Spende für die wohltätige Organisation generieren.

Alternativ können Sie diese Aufgabe überspringen. Sie würden dann keine Spende für die ausgewählte Organisation generieren. Ihnen würde ein festgelegter Betrag von 75 Spielmarken ausgezahlt werden.

Wie möchten Sie fortfahren?
- Spenden, nicht bezahlt (100 Spielmarken für die wohltätige Organisation, 0 Spielmarken für Sie)
- Spenden, bezahlt (50 Spielmarken für die wohltätige Organisation, 50 Spielmarken für Sie)
- Überspringen (0 Spielmarken für die wohltätige Organisation, 75 Spielmarken für Sie) [7]

Aufgabe B



Aufgabe B: Abgeschlossen

Sie haben Runde 1/3 von Aufgabe B übersprungen und erhalten 75 Spielmarken für sich selbst. [8]

Sie haben Runde 1/3 von Aufgabe B abgeschlossen. Sie haben damit eine Spende im Wert von 100 Spielmarken für die von Ihnen ausgewählte wohltätige Organisation generiert. [9]

[7] If *CHOOSE* treatment
[8] If did not engage in the task. Any treatment.
[9] If engaged in the task, not paid. Either *NOT PAID* or *CHOOSE* treatment.

Sie haben Runde 1/3 von Aufgabe B abgeschlossen. Sie haben damit 50 Spielmarken für sich selbst und eine Spende im Wert von 50 Spielmarken für die von Ihnen ausgewählte wohltätige Organisation generiert.[10]

Sie werden diese Aufgabe für zwei weitere Runden bearbeiten können.

Wir kommen nun zu Runde 2/3 von Aufgabe B. Sie können erneut eine Spende generieren, indem Sie die erforderlichen Tastenkombinationen abschließen.

Aufgabe B (Runde 2/3): Anleitung

Sie können nun erneut eine Spende erzeugen, indem Sie 400 Tastenkombinationen abschließen.

Bedenken Sie, dass wir Sie am Ende von Aufgabe B öffentlich vor allen Teilnehmern des Experiments fragen werden, wie Sie sich entschieden haben.[11]

Sie können für die von Ihnen ausgewählte Organisation eine Spende von 100 Spielmarken generieren, wenn Sie alle 400 Tastenkombinationen abschließen.

Alternativ können Sie diese Aufgabe überspringen. Sie würden dann keine Spende für die ausgewählte Organisation generieren. Ihnen würde ein festgelegter Betrag von 75 Spielmarken ausgezahlt werden.

Wie möchten Sie fortfahren?
- Spenden (100 Spielmarken für die wohltätige Organisation, 0 Spielmarken für Sie)
- Überspringen (0 Spielmarken für die wohltätige Organisation, 75 Spielmarken für Sie) [12]

Sie können für die von Ihnen ausgewählte Organisation eine Spende von 100 Spielmarken generieren, wenn Sie alle 400 Tastenkombinationen abschließen.

Als Bezahlung für Sie wird die Hälfte der Spielmarken von dieser Spende abgezogen und am Ende des Experiments an Sie ausgezahlt. Das bedeutet, dass Sie mit erfolgreichem Abschluss 50 Spielmarken für sich selbst und 50 Spielmarken als Spende für die wohltätige Organisation generieren.

Alternativ können Sie diese Aufgabe überspringen. Sie würden dann keine Spende für die ausgewählte Organisation generieren. Ihnen würde ein festgelegter Betrag von 75 Spielmarken ausgezahlt werden.

Wie möchten Sie fortfahren?
- Spenden (50 Spielmarken für die wohltätige Organisation, 50 Spielmarken für Sie)
- Überspringen (0 Spielmarken für die wohltätige Organisation, 75 Spielmarken für Sie) [13]

Sie können für die von Ihnen ausgewählte Organisation eine Spende von 100 Spielmarken generieren, wenn Sie alle 400 Tastenkombinationen abschließen.

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[10] If engaged in the task, paid. Either *PAID* or *CHOOSE* treatment.
[11] In *PUBLIC* treatment.
[12] If *NOT PAID* treatment
[13] If *PAID* treatment

Sie können sich entscheiden, ob Sie für Ihre Teilnahme nicht bezahlt oder bezahlt werden möchten. Wenn Sie bezahlt werden möchten, verringert sich der Wert der Spende an die von Ihnen ausgewählte wohltätige Organisation.

Wenn Sie sich entscheiden nicht bezahlt zu werden, wird der gesamte Betrag den Sie generieren an die ausgewählte Organisation gespendet. Das bedeutet, dass Sie mit erfolgreichem Abschluss 100 Spielmarken als Spende für die wohltätige Organisation generieren.

Wenn Sie sich entscheiden bezahlt zu werden, wird die Hälfte der Spielmarken von dieser Spende abgezogen und am Ende des Experiments an Sie ausgezahlt. Das bedeutet, dass Sie mit erfolgreichem Abschluss 50 Spielmarken für sich selbst und 50 Spielmarken als Spende für die wohltätige Organisation generieren.

Alternativ können Sie diese Aufgabe überspringen. Sie würden dann keine Spende für die ausgewählte Organisation generieren. Ihnen würde ein festgelegter Betrag von 75 Spielmarken ausgezahlt werden.

Wie möchten Sie fortfahren?
- Spenden, nicht bezahlt (100 Spielmarken für die wohltätige Organisation, 0 Spielmarken für Sie)
- Spenden, bezahlt (50 Spielmarken für die wohltätige Organisation, 50 Spielmarken für Sie)
- Überspringen (0 Spielmarken für die wohltätige Organisation, 75 Spielmarken für Sie) [14]

Aufgabe B (Runde 2/3)

[same as previous round]

Aufgabe B (Runde 2/3): Abgeschlossen

Sie haben Runde 2/3 von Aufgabe B übersprungen und erhalten 75 Spielmarken für sich selbst.[15]

Sie haben Runde 1/3 von Aufgabe B abgeschlossen. Sie haben damit eine Spende im Wert von 100 Spielmarken für die von Ihnen ausgewählte wohltätige Organisation generiert.[16]

Sie haben Runde 1/3 von Aufgabe B abgeschlossen. Sie haben damit 50 Spielmarken für sich selbst und eine Spende im Wert von 50 Spielmarken für die von Ihnen ausgewählte wohltätige Organisation generiert.[17]

Wir kommen nun zu Runde 3/3 von Aufgabe B. Sie können erneut eine Spende generieren, indem Sie die erforderlichen Tastenkombinationen abschließen.

[14] If *CHOOSE* treatment
[15] If did not engage in the task. Any treatment.
[16] If engaged in the task, not paid. Either *NOT PAID* or *CHOOSE* treatment.
[17] If engaged in the task, paid. Either *PAID* or *CHOOSE* treatment.

Aufgabe B (Runde 3/3): Erklärung

[same as previous round]

Aufgabe B (Runde 3/3)

[same as previous round]

Aufgabe B (Runde 3/3): Abgeschlossen

Sie haben Runde 2/3 von Aufgabe B übersprungen und erhalten 75 Spielmarken für sich selbst.[18]

Sie haben Runde 1/3 von Aufgabe B abgeschlossen. Sie haben damit eine Spende im Wert von 100 Spielmarken für die von Ihnen ausgewählte wohltätige Organisation generiert.[19]

Sie haben Runde 1/3 von Aufgabe B abgeschlossen. Sie haben damit 50 Spielmarken für sich selbst und eine Spende im Wert von 50 Spielmarken für die von Ihnen ausgewählte wohltätige Organisation generiert.[20]

Damit ist Aufgabe B abgeschlossen. Bevor wir mit dem Experiment fertig sind, möchten wir abschließend noch einige Informationen sammeln.

Bitte beachten Sie, dass Ihre Antworten auf die folgenden Fragen keinen Einfluss auf Ihre Auszahlung und Ihre Spenden an [ausgewählte Organisation] haben.

Warteseite

[Waiting page: Waiting for all other participants to complete task B]

Umfrage zu Ihren Spenden

Wir interessieren uns für Ihre Meinung zu diesem Experiment.

