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AND THE DEFAULT EFFECT**

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# Charitable Giving, Emotions, and the Default Effect

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## Abstract

We report an experiment to study the effect of defaults on charitable giving. In three different treatments, participants face varying default levels of donation. In three other treatments that are paired with the first three, they receive the same defaults, but are informed that defaults are thought to have an effect on their donation decisions. The emotional state of all individuals is monitored throughout the sessions using Facereading software, and some participants are required to report their emotional state after the donation decision. We find that the default level has no effect on donations, and informing individuals of the possible impact of defaults also has no effect. The decision to donate is independent of prior emotional state, unless specific subgroups of participants are considered. Donors experience a negative change in the valence of their emotional state subsequent to donating, when valence is measured with Facereading software. This contrasts with the self-report data, in which donating correlates with a more positive reported subsequent emotional state.

JEL Classification: C91

Keywords: charitable giving, emotion, default, facereading

# 1 Introduction

Charitable giving, in the form of money, time, or in kind, constitutes a non-negligible fraction of the economy in many countries. Nevertheless, there does appear to be scope to increase donations through the application of behavioral economics. Experimental methods have been used to test a number of techniques for increasing donations, including lotteries (Landry et al., 2006), tontines (Lange et al., 2007), challenge gifts (Andreoni, 2006), and matching gift campaigns (Eckel and Grossman, 2003; Karlan and List, 2012). The study reported here considers the potential influence of default donation levels on charitable giving.

By a *default*, we refer to an action which will be taken unless the subject overrides it by actively choosing another option. One rationale for the study of defaults is that, if individuals are presented with a default donation level that becomes binding unless they change it, it may serve as a reference point, or anchor (Tversky and Kahneman, 1974), from which individuals insufficiently adjust. Moreover, if the cost of changing a choice outweighs the benefit of lowering a donation, one might choose to maintain giving at the default level. If these effects are substantial, it indicates that a charity can intentionally choose default donation levels to increase donations. Indeed, defaults have been shown to be powerful attractors in a number of other domains.<sup>1</sup>

A few previous experimental studies have explored the effect of defaults on charitable giving, as we do here. Grossman and Eckel (2012) show that making a 50–50 split of an available amount a default level can induce people to donate more. In a field experiment on the default effect and public good giving, Carlsson et al. (2011) find that people in a low default condition contribute substantially less to a public good, a new bridge, than under a baseline treatment. The results from a high default treatment are inconclusive, however. Altmann and Falk (2009) find that a relatively high default, in a linear public good game, increases contributions relative both to a baseline and a low, non-cooperative default.

However, it stands to reason that, once they have enough experience, at least some potential donors might become aware of default effects and thus may correct for them when they make their decisions. To examine the implications of such awareness, we include treatments in which we explain the default effect to participants. One way to view this procedure is as a form of de-biasing. A large literature exists on de-biasing methods (see for example Babcock et al. (1997) or Cason and Plott (2014)). Popular methods for de-biasing are to ask participants to generate alternative scenarios, or to make decisions in steps (see for example Koriatic et al. (1980), or Kivetz and Simonson (2000)). Another method to help people make better choices is to provide more information about the decision situation. However, the evidence on the effectiveness of this is mixed (Elbel et al., 2009; Schwarz et al., 2007; Zikmund-Fisher et al., 2008). The presumed effect of explaining de-

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<sup>1</sup>Defaults have been shown to exert effects on the choice of whether or not to donate organs (Johnson and Goldstein, 2003), as well as on savings decisions (Madrian and Shea, 2001). As many researchers have argued, defaults can be seen as implicit recommendations or an experimenter’s expectation (McKenzie et al. (2006)), or as social norms (Carlsson et al. (2011)) which may be costly to violate. Defaults may anchor participants’ decisions (Dhingra et al. (2012), Dinner et al. (2011)), and switching away from them might involve cognitive effort (Johnson and Goldstein, 2003). People can also suffer from status quo bias (Kahneman et al., 1991; Korobkin, 1997) and hence be unwilling to override the default. People can simply procrastinate and keep on postponing a decision, effectively making the default option apply (as argued in Choi et al. (2003)).

fault effects would be to reduce their magnitude. It is possible, however, that the information about defaults may make them even stronger attractors, that is, disclosure may well strengthen the default effect. The subjects might perceive the information as an implicit recommendation and perhaps be more likely to select the default option.