Sie haben sich in Aufgabe B dazu entschieden, in N von 3 Runden zu spenden>. In diesen 3 Runden haben Sie sich entschieden, M von 3 mal für die Spende bezahlt zu werden. In wie fern haben die folgenden Gründe eine Rolle in diesen Entscheidungen gespielt?[21]

Sie haben sich in Aufgabe B dazu entschieden, in N von 3 Runden zu spenden. In wie fern haben die folgenden Gründe eine Rolle in diesen Entscheidungen gespielt?[22]

[18] If did not engage in the task. Any treatment.
[19] If engaged in the task, not paid. Either *NOT PAID* or *CHOOSE* treatment.
[20] If engaged in the task, paid. Either *PAID* or *CHOOSE* treatment.
[21] In *CHOOSE* treatment.
[22] In *NOT PAID* or *PAID* treatment.

Ich verdiene es, für meine Zeit und meine Mühen entschädigt zu werden. [5-Punkt Likert Skala: Nicht wichtig / Eher nicht wichtig / Weder wichtig noch unwichtig / Eher wichtig / Wichtig]

Ich mag es generell nicht, Spenden an wohltätige Organisationen zu geben. [5-Punkt Likert Skala: Nicht wichtig / Eher nicht wichtig / Weder wichtig noch unwichtig / Eher wichtig / Wichtig]

Ich mag es generell, Spenden an wohltätige Organisationen zu geben, wollte aber an keine der angegebenen Organisationen spenden. [5-Punkt Likert Skala: Nicht wichtig / Eher nicht wichtig / Weder wichtig noch unwichtig / Eher wichtig / Wichtig]

Ich wollte das Geld, das ich verdient habe, nutzen um in anderer Form etwas Gutes zu tun. [5-Punkt Likert Skala: Nicht wichtig / Eher nicht wichtig / Weder wichtig noch unwichtig / Eher wichtig / Wichtig]

Es war mir egal. [5-Punkt Likert Skala: Nicht wichtig / Eher nicht wichtig / Weder wichtig noch unwichtig / Eher wichtig / Wichtig]

Umfrage zu demographischen Informationen

Vor Abschluss des Experiments würden wir gerne mehr über Ihren Hintergrund erfahren. Bitte beantworten Sie die folgenen Fragen.

Wie alt sind Sie? [dropdown list]

Was ist Ihre Geschlechtsidentität? [dropdown list]

Was ist Ihr Familienstand? [dropdown list]

Im wievielten Semester studieren Sie? [dropdown list]

In welcher Fakultät bzw. in welchem Fachbereich studieren Sie? [dropdown list]

Warteseite

[Waiting page: Waiting for other participants to complete the survey]

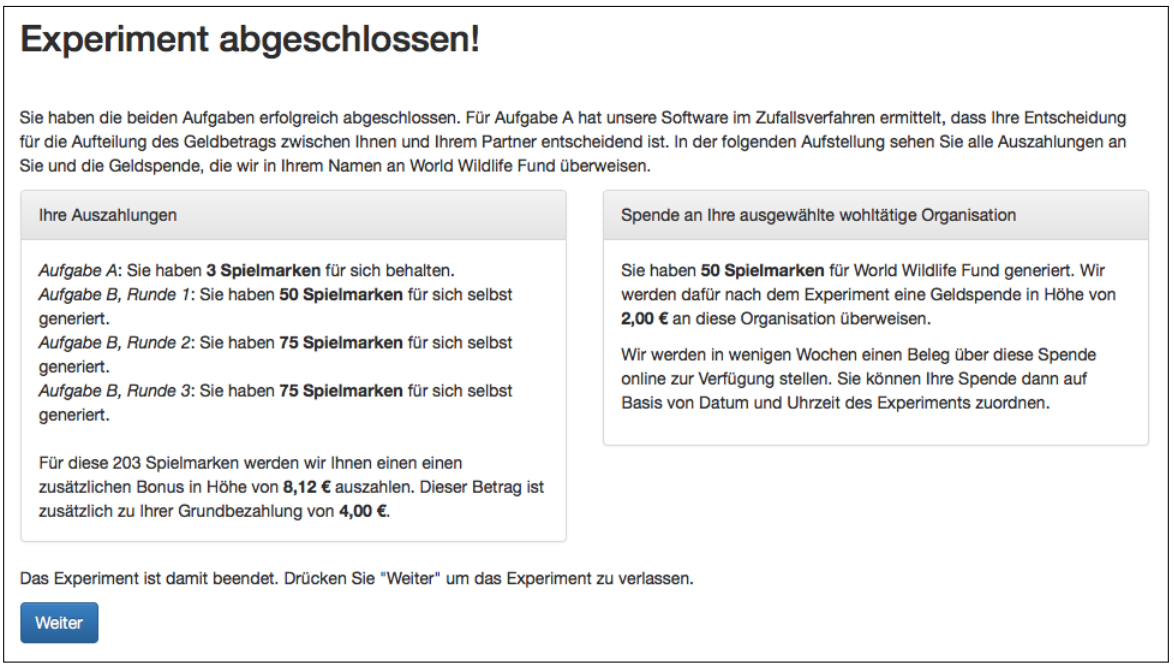
Bereiten Sie sich vor aufzustehen!

[Only displayed in *PUBLIC* treatment]

Wir werden Sie nun bitten, sich neben Ihre Kabine zu stellen. Wir werden Sie dann öffentlich vor allen Teilnehmern des Experiments fragen, welche Entscheidungen Sie in Aufgabe B getroffen haben.

Sie erinnern sich, dass Aufgabe B drei Runden hatte. Wenn wir Sie aufrufen, sagen Sie uns bitte laut und deutlich, wie oft Sie sich zu einer Spende in Aufgabe B entschieden haben.

Experiment Completed



Vielen Dank fur Ihre Teilnahme!

Damit ist das Experiment beendet. Bitte warten Sie auf weitere Anweisungen.

D.2. On-screen Instructions (English Translation)

This section presents English translations of all instructions used in the software of the computerized laboratory experiment. Each subsection represents one screen of the experiment. We provide screenshots for selected parts of the experiment.

Welcome!

Thank you for agreeing to participate in this experiment to study charitable giving.

This study is conducted by researchers at the Institute of Applied Microeconomics at the University of Bonn.

The study will start with the next screen. You will navigate the experimental software by pressing the button at the bottom of each page. Please read all descriptions and instructions carefully. If you have any questions at any point during the study, please raise your hand.

Waiting Page

[Waiting page: Players are randomly paired for dictator game.]

Background and Structure of the Experiment

This experiment is about charitable giving. You will be able to choose your favorite charity among a list of four charities and then engage in two tasks. In the second task, you can generate a donation to your chosen charity. We will give this donation in euro to the charity. We will give you a receipt and a proof of this donation.

You first engage in Task A. You will be given some money. You will have to decide how much to keep for yourself and how much to give to another participant who you are randomly and anonymously paired with. At the end of the experiment, the software will randomly choose whether you or your partner determine the payoffs for this task.

You will then engage in Task B. You will work independently on a simple assignment to generate money for your chosen charity. This money will be donated to your chosen charity. At the end of Task B we will invite you all to stand up next to your booth. We will ask you to publicly announce to everyone in this room what you did in Task B. Your choice in Task A will remain completely confidential.[23]

Instead of money, we will use tokens in this experiment. These will be converted to euros and paid to you in cash at the end of this session. Each token is worth 0.04 euro.

There will be no surprises or tricks. We will do everything we say in these instructions. This is an academic effort to understand individual choices, so please choose freely and remember that

[23] In *PUBLIC* treatment.

there are no right or wrong answers. If there is anything that you find confusing, please raise your hand and we will answer your question in private.

Choose Your Favorite Charity

We have chosen four popular charities. We will let you choose one of them to donate money to. We are going to give money to this organization on your behalf. We will give you a receipt and a proof of this donation.

The International Committee of the Red Cross (ICRC) is an independent, neutral organization that works worldwide to ensure humanitarian assistance for victims of war and armed violence. The ICRC is part of the International Red Cross and Red Crescent Movement with millions of volunteers around the world. It has won three Nobel Peace Prizes.

The Against Malaria Foundation (AMF) provides funding for long-lasting insecticide-treated net distributions (for protection against malaria) in developing countries. An independent organization specialized in evaluations of charities ranks donations to AMF as being among the most effective in terms of impact on societies.

Doctors Without Borders, also known as Médecins Sans Frontières (MSF) is an international NGO that provides emergency aid to people affected by armed conflict, epidemics, natural disasters and exclusion from healthcare. MSF provides medical care to people caught in crisis. It has won a Nobel Peace Prize for its work.

The World Wildlife Fund for Nature (WWF) is the largest international NGO providing preservation of natural wilderness supporting more than a thousand conservation and environmental projects in over a hundred countries all over the globe.

To which charity would you like to donate? [Dropdown menu with four options: ICRC/AMF/MSF/WWF]

Note: This choice determines the charity to which you will donate actual money throughout this experiment. This cannot be undone.

Choose Your Favorite Charity

Please tell us how much you like the idea of donating money to each of the four charitable organizations we just listed. The answers to these questions have no impact on the value of your donation.

I like the idea of donating money to the ICRC [5 options Likert scale: Strongly disagree/Disagree/Neither agree nor disagree/Agree/Strongly agree]

I like the idea of donating money to the AMF [5 options Likert scale: Strongly disagree/Disagree/Neither agree nor disagree/Agree/Strongly agree]

I like the idea of donating money to the MSF [5 options Likert scale: Strongly disagree/Disagree/Neither agree nor disagree/Agree/Strongly agree]

I like the idea of donating money to the WWF [5 options Likert scale: Strongly disagree/Disagree/Neither agree nor disagree/Agree/Strongly agree]

Task A: Instructions

We will now begin with the first task.

For this task, you are randomly and anonymously paired with another player in this session.

You are given a budget of 20 tokens. You can decide how many tokens to keep for yourself. The player you are paired with will receive the rest. For example, if you keep 16 out of 20 tokens, your partner will get the remaining 4 tokens. Conversely, if you want that your partner gets 12 tokens, you should keep 8 for yourself.

At the end of the experiment, the software will randomly choose whether you or the player you are paired with determines the payoffs for this task.

On the next page, you will have to answer a question to make sure you understand the instructions correctly.

Task A: Example

Let's look at an example to make sure you understand these instructions.

Suppose that you decided to keep 14 out of 20 tokens, while the player you are paired with decided to keep 18 out of 20 tokens.

Suppose you are randomly chosen to determine payoffs for this task. Remember that in that case, your decision determines how many tokens you get and how many tokens your partner gets.

In this example, how many tokens do you get and how many tokens does the player you are paired with get?

Number of tokens for you would be [text field]

Number of tokens given to the paired player would be [text field]

Task A: Example

The question was: Suppose that you decided to keep 14 tokens, while your partner decided to keep 18 tokens. Suppose you are randomly chosen to determine payoffs for this task. How many tokens do you get and how many tokens does your partner get?

Solution: Payoffs for yourself would be 14 tokens. Payoffs for your partner would be (20 - 14 =) 6 tokens.

Task A: Your Decision

Now please decide how many tokens you will keep for yourself.

I will keep (from 0 to 20) [text field]

Task A: Complete

You kept XX tokens, which will count towards your total compensation if your actions are selected to determine payoffs for this task.

This completes Task A.

We are now moving on to Task B.

Waiting Page

[Waiting page: Players have to wait for all other participants to complete the first task.]

Task B: Confidentiality Reminder

You may have seen on the consent form that some sessions of this experiment require you to stand up and tell us what you did during the experiment.

This is the case in today's session.

After you are done with Task B, you will be asked to publicly announce to everyone in this lab what you did in Task B. Instructions on when and how to do this will be provided later.[24]

This is not the case in today's session.

Everything you did in Task A and everything you will do in Task B will remain absolutely confidential.[25]

[24] In *PUBLIC* treatment.
[25] In *PRIVATE* treatment.

Task B: Explanation

Translation from German:

From now on, you will be able to engage in charitable giving by working on a simple assignment. Please carefully read instructions below. On the next page, you will have the chance to familiarize with this assignment in a training session. This will not affect your donation or payoff. After the training, we will explain the payoffs for this task.

[Text inside beige box:]

The assignment involves consecutively pressing the keys "w" "e" "e" "return" on your keyboard. You need to press the keys in this order. The keys are highlighted on the keyboard below. The software will display the number of successfully completed sequences.

[keyboard picture here]

You generate a donation to World Wildlife Fund by completing a given number of sequences. A bar will indicate your progress towards this number.

Task B: Training

Translation from German:

In this example, you are asked to complete 200 keystroke sequences to generate a donation. Remember that this is just an example so that you can familiarize yourself with this assignment.

[Text above progress bar:] You have completed 3/200 keystroke combinations.

[Text inside beige box:] Please complete the donation to World Wildlife Fund by pressing "w" "e" "e" "return" on your keyboard.

Task B: Training Completed

You successfully completed the 200 keystroke sequences required for generating a donation. Remember that this was just an example.

We now begin Task B. By engaging in Task B, you will be able to generate a donation to [chosen charity] by completing the required number of keystroke sequences.

Task B: Explanation

You can choose to generate a donation by completing 400 keystroke sequences.

Remember that at the end of Task B we will invite you all to stand up next to your booth. Each of you will be asked to reveal to all other participants what you decided to do in this Task.[26]

[26] In *PUBLIC* treatment.

By completing all 400 sequences, you generate a donation worth 100 tokens for the charity of your choice.

You can choose to skip this round. In this case, you will not generate any donations to charity. You will be paid a fixed amount of 75 tokens.

How would you like to proceed?
- Donate (by completing this round: 100 tokens for charity, 0 tokens for you)
- Skip this round (0 tokens for charity, 75 tokens for you) [27]

By completing all 400 sequences, you generate a donation worth 100 tokens for the charity of your choice.

In order to provide for your remuneration, half of the value of your donation will be deducted and given to you as payment. This means that by completing this round, you generate 50 tokens for yourself and 50 tokens for donation to charity.

You can choose to skip this round. In this case, you will not generate any donations to charity. You will be paid a fixed amount of 75.

How would you like to proceed?
- Donate (by completing this round: 50 tokens for charity, 50 tokens for you)
- Skip this round (0 tokens for charity, 75 tokens for you) [28]

By completing all 400 sequences, you generate a donation worth 100 tokens for the charity of your choice.

You are allowed to choose whether you want to be not paid or paid for participating. The decision to be paid results in a lower donation to the charity of your choice.

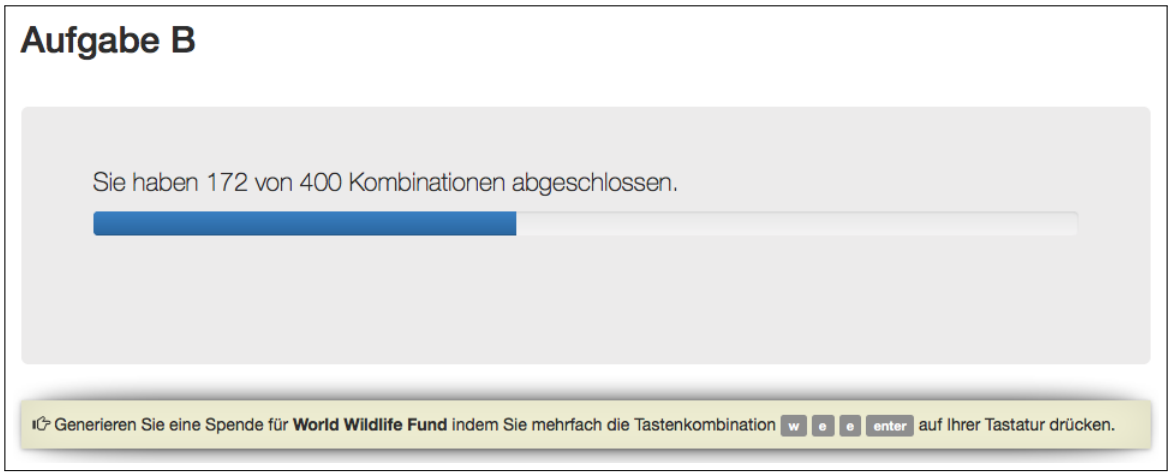
If you choose to be not paid, the full value you generate will be given to charity. This means that by completing this round, you generate 100 tokens for donation to charity. If you choose to be paid, half of the value of your donation will be deducted and given to you as payment. This means that by completing this round, you generate 50 tokens for yourself and 50 tokens for donation to charity.