In our experiment, we monitor the emotional correlates of donation decisions. It is clear that there may be emotional underpinnings to the decision to donate. As Small and Verrochi (2009) show, emotionally-charged images can have a profound influence on donations. They observe that subjects viewing sad pictures donate more on average to a cause. Emotions are also presumably one of the mechanisms generating the identifiable victim effect that is known to increase donations Jenni and Loewenstein (1997); Genevsky et al. (2013). Furthermore, the act of donation or failure to donate may generate an emotional response on the part of the donor (Rubaltelli and Agnoli, 2012).

A large body of work has shown that emotions do affect decisions in related contexts. Positive mood can significantly increase people’s willingness to help others (for example Isen and Levin (1972)). In turn, giving can make people happier and these two effects can reinforce each other (Anik et al., 2009). Of particular interest to us is that relationship between emotional state and the power of defaults. Lerner et al. (2004) demonstrate that sadness and disgust can eliminate the endowment effect, otherwise a robust type of default effect (Kahneman et al., 1991). Lin et al. (2006) obtain similar results. Martinez et al. (2011) find that while regret eliminates the endowment effect, disappointment reverses it.

To study the relationship between emotions and donation, we gather objective physiological measures of participants’ emotions, registered with face reading software, before and after they make their donation decisions. We test whether a positive emotional state predicts a larger donation. We also consider whether one or more specific emotions is predictive of donations. We test whether behaving pro-socially makes people feel more positively afterwards, and which emotions in particular follow a decision to donate or not to donate.

In our experiment, each subject is given an endowment and is asked to split it between herself and a charity.<sup>2</sup> Our design is in part based on Carpenter et al. (2008), who study a dictator game, in which the receiver is a charitable organization. Subjects are given the option to choose their preferred charity to contribute to. They can either pick one from a menu of prespecified options or indicate a different charity as a destination for a donation. The most closely related work to ours is by Grossman and Eckel (2012) whose three treatments are similar to three of the treatments in our design. Specifically, subjects in the Grossman and Eckel (2012) study are put in one of three situations: (1) they are allocated the full endowment of 20 dollars and can donate a part of it to charity, (2) the initial endowment is split evenly (10 Euros to each party) between the individual and a charity and the subject may increase or reduce the charity’s share, or (3) the charity is allocated the full endowment of 20 dollars and the subject can take away some of money for herself.

In our study, we find no evidence that defaults have any effect on donation levels. Similarly, informing potential donors of the hypothesized effect of defaults also has

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<sup>2</sup>Engel (2011), in a metastudy of dictator game experiments, reports that dictators give away on average around 28% of their endowment and the distribution of means in different experimental conditions is skewed to the right. If the recipient is needy or deserving (such as a charity), donations are higher.

no effect. We observe that a more positive emotional state correlates with making greater donations, but this relationship only appears for those who choose their own charity to donate to and those who make relatively high donations. Higher donations lead to a more positive self-reported emotional state, but to a less positive state as registered by our physiological measure. While our experiment was not designed to detect the reason for such a discrepancy, two possible explanations for the pattern are (1) that there is reporting bias in the self-reports, perhaps because individuals feel pressured to indicate that donation makes them feel more positive, or (2) the physiological measure exclusively captures immediate affective state, but the self-reports also integrate other sources of subjective well-being. We also find that women donate more than men. Moreover, we observe that session size is an important explanatory variable, with donations higher in relatively small sessions.

In the next section we describe our experiment. In section three we report our results, and in section four we present our conclusions.