You can choose to skip this round. In this case, you will not generate any donations to charity. You will be paid a fixed amount of 75 tokens.

How would you like to proceed?
- Not paid (by completing this round: 100 tokens for charity, 0 tokens for you)
- Paid (by completing this round: 50 tokens for charity, 50 tokens for you)
- Skip this round (0 tokens for charity, 75 tokens for you) [29]

[27] If *NOT PAID* treatment
[28] If *PAID* treatment
[29] If *CHOOSE* treatment

Task B



Translation from German:

[Text above progress bar:] You have completed 172/400 keystroke combinations.

[Text inside beige box:] Please complete the donation to World Wildlife Fund by pressing "w" "e" "e" "return" on your keyboard.

Task B: Completed

You skipped round 1 of Task B and received 75 for yourself.[30]

You successfully completed round 1/3 of Task B. You generated 100 tokens for the charity.[31]

You successfully completed round 1/3 of Task B. You generated 50 tokens for yourself and 50 tokens for the charity.[32]

You will engage in this task for 2 more rounds.

We now move to round 2/3 of Task B. You can again generate a donation by completing keystroke sequences.

Task B (Round 2/3): Explanation

You can again choose to generate a donation by completing 400 keystroke sequences.

Remember that at the end of Task B we will invite you all to stand up next to your booth. Each of you will be asked to reveal to all other participants what you decided to do in this Task.[33]

[30] If did not engage in the task. Any treatment.
[31] If engaged in the task, not paid. Either *NOT PAID* or *CHOOSE* treatment.
[32] If engaged in the task, paid. Either *PAID* or *CHOOSE* treatment.
[33] In *PUBLIC* treatment.

By completing all 400 sequences, you generate a donation worth 100 tokens for the charity of your choice.

You can choose to skip this round. In this case, you will not generate any donations to charity. You will be paid a fixed amount of 75 tokens.

How would you like to proceed?
- Donate (by completing this round: 100 tokens for charity, 0 tokens for you)
- Skip this round (0 tokens for charity, 75 tokens for you) [34]

By completing all 400 sequences, you generate a donation worth 100 tokens for the charity of your choice.

In order to provide for your remuneration, half of the value of your donation will be deducted and given to you as payment. This means that by completing this round, you generate 50 tokens for yourself and 50 tokens for donation to charity.

You can choose to skip this round. In this case, you will not generate any donations to charity. You will be paid a fixed amount of 75.

How would you like to proceed?
- Donate (by completing this round: 50 tokens for charity, 50 tokens for you)
- Skip this round (0 tokens for charity, 75 tokens for you) [35]

By completing all 400 sequences, you generate a donation worth 100 tokens for the charity of your choice.

You are allowed to choose whether you want to be not paid or paid for participating. The decision to be paid results in a lower donation to the charity of your choice.

If you choose to be not paid, the full value you generate will be given to charity. This means that by completing this round, you generate 100 tokens for donation to charity. If you choose to be paid, half of the value of your donation will be deducted and given to you as payment. This means that by completing this round, you generate 50 tokens for yourself and 50 tokens for donation to charity.

You can choose to skip this round. In this case, you will not generate any donations to charity. You will be paid a fixed amount of 75 tokens.

How would you like to proceed?
- Not paid (by completing this round: 100 tokens for charity, 0 tokens for you)
- Paid (by completing this round: 50 tokens for charity, 50 tokens for you)
- Skip this round (0 tokens for charity, 75 tokens for you) [36]

[34] If *NOT PAID* treatment
[35] If *PAID* treatment
[36] If *CHOOSE* treatment

Task B (Round 2/3)

[same as previous round]

Task B (Round 2/3): Completed

You skipped round 2 of Task B and received 75 for yourself.[37]

You successfully completed round 2/3 of Task B. You generated 100 tokens for the charity.[38]

You successfully completed round 2/3 of Task B. You generated 50 tokens for yourself and 50 tokens for the charity.[39]

We now move to round 3/3 of Task B. You can again generate a donation by completing keystroke sequences.

Task B (Round 3/3): Explanation

[same as previous round]

Task B (Round 3/3)

[same as previous round]

Task B (Round 3/3): Completed

You skipped round 3 of Task B and received 75 for yourself.[40]

You successfully completed round 3/3 of Task B. You generated 100 tokens for the charity.[41]

You successfully completed round 3/3 of Task B. You generated 50 tokens for yourself and 50 tokens for the charity.[42]

This completes Task B. Before we wrap up, we would like to collect some basic demographic information.

Please note that the answers to the survey are independent from your payoffs and the donation to (chosen charity).

[37] If did not engage in the task. Any treatment.
[38] If engaged in the task, not paid. Either *NOT PAID* or *CHOOSE* treatment.
[39] If engaged in the task, paid. Either *PAID* or *CHOOSE* treatment.
[40] If did not engage in the task. Any treatment.
[41] If engaged in the task, not paid. Either *NOT PAID* or *CHOOSE* treatment.
[42] If engaged in the task, paid. Either *PAID* or *CHOOSE* treatment.

Waiting Page

[Waiting page: Waiting for all other participants to complete task B]

Survey on Your Donations

We are interested in your views on this experiment.

In this experiment, you chose to engage N out of 3 times in Task B. You chose to be paid for your donations M out of 3 times. To what extent do you disagree or agree that each of the following motivations played a role in your decisions to engage in the task and to be paid or not to be paid.[43]

In this experiment, you chose to engage N out of 3 times in Task B. To what extent do you disagree or agree that each of the following motivations played a role in your decisions to engage in the task.[44]

I deserved to be compensated for my time and effort. [5 options Likert scale: Not important/Slightly important/Fairly important/Important/Very important]

I do not like the idea of donating to charity in general. [5 options Likert scale: Not important/Slightly important/Fairly important/Important/Very important]

I do like the idea of donating to charity, but did not want to donate to any of the organizations listed. [5 options Likert scale: Not important/Slightly important/Fairly important/Important/Very important]

I wanted to use the money I earned to do good in a different way. [5 options Likert scale: Not important/Slightly important/Fairly important/Important/Very important]

I did not care. [5 options Likert scale: Not important/Slightly important/Fairly important/Important/Very important]

Survey on Demographic Information

Before finishing, we would like to learn more about your background. Please answer the questions below.

What is your age? [dropdown list]

What is your gender? [dropdown list]

What is your marital status? [dropdown list]

What is your year (at university)? [dropdown list]

What is your major? [dropdown list]

[43] If *choose* treatment.
[44] If either *not paid* or *paid* treatment.

Waiting Page

[Waiting page: Waiting for other participants to complete the survey]

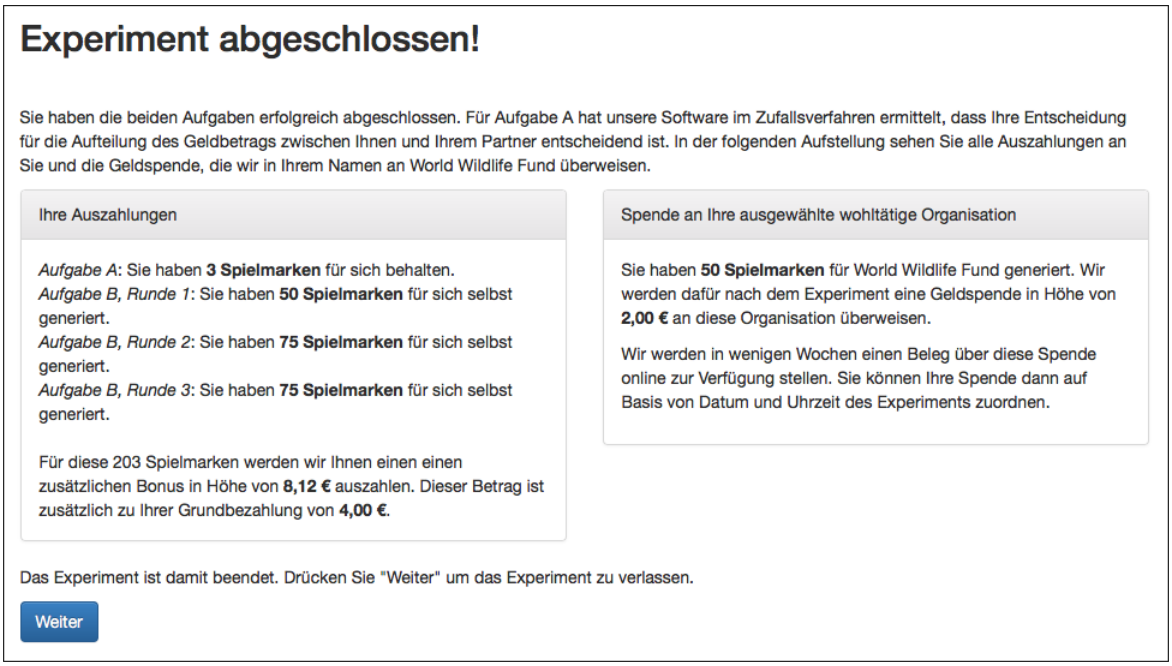
Prepare to Stand Up!