## 2 Experiment Design and Implementation

### 2.1 Procedures common to all treatments

The experiment was conducted in the CentER laboratory at Tilburg University in the Netherlands, in groups of sizes of between 1 and 10, in the year 2014. In total, 270 subjects (114 male) participated. They were recruited using the Tilburg University online recruitment system. The subjects were bachelor's and master's students majoring in economics, business, and law. In the majority of cases, the sessions of this experiment were run after other, longer experiments (see Table 2). In those cases, participants were not informed about the second session until the first one was over. A few sessions (encompassing 24 subjects) were run with subjects who had not participated in any experiment beforehand. When possible, all sessions were run in a separate room from the first, in order to emphasize the independence of the two experiments, and to thereby enhance isolation effects. All sessions were run by the same (female) experimenter in order to eliminate possible experimenter effects which, especially in the context of charitable giving, can affect behavior (Landry et al., 2006). We employed the z-Tree software (Fischbacher, 2007). Subjects earned 3.16 euro on average (not including the participation fee) in this experiment.

At the beginning of the session, the experimenter turned on video cameras on each computer with the consent of the subjects. Subsequently, all subjects received written instructions, which were read aloud by the experimenter. While subjects could ask the experimenter about something that was unclear, no between-subject communication was allowed throughout the experiment. Subjects were paid by bank transfer after the session.

In all conditions, participants were presented with the screen illustrated in figure 1, and asked to split 5 euro (in 25-cent increments) between themselves and a charitable organization. They could either contribute to KNGF Geleidehonden, a Dutch charity which trains dogs for visually-impaired people, chosen by the experimenter, or could indicate any other charity of their choice to contribute to. All donations were sent to the respective charities after all experimental sessions were finished. Participants could request a receipt proving that the money was indeed sent to charity; though no subject did so.

Our experimental design allows, but does not require, individuals to specify a charity of their choice as the destination for their donation. We consider whether it correlates with donation level, though we cannot isolate the effect the choice of charity on donations from that of self-selection. That is, people who choose their preferred charity may be better informed about charities and be more frequent or larger donors.<sup>3</sup>

Your endowment 5.00

The amount I wish to donate to the charity is...

- 0.00
- 0.25
- 0.50
- 0.75
- 1.00
- 1.25
- 1.50
- 1.75
- 2.00
- 2.50
- 2.75
- 3.00
- 3.25
- 3.50
- 3.75
- 4.00
- 4.25
- 4.50
- 4.75
- 5.00

Confirm

Figure 1: Decision screen

## 2.2 Treatments and treatment-specific procedures

There were eight conditions (see Table 1). There were three default levels, low, medium, and high. A low default corresponded to a default donation equal to zero, medium default to a donation of 2.50 and high default to a donation of 5. A default level of donation was implemented by pre-selecting a button in the display on subjects' computer screens, as in Figure 1. Subjects were free to change the selection, but if they took no action, the default level of donation was implemented. Each default level was implemented under two information levels, informed, and not informed, about the default effect. In the *informed* conditions participants received the following information:

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<sup>3</sup>The characteristics of the charity in question matter, and must be taken into account when considering how to increase donations. A charity seen as effective and providing quality services is likely to attract greater donations (Sargeant et al., 2004). Personal involvement or experience can induce people to choose one charity over another (Bennett, 2003). Empathy with a particular cause leads to greater donations (Basil et al., 2008; Small and Simonsohn, 2008).

*Please note that one of the options may be **randomly pre-selected** for you. A number of published studies have shown that many people will be influenced by this selection: i.e. they will donate more if the pre-selected choice offers a high donation, and they will donate less if the pre-selected choice offers a low donation.*

A Baseline treatment, in which there was no default and no information about defaults, was also included. In addition, we implemented another treatment, called BaselineSR (Baseline + Self-Report), which was identical to the Baseline treatment, but with one added feature. The subjects were asked to report how they felt immediately after the donation decision. They were not informed that they would be asked about their emotions until after they made the donation decision. On a scale from 0 to 10, subjects had to state how happy, sad, angry, scared, and disgusted they felt. In total 53 subjects in 8 sessions participated in this treatment.

Table 1 lists the treatments, the number of subjects who participated in each treatment, and the number of sessions conducted. Low default corresponded to no donation, medium to a donation of 2.50 euro and high to a donation of 5 euro.