[Only displayed in *PUBLIC* treatment]

In a moment, we will ask you to stand up next to your booth. You will be asked to tell us about the decisions you took in Task B.

Remember there were three rounds of Task B. When we call you, please tell us how many times you participated in Task B.

Experiment Completed



You successfully completed both task. For Task A our software randomly determined that your decision on how to allocate money between you and your partner determines the payoffs for both of you.[45] *For Task A our software randomly determined that your partner's decision on how to allocate money between you and your partner determines the payoffs for both of you.*[46] *In the following table you see the payoffs to you and the donations that we will make to [chosen charity] on your behalf.*

[45] If randomly chosen to be player 1 (sender) in the dictator game.
[46] If randomly chosen to be player 2 (receiver) in the dictator game.

Your Payoffs

Task A: You kept 3 tokens for yourself.
Task B, Round 1: You generated 50 tokens for yourself.
Task B, Round 2: You generated 75 tokens for yourself.
Task B, Round 3: You generated 75 tokens for yourself.

For these 203 tokens, you will receive an additional bonus of 8.12 EUR. This payment is in addition to your base pay of 4.00 EUR.

Donations to Charity

You generated 50 tokens for (chosen charity). We will make a cash donation of 2.00 EUR to this organization after the end of the experiment.

In a few weeks we will provide a proof of donation online. You will be able to identify your donation using the date and time of the experiment.

The experiment is completed. Please click "next" to leave the experiment.

Thank you for participating!

This concludes the experiment. Please wait for further instructions.

D.3. Verbal Instructions (German Original)

This section presents all verbal instructions given to and read out in German by a research assistant at various points of the laboratory experiment.

Check-in and welcome

Willkommen zu unserem Experiment! Danke, dass Sie gekommen sind. Zu Ihrer Identifizierung brauche ich bitte Ihren Personalausweis.

[Wissenschaftlicher Mitarbeiter: Ausweis überprüfen]

Bitte nehmen Sie sich eine Einverständniserklärung. Bitte nehmen Sie Platz hier oder in Raum A und lesen Sie die Einverständniserklärung.Bitte lassen Sie mich wissen, falls Sie irgendwelche Fragen zu der Einverständniserklärung oder zu dem Experiment haben. Wenn Sie fertig sind, unterschreiben Sie bitte die Erklärung und geben Sie sie an mich zurück. Stifte finden Sie in Raum A. Ich werde Ihnen dann weitere Anweisungen geben.

Danke, dass Sie die Erklärung unterschrieben haben.

Bitte ziehen Sie eine Nummer und gehen Sie dann zu der Kabine mit dieser Nummer. Das Wasser-Geräusch ist lediglich für Ihre Privatsphäre. Bitte berühren Sie die Computer noch nicht und bitte warten Sie auf weitere Anweisungen.

[Sobald alle Teilnehmer(innen) sitzen]

Nochmal herzlich willkommen und vielen Dank für Ihre Teilnahme an diesem Experiment. Danke, dass Sie sich die Zeit genommen haben.

Das Ziel dieses Experiments ist es, individuelle Entscheidungen in zwei Aufgaben zu untersuchen. Falls Sie im Laufe des Experiments Fragen haben oder irgendwelche Unklarheiten aufkommen, heben Sie bitte Ihre Hand. Wir kommen dann zu Ihrer Kabine und beantworten Ihre Frage dort.

Bitte nehmen Sie sich an dieser Stelle auch einen Moment um sicherzustellen, dass Ihr Telefon lautlos oder im Flugzeugmodus ist, damit Sie das Experiment nicht stören.

Sie haben sicherlich das Wassergeräusch im Hintergrund bemerkt. Dies dient lediglich dazu, dass Sie die anderen Teilnehmer des Experiments nicht hören können und so nicht von ihnen verwirrt werden können. Dies dient lediglich Ihrer Privatsphäre und hat nichts mit dem eigentlichen Experiment zu tun.

Sobald wir das Experiment beginnen finden Sie alle nötigen Anweisungen und Erklärungen auf dem Bildschirm. Sie können dann die Software mit Ihrer Maus und Tastatur bedienen. Und noch mal: Wenn Sie an irgendeinem Punkt Fragen haben, heben Sie bitte Ihren Hand und wir kommen dann zu Ihnen.

Nach Abschluss des Experiments bitten wir Sie, ruhig an Ihrem Platz zu verbleiben und zu warten, bis alle Teilnehmer fertig sind.

Sobald alle Teilnehmer das Experiment abgeschlossen haben werden wir streng vertraulich Ihre Bezahlung abwickeln. Sie erhalten einen verschlossenen Umschlag mit Ihrer Bezahlung. Andere Teilnehmer werden nicht sehen können, wie viel Geld Sie ausgezahlt bekommen.

Bitte heben Sie nun ihre Hand, falls Sie Fragen haben.

[Fragen beantworten]

Sie können nun den Vorhang ihrer Kabine schließen und das Experiment beginnen.

Immediately before donation task

[Wissenschaftlicher Mitarbeiter: Lesen Sie bitte den folgenden Text, wenn alle Teilnehmer(innen) den Bildschirm "Aufgabe B: Erinnerung zur Vertraulichkeit Ihrer Entscheidungen" erreicht haben]

Wie Sie bereits in der Einverständniserklärung gelesen haben, werden in bestimmten Sitzungen dieses Experiments Ihre Handlungen vor anderen Teilnehmern des Experiments öffentlich gemacht.

*Dies *ist nicht der Fall* in der heutigen Sitzung.*

Wir wollen Ihnen erneut versichern, dass alle Entscheidungen, die Sie in diesem Experiment treffen, absolut geheim bleiben.[47]

Wie Sie bereits in der Einverständniserklärung gelesen haben, werden in bestimmten Sitzungen dieses Experiments Ihre Handlungen vor anderen Teilnehmern des Experiments öffentlich gemacht.

*Dies *ist der Fall* in der heutigen Sitzung.*

Am Ende von Aufgabe B werden wir Sie auffordern, sich vor Ihre Kabine zu stellen. Wir schalten dann das Wasser-Geräusch ab und werden Sie öffentlich vor allen Teilnehmern des Experiments fragen, welche Entscheidungen Sie in Aufgabe B – der nun folgenden Aufgabe – getroffen haben. Weitere Anweisungen dazu folgen nach Abschluss von Aufgabe B.[48]

Immediately after the donation task, PUBLIC treatment only

[Wissenschaftlicher Mitarbeiter: Lesen Sie bitte den folgenden Text, wenn alle Teilnehmer(innen) "Aufgabe B" abgeschlossen haben]

Wie Sie soeben auf Ihrem Bildschirm gelesen haben werden wir Sie nun fragen, welche Entscheidungen Sie in Aufgabe B getroffen haben.

Bitte stehen Sie jetzt auf und stellen sich vor ihre Kabine.

[47] In *PRIVATE* treatment only.
[48] In *PUBLIC* treatment only.

Ich werde nun jeden Teilnehmer einzeln aufrufen. Sie erinnern sich, dass Aufgabe B drei Runden hatte. Wenn ich Sie aufrufe, sagen Sie uns bitte laut und deutlich, wie oft Sie sich zu einer Spende in Aufgabe B entschieden haben. Alle anderen Teilnehmer bleiben bitte ruhig, bis ich Sie aufrufe.

Vielen Dank. Sie können nun wieder Platz nehmen. Sie können dann am Computer fortfahren und die letzte Seite des Experiments aufrufen. Auf der letzten Seite haben Sie 60 Sekunden Zeit, um zu sehen wie viel Geld Sie für sich selber und für die ausgewählte Organisation generiert haben.

Conclusion and check-out

Damit ist dieses Experiment abgeschlossen. Vielen Dank für Ihre Teilnahme.

Der Zweck dieses Experiments war es, Ihre Bereitschaft zu und Motivationen hinter wohltätigen Aktivitäten zu verstehen.

Wir gehen nun zu Ihrer Bezahlung über. Um dies schnell und geordnet abzuschließen werde ich nacheinander zu allen Kabinen kommen und Ihnen einen Beleg geben. Diesen Beleg unterschreiben Sie bitte in ihrer Kabine. Danach kommen Sie bitte in den Eingangsbereich. Dort erhalten Sie gegen Vorlage Ihres Belegs einen verschlossenen Umschlag mit Ihrer Bezahlung. In diesem Umschlag finden Sie auch Hinweise, wie Sie einen Beleg über Ihre Spende bekommen können.

[Wissenschaftlicher Mitarbeiter: Bitte Belege verteilen]

Beleg ausgeben in jeder Kabine: Bitte unterschreiben Sie dieses Formular. Sobald Sie fertig sind, kommen Sie bitte in den Eingangsbereich. Dort erhalten Sie gegen Vorlage des Belegs Ihre Bezahlung.

Bezahlung im Eingangsbereich: Vielen Dank. Sie finden in dem Umschlag Ihre Bezahlung sowie eine Anleitung, wie Sie online ab dem 1. Mai einen Beleg zu Ihrer Spende bekommen können.

D.4. Verbal Instructions (English Translation)

This section presents English translations of all verbal instructions given to and read out in German by a research assistant at various points of the laboratory experiment.

Check-in and welcome

Welcome to our lab! Thanks for coming! Let me please check your ID card.

[Research Assistant to check ID]

Please take a consent form. Take a seat anywhere here or in Room A, read it carefully. Please let me know if you have any questions. Sign and give back to me, pens are provided in the room. I will then provide further instructions

Thank you for signing the form.

Please draw a number and take the seat with this number in the large room next door. The water sound is just for your privacy. Please do not touch the computers yet. Wait for further instructions

[Once all subjects are seated]

Welcome again, and thank you for participating in this experiment. We appreciate that you're taking the time.

The purpose of this experiment is to study how people make decisions in two tasks.

If you have any questions at any point of the experiment please raise your arm. We will answer any questions privately by coming to your workstation.

This moment is a good opportunity to make sure that your cellphones are turned off or in airplane mode to not disturb the experiment.

You will have noticed that there is a background noise coming from all computers. This is just to make sure that you don't hear what other participants are doing, so that you are not distracted or confused by others during the experiment. This is just for your privacy and has nothing to do with the experiment.

You will find all necessary instructions and explanations on your screen. Once we tell you to get started, you can navigate through the software using your mouse and keyboard. Again, if you have any questions throughout, please raise your arm and we're here to help you.

Once you are done, we will ask you to sit quietly at your workstation and wait for everyone to finish.

Once all participants have completed the experiment, we will conclude the payments in strict confidentiality. You will receive an envelope with your payment. No other participant will be able to see how much you are paid.

Please raise your arm if you have any questions at this point.

[Take questions]

You may now close the curtain of your cabin and start with the experiment.

Immediately before donation task

[Research Assistant to read when all subjects arrive at screen "Task B: Confidentiality Reminder"]

You may have seen on the consent form that some sessions of this experiment require you to stand up and tell us what you did during the experiment.

*This is *not the case* in today's session*

We want to reassure you that everything you do throughout the experiment will remain absolutely confidential.[49]

You may have seen on the consent form that some sessions of this experiment require you to stand up and tell us what you did during the experiment.

*This *is the case* in today's session*

After you are done with Task B, we will ask you to stand up next to your workstation. We will then turn off the water sound and ask you to publicly announce in front of all other participants what you did in Task B. Instructions on when and how to do this will be provided later.[50]

Immediately after the donation task, PUBLIC treatment only

[Research Assistant to read once all subjects have completed "Task B"]

As you just read on your screen, we will now ask you to tell us what you did in the second task of the experiment.

Please all stand up next to your workstation now.

We will call on each one of you now. Remember there were three rounds of the second task. When we call you, please tell us how many times you participated in this task. Everyone else please remain silent until we call you.

Thank you very much. Please sit down again now. You may click the button to advance to the last page of the experiment. On the last page, you have 60 seconds to review how much money you made for yourself and for the charity.

[49] In *PRIVATE* treatment only.
[50] In *PUBLIC* treatment only.

Conclusion and check-out

This concludes the experiment, thank you very much for participating.

The purpose of this experiment was to assess your willingness and motivations to engage in charitable activities. By asking you to complete the keystroke combinations, we simulate the effort that it would take you, for example, to go donate blood. By asking you whether you want to participate in this activity or just take money and skip the task, we can estimate how willing you are to engage in charitable activities. If you want to learn more, we're happy to answer any questions you might have after everyone was paid. We'll do a short QA in Room A on your left.

We will now proceed to payments. To do this quickly and in an orderly manner, we will come to each one of you to provide you with a receipt. Please sign this receipt and come to the front of the lab. You can exchange your receipt for a closed envelope with your payoffs. In this envelope you will also find further instructions on how to obtain a proof of our donation on your behalf.

[Research Assistant to start handing out envelopes]

For payment processing at each desk: Please sign this form. When you are done, please come to the front desk. I will give you your payment in return for this receipt.

For payment processing at front desk: Thank you. In this envelope you will find your payment and further explanations how you can access a confirmation of your donation after May 1.

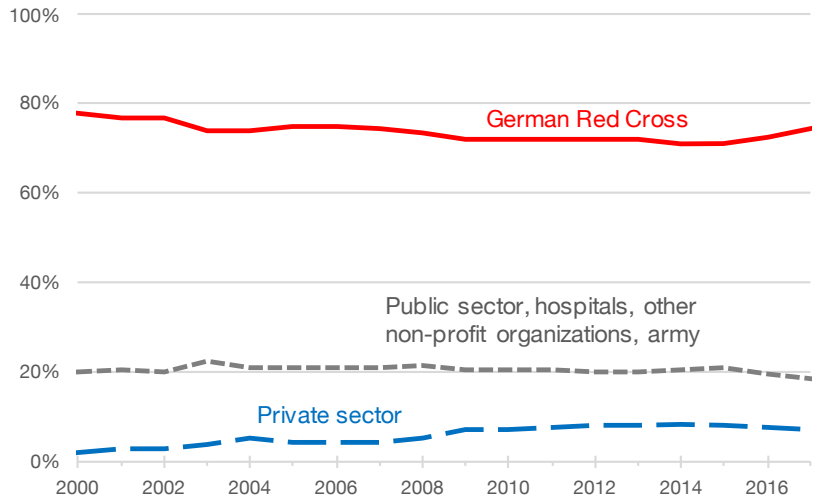
E. Background on Germany's Market for Whole Blood Donations

Our model and experiment is motivated by possible sorting of blood donors in Germany. In this section we provide further details on the German market for whole blood donations. We first provide general institutional background, then summarise a mapping exercise to better understand the possible role of transportation costs in this market, and finally provide survey evidence to shed light on potential informational frictions.

Institutional Background

With a total of 7.2 million donations or 89 donations per 1,000 people, Germany is the fifth-largest blood supplier in the world. Of the 4.4 million whole blood donations collected in 2014, about 71 percent of whole blood donations were collected by the German Red Cross, which generally never pays its donors. The remaining 29 percent represent the military, private donors, and larger hospitals (Paul-Ehrlich-Institut, 2018). Figure E1 plots the share of different whole blood collectors from 2000 to 2017 and illustrates that the share of the German Red Cross has been roughly stable over the past two decades.