Table 1: The Eight Treatments

Condition	Number of subjects	Number of sessions
Baseline	31	14
Low	31	8
Medium	31	14
High	31	6
Low+info	31	12
Medium+info	31	6
High+info	31	14
BaslineSR	53	8

Table 2: Preceding Experiments

Experiment	Number of subjects	Description
None	24	Did not participate in prior experiments
Exp.yl1	37	Market experiment
Exp.yl2	11	Market experiment
Exp.mrkt1	33	Questionnaire, involved eating
Exp.mrkt2	13	Questionnaire
Exp.eli	7	Green technology transition experiment
Exp.car	6	Art experiment
Exp.gonz1	72	Asset-pricing (macroeconomics) experiment
Exp.gonz2	5	Tulip market experiment
Exp.ays	9	Reference points experiment

## 2.3 Facereader software

All participants were videotaped, with their consent, during the entire session. The videotapes were analyzed later using Noldus Facereader 5. Facereader uses the



Active Template Method (ATM) to locate the position of a face in an image; and, should this method fail to locate a face, a second algorithm (Viola Jones cascaded classifier algorithm) takes over. Then, the Active Appearance Model (AAM) locates 530 key points on the face, using a database of several thousand annotated images. It classifies the face’s expression by how much it reflects the emotions of happiness, sadness, anger, fear, disgust, and surprise, as well as neutrality. The facial expressions that correspond to the six basic emotions appear to be universal and innate, in that they are common across all cultures and different primates (Ekman and Friesen, 1986; Ekman, 2007), as well as between blind and sighted humans (Ekman, 2007; Matsumoto and Willingham, 2009).

Facereader has been shown to reliably identify the emotion an individual intends to show (Bijlstra and Dotsch, 2011). It correlates highly with self-reported emotions (Den Uyl and Van Kuilenburg, 2005). Furthermore, it classifies human expressions as well as human observers do (Kuderna-Iulian and Valeriu, 2009; Terzis et al., 2010; Lewinski et al., 2014). In particular, it correctly identifies happiness as the emotion an actor intends to express, with an accuracy rate of 97 percent Den Uyl and Van Kuilenburg (2005). Facereader has been used in experimental economics to study risk aversion (Nguyen and Noussair, 2014), asset markets (Breaban and Noussair, 2013), and rejection decisions in ultimatum games (Van Leeuwen et al., 2014).

Facereading has a number of attractive features as a tool to measure emotions. It provides objective physiological correlates of subjects’ emotional state (in contrast to self-reports where subjects may have incentives to misreport their true feelings). It yields a quantitative measure for the intensity of emotions. It operates unobtrusively, meaning that the data collection would likely not be noticed by the subjects had they not been informed about it. Finally, it operates in nearly real time, with current emotional state registered 30 times per second.

Facereader reports values for the six emotions plus neutrality on a scale between zero to one. From these, we derive a measure of valence at time  $t$  that equals:

$$valence_t = happiness_t - 0.25 * (anger_t + sadness_t + fear_t + disgust_t) \quad (1)$$

This is a measure of net positivity of emotional state, in that it equals the difference between the only positive basic emotion, happiness, and the average of the four negative emotions: anger, sadness, fear, and disgust). Valence ranges from -1 to +1.

### 3 Hypotheses

The three hypotheses that we evaluate originate in previous research. The first hypothesis is that the default pull on donations would appear in our setting. As we described earlier, there have been experiments showing that under low defaults, people donate less (Carlsson et al., 2011), and that under high defaults people donate more (Altmann and Falk, 2009). Support or refutation of this hypothesis is a statement about the robustness of these default effects. If a similar pattern is observed here, it would support the view that the result is robust. On the other hand, it is by no means evident that a default effect would be robust. Indeed, there is reason to believe that the default effect may be fragile. While the default

level can serve as an anchor or as a reference point, its ability to do so may be very sensitive to the particular individuals who are measured, to the availability of attention to direct to the task, or to subtle differences in context or framing. Because a default induces no direct incentives to make a particular donation other than a trivially lower cost of effort in maintaining the donation at the default level rather than changing it, other considerations can readily override it. Nevertheless, because the few previous studies conducted in related setting have reported an effect of defaults, we maintain, a priori, the hypothesis that default donation levels shift decisions closer to the default level.