Figure E1: Fraction of Whole Blood Donations in Germany 2000 to 2017, by Collector of Donation



Source: Paul-Ehrlich-Institut (2018).
Notes: German Red Cross donations are always unpaid.

Hospitals and the private sector commonly pay their whole blood donors, sometimes

up to $30 per donation.[51] The German legal framework (*Transfusionsgesetz* §10) recommends unpaid donations but provides for an unspecified monetary "compensation" (*Aufwandsentschädigung*).[52]

Transportation Costs

To better understand if prospective donors can indeed choose between different options or if the market is simply geographically segmented into different incentive schemes, we map donation points and calculate average travel time to paid and to unpaid donation points for a significant share of the German population. This gives us an idea of how easy or difficult it is to donate at paid and unpaid donation points.

We collect address data for all 35 locations of Germany's largest commercial blood bank (Haema AG), all 36 locations of German university hospitals that have their own blood collection services, and all 30 fixed donation points of the German Red Cross. We also scrape the website of the German Red Cross to obtain locations of all mobile donation drives from November 2016 to early January 2017.

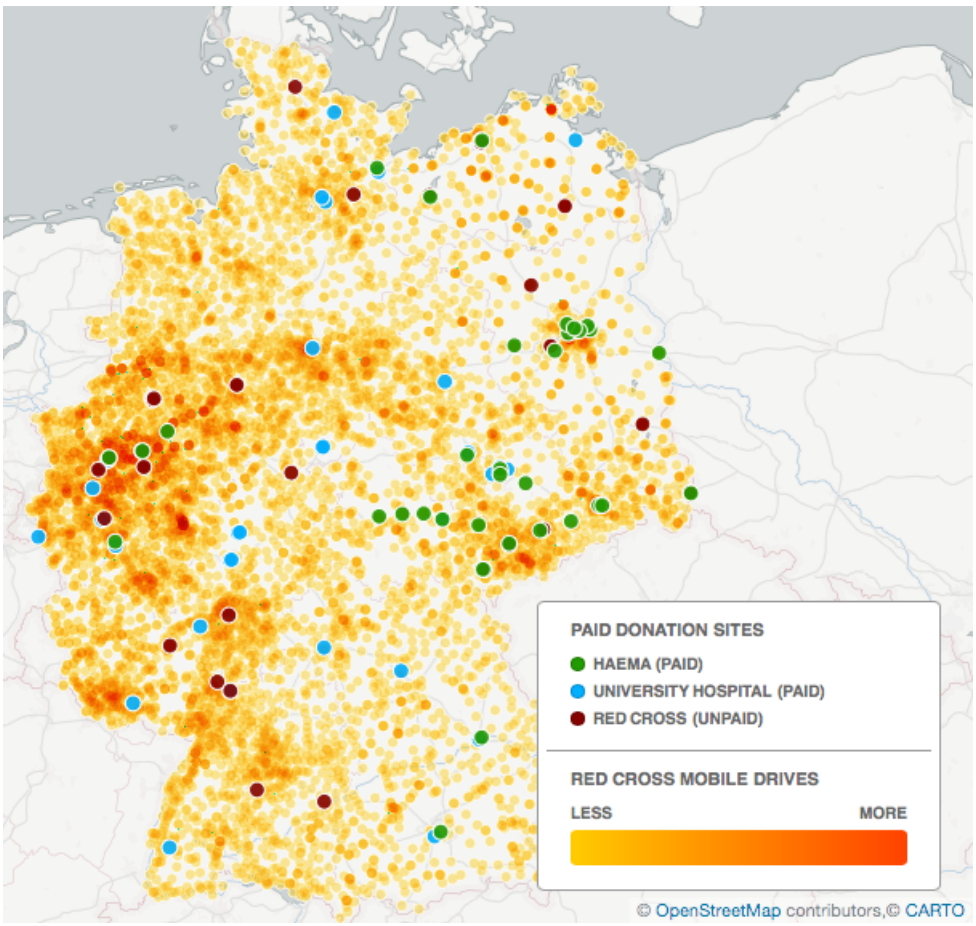
We geocode all 9,306 locations using the Google Maps API (Figure E2). For the 50 largest communities in terms of population in Germany (*politisch selbstständige Gemeinden*), representing about 27 percent of the population, we again use Google Maps API to find all donation sites that are either 30 minutes away from the community midpoint on public transport or 30 minutes away from the midpoint when driving under traffic conditions on October 17, 2016 at 9am.[53]

[51] It is difficult to estimate exact numbers because the German government does not publish data on blood donations by type of remuneration, while the relevant WHO database on blood donations is not nationally representative.

[52] It is interesting to note that the German Red Cross, as quasi-monopolist, has unsuccessfully taken legal action to stop remunerated donations. Most recently in 2012, the Higher Administrative Court of Rhineland-Palatinate (*Oberverwaltungsgericht Rheinland-Pfalz*) dismissed legal action of the German Red Cross against the university hospital in Mainz, who regularly pays its donors. The court found the payment to be lawful. See also Oberverwaltungsgericht Rheinland-Pfalz (2013).

[53] We limit ourselves to the 50 largest communities in order to make the distance calculations and geocoding of addresses more feasible. Similarly, we set an arbitrary 30 minute limit on travel time away from the community midpoint to make computations more feasible.

Figure E2: Map of Germany with Fixed Blood Donation Locations and Density of Red Cross Mobile Donation Drives



Source: Own compilation, Google Maps API, CARTO. Map tiles by Stamen Design, used under CC BY 3.0 license. Map data Openstreetmap, used under ODbL license.
Notes: German Red Cross locations of mobile donation drives from November 2016 to early January 2017 are presented.

We find that it is not significantly more difficult to reach a paid donation site than it is to reach an unpaid donation site. In the 50 largest communities, it takes about 2.5 minutes longer to reach a paid donation point than it takes to reach an unpaid donation point on public transport or driving. Restricting the analysis to public transport, it takes about 5 minutes longer to reach a paid donation point (Table E1). Put differently, everyone who lives in one of the 50 largest communities in Germany can reach an unpaid (Red Cross) donation point within 30 minutes time driving or on public transport. This compares to about 62 percent of the population who can reach a paid (hospital or Haema AG) donation point within 30 minutes time using the same means of transport (Table E2).

These calculations make numerous simplifying assumptions and should thus be seen as merely indicative. Most importantly, we do not discount the fact that most Red

Cross locations in our analysis are temporary (mobile) donation drives that often only collect donations on a specific day. This stands in contrast to the paid donation points that are all fixed and have regular opening hours. The travel times above can thus be seen as a lower bound on how long it takes to reach an unpaid donation site.

Table E1: Travel Time to Nearest Blood Donation Point in 50 Largest German Communities, by Incentive Offered and Mode of Transport (Minutes)

	Driving		Public transport	
Distance from community geographic midpoint	Not paid	Paid	Not paid	Paid
<30 min driving	7.2	11.7	-	-
<30 min public transport or driving	7.8	10.3	8.5	13.4

Sources: Own compilation, Google Maps API, Statistisches Bundesamt (2016).
Notes: Sample consists of the 50 largest communities (*politisch selbständige Gemeinden*) in Germany, dated March 31, 2016. No monetary incentives refers to 9,236 donation centers and mobile donation drives of the German Red Cross. Monetary incentives refers to 35 commercial donation centers of Haema and 36 university hospitals with blood donation units. Travel distances calculated using Google Maps API for traffic conditions on October 17, 2016 at 9am. See text for detailed description of methodology.

Table E2: Share of Population with Access to Blood Donation Points in 50 Largest German Communities, by Incentive Offered

Distance to community geographic midpoint	Access to unpaid donation	Access to paid donation
Less than 30 min driving	1.00	0.69
Less than 30 minutes by public transport or driving	1.00	0.62

Sources: Own compilation, Google Maps API, Statistisches Bundesamt (2016).
Notes: Sample consists of the 50 largest communities (*politisch selbständige Gemeinden*) in Germany, dated March 31, 2016. No monetary incentives refers to 9,236 donation centers and mobile donation drives of the German Red Cross. Monetary incentives refers to 35 commercial donation centers of Haema and 36 university hospitals with blood donation units. Travel distances calculated using Google Maps API for traffic conditions on October 17, 2016 at 9am.