*H1: People facing a lower default contribute less to charity.*

As indicated earlier, explaining to an individual that a default may affect her decisions could alter her behavior. It may cause her to try compensate for the effect. That is, she may adjust her donation consciously to attempt to offset the impact of the default. If a substantial fraction of individuals respond in this manner, the effect of defaults on donations will be reduced. This is in line with previous research (Zikmund-Fisher et al., 2008). However, it is also possible that the information will render the default level an even stronger anchor or reference point. Thus, our hypothesis about the difference between conditions with and without information is that there is no effect and thus the tests we conduct are two-sided. We hypothesize that:

*H2: Informing participants about the default effect does not affect donations.*

Our third hypothesis has two parts and concerns the relationship between emotional state and donation level. The first part is that prior emotional state correlates with subsequent donations, with more positive emotions accompanying higher levels of giving. A number of previous studies have reported that positive emotional state, as indicated in self-reports, correlates positively with subsequent charitable giving (Isen and Levin, 1972; Anik et al., 2009). This leads us to hypothesize that the same relationship would exist when emotional state is measured with Facereading software. The second pattern is a correlation between the amount donated and subsequent emotional state, with greater donations leading to more positive emotions. Anik et al. (2009) find that individuals report greater satisfaction after making a donation. However, DellaVigna et al. (2012) argue that if giving takes place out of social pressure, which may be present in our experiment, it can lower the utility of the donor. Because of these potentially offsetting effects, we hypothesize that making a donation has no overall relationship with subsequent emotional state.

*H3a: Individuals with more positive emotional valence donate more.*

*H3b: Emotional valence after the decision is uncorrelated with the amount donated.*

## 4 Results

This section is organized as follows. We first briefly describe the overall patterns in the data, and then evaluate our two hypotheses about the relationship between defaults, information, and donation levels. We then turn our attention to the relationship between emotions and giving. Lastly, in section 4.2, we report a number of observations from an exploratory analysis of the data.

### 4.1 Description of the data and tests of hypotheses

Four prominent patterns appear in the overall donation data. First, out of total of 270 subjects, approximately a fifth (57) donated nothing; the share of people donating zero ranged between 16.1% (medium + info, high+ info) and 25.8% (baseline) per treatment. Second, almost a ninth (31) of the subjects donated everything; their share per treatment ranged between 6.4% (low + info, medium + info) and 19.3% (high + info). Third, an eighth (33) of subjects offered a fair 50:50 split; the lowest share of these subjects was in baseline (6.4%), and the highest in high default condition (19.3%). And fourth, 15% (40) of our subjects donated one euro, corresponding to 20% of their endowment. Fifty-four subjects donated between 1 and 1.5, a typical average range of giving in dictator games (Engel, 2011). Their share ranged between 9.7% (medium) and 19.3% (baseline, medium + info) of subjects.

Our first hypothesis was that the default level of donation would affect the decisions of participants. In contrast, however, the first result that we report is that the presence of the value of a default has no significant effect on giving.

#### **Result 1: Defaults do not affect donations.**

**Support for Result 1** Figure 1 shows the average donation by treatment. The impression conveyed by the figure is that differences among treatments are relatively small. Table 3 reports the results of Wilcoxon rank sum tests of treatment differences. None of the treatments is statistically significantly different from any other at  $p=0.05$ .<sup>4</sup>

The lack of a default effect reported in result 1 suggests, but does not necessarily imply, that informing individuals that defaults may exert an effect on their decisions would have no impact. Indeed, as reported in result 2, we find that the information does not affect donation levels.

#### **Result 2: Informing individuals about the anticipated effect of defaults has no effect on donations**

**Support for result 2:** We make pairwise comparisons between the Low and Low-Info, Medium and Medium-Info, and High and High-Info treatments, using Wilcoxon rank-sum tests. The result are reported in the bottom portion of table

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<sup>4</sup>We also tested whether subjects in our two baseline conditions donate the same amount on average. The difference between the conditions is not significant, with a rank sum test yielding a p-value of 0.694.