Survey Evidence on Awareness of Different Institutions

? conduct a field experiment in Bonn (Germany) to study how social pressure affects pledges to give blood. As part of this experiment, we also assessed individuals' awareness of different institutions to donate blood.

We recruit subjects using an intercept survey among customers of the service centre of the Bonn municipal government. The service centre, centrally located in the city

hall, provides a wide range of in-person administrative services such as applications for official documents, driver's licenses, registration of motor vehicles, and payments for city services. Customers arrive at the service centre for appointments that they have previously scheduled online or via telephone. We administer our survey while customers wait for their appointment in a designated waiting area.[54]

For each blood collecting institution, Table E3 presents the share of interviewed subjects declaring to be aware of the blood collection activity in the city of Bonn. Over the whole sample, 86.5 percent is aware of the German Red Cross (DRK), while 72.9 percent are aware of at least one of the paying institutions (among Haema and the Bonn University Hospital).[55] We also break down the share of aware subjects by gender and age group: women seem to be generally more aware than men, and older people slightly more aware than the younger. Over all categories, people seem to be more aware of the unpaid option but not dramatically so. We take this data as suggestive evidence of a dual market for blood in the city of Bonn.

Table E3: Market Awareness in Bonn (Shares and Standard Errors in Parentheses)

	Incentive scheme		Paid		
	Not paid (DRK)	Paid (Haema/Uni)	Haema	Uni	N
Whole sample	0.865	0.729	0.147	0.706	941
	(0.011)	(0.014)	(0.012)	(0.015)	
		by gender			
Female	0.900	0.784	0.184	0.753	490
	(0.014)	(0.019)	(0.018)	(0.020)	
Male	0.827	0.670	0.106	0.654	451
	(0.018)	(0.022)	(0.015)	(0.022)	
		by age group			
18 to 24	0.869	0.777	0.153	0.742	229
	(0.022)	(0.028)	(0.024)	(0.029)	
25 to 34	0.847	0.731	0.197	0.703	320
	(0.020)	(0.025)	(0.022)	(0.026)	
35 to 44	0.850	0.647	0.087	0.642	173
	(0.027)	(0.036)	(0.021)	(0.037)	
45 to 54	0.895	0.737	0.117	0.725	171
	(0.024)	(0.034)	(0.025)	(0.034)	
55 to 64	0.917	0.750	0.104	0.708	48
	(0.040)	(0.063)	(0.045)	(0.066)	

Source: Meyer and Tripodi (2018)
Notes: Data based on a random sample of 941 subjects interviewed in the waiting area of the Bonn city hall.

[54] Participation in the survey is particularly high considering the lack of incentives. About 75 percent of the 1,675 subjects approached agreed to participate and 57 percent completed the survey before being called up for an appointment.

[55] We are aware of other smaller institutions collecting blood in the country. These do not constitute a relevant market share in the city of Bonn and we did not include them in our survey.

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F. Online Pilot Study: Description and Results

We conducted a pilot study of our experimental design online on Amazon Mechanical Turk. In the online experiment, we take advantage of the high degree of anonymity to implement only the *PRIVATE* treatment. Instead of the 3×2 between-subject design of our main laboratory experiment, we considered an alternative within-subject design that introduces the dual market treatment after the first donation round. This design lets us study the transition from a single market treatment to a dual market, accounting for potential carryover effects.

Experimental Design and Procedures

Paralleling the laboratory experiment, three treatments determine the incentive scheme under which subjects can perform the real effort task. In addition, subjects can always skip participation and take an outside option of 75 tokens. We provide either monetary incentives to donate (*PAID*; 50 tokens to subject, 50 tokens to charity), or no monetary incentives (*NOT PAID*; 100 tokens to charity), or we let subjects choose among one of the two incentive schemes (*CHOOSE*).

Subjects engage in the real effort task for three rounds. In the first round, we administer the three treatments in a between-subject design. After the first round we introduce the *CHOOSE* treatment for subjects that were PAID in the first round and for a random sub-sample of subjects that were in the *NOT PAID* treatment in the first round. This results in four distinct treatments.

A total of 408 subjects were recruited for seven session between May and October 2016. Most subjects are from the United States (81.1 percent), have completed college degrees (70.3 percent), and are mostly male (57.1 percent). The average subject is 33 years old. Double participation is ruled out. We pay a show-up fee for completing the experiment of \$0.40. 1 token is worth \$0.04. On average, subjects earned \$1.04 for themselves and generated \$0.37 for charity. Sessions lasted circa 20 minutes.

Results

Table D1 summarises treatment assignment and results for each treatment and round, Figure D1 illustrates the share of subjects participating in the donation task and the share of subjects choosing to not be paid.

Consistent with findings from the lab, we do not find that introducing monetary incentives crowds out participation in the donation task. In the dual market *CHOOSE* treatment, subjects are significantly more likely to participate in the donation task than in the single market *NOT PAID* treatment. Among subjects in the *NOT PAID* treatment in the first round, those that are randomised into *CHOOSE* in the second round

are significantly more likely to participate in the donation. We take this as suggestive evidence that transitioning from a single market design where no one is paid to a dual market design in which donors can choose to be paid to give can increase donations.

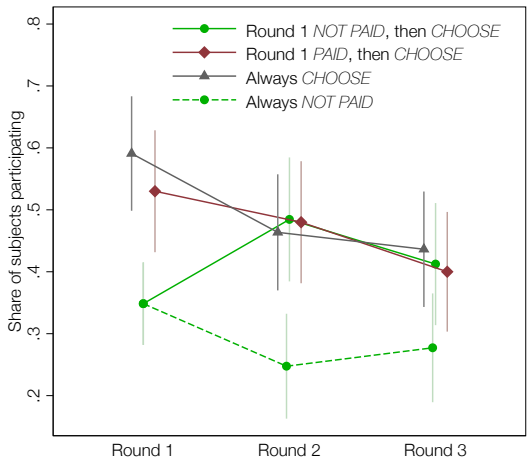
Table D1: Distribution of Treatments, Subject Participation, and Subject Incentive Choice in Online Experiment (Number of Subjects)

Treatment	Total	Participation choice		Incentive choice	
		Skip	Participate	Not paid	Paid
		Round 1			
Round 1 *NOT PAID*, then *CHOOSE*	97	65	32	32	-
Round 1 *PAID*, then *CHOOSE*	100	47	53	-	53
Always *CHOOSE*	110	45	65	8	57
Always *NOT PAID*	101	64	37	37	-
		Round 2			
Round 1 *NOT PAID*, then *CHOOSE*	97	50	47	14	33
Round 1 *PAID*, then *CHOOSE*	100	52	48	10	38
Always *CHOOSE*	110	59	51	8	43
Always *NOT PAID*	101	76	25	25	-
		Round 3			
Round 1 *NOT PAID*, then *CHOOSE*	97	57	40	11	29
Round 1 *PAID*, then *CHOOSE*	100	60	40	13	27
Always *CHOOSE*	110	62	48	6	42
Always *NOT PAID*	101	73	28	28	-

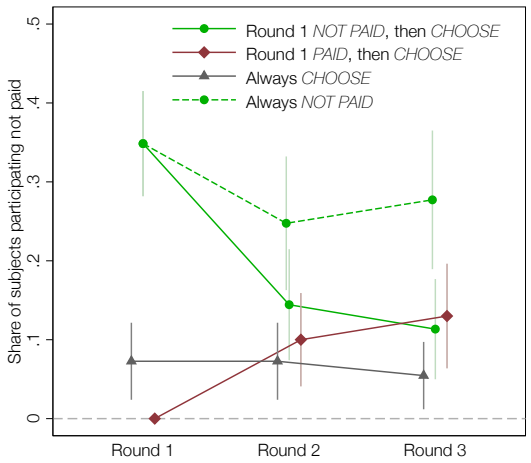
Notes: 408 subjects. Last two columns refer to subjects not skipping the donation task.

Figure D1: Subject Participation in Donation Task

(a) Overall Participation



(b) Participation in *NOT PAID*



Notes: Bars indicate 95 percent confidence intervals. In panel (b), the share of subjects participating not paid is conditional on not skipping the donation task.