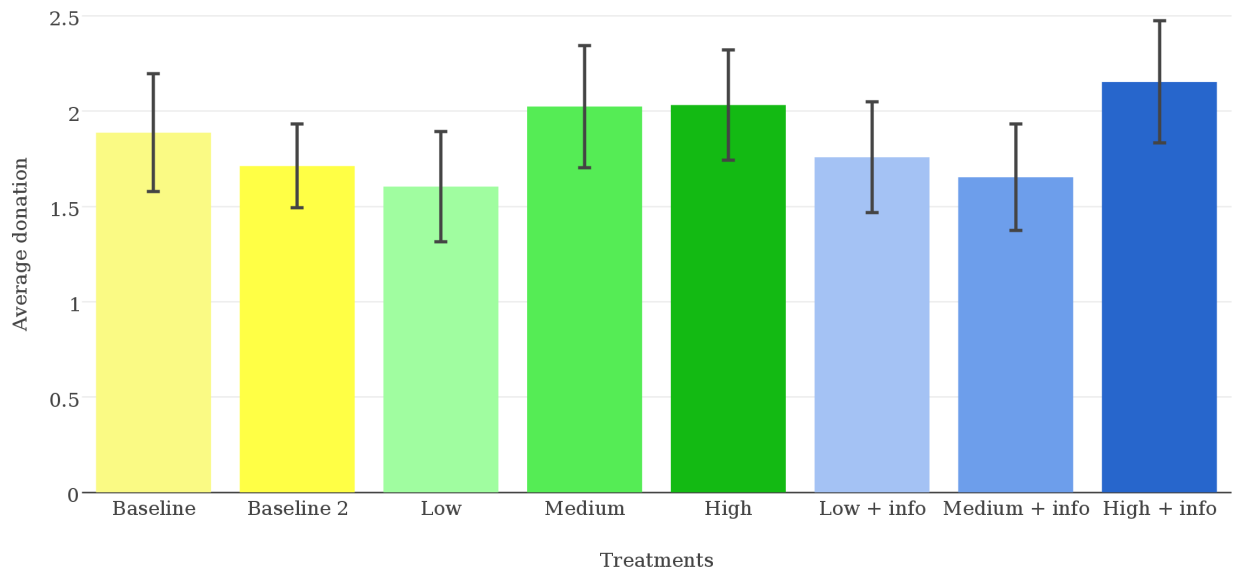


Figure 2: Average donation by treatment

3. None of the differences are significant at conventional levels.

Results 1 and 2 indicate an absence of support for Hypotheses 1, but do support Hypothesis 2. However, though defaults do not affect decisions, other factors may well do so. Results 3 and 4 consider the emotional correlates of donations. Result 3 reports that positive valence, as well as the specific emotion of happiness, as registered with Facereading software, is uncorrelated with greater subsequent donations, unless certain specific subgroups are considered.

**Result 3: Emotional valence, as well as individual emotions, are not significantly correlated with subsequent donations for the overall sample. However, valence and happiness are positively correlated with donations for those who are high donors and those who choose their own charity.**

**Support for Result 3:** Figure 3 illustrates the donation level for each quartile of happiness, sadness, and overall valence. Individuals in the least happy quartile donate an average of 1.65 Euro while the happiest quartile donate 2.01 Euro. Valence exhibits a similar pattern with those in the highest quartile donating roughly 20 percent more than the lowest. Sadness does not exhibit a consistent relationship with donation. The same is the case for fear, anger, and disgust, which are not illustrated.

The Spearman rank correlation coefficient, between both happiness and valence prior to the decision and donation level are positive, at  $\rho = 0.0907$  and  $0.1018$ , respectively. However, these correlations are not significant at conventional levels,

Table 3: Wilcoxon Ranksum Test: Do Defaults or Information about Them Affect Donations?

Null hypothesis	p-value
Baseline = Low	0.618
Baseline = Medium	0.793
Baseline = High	0.654
Baseline = Low + Info	0.820
Baseline = Medium + Info	0.712
Baseline = High + Info	0.509
Low = Medium	0.338
Medium = High	0.910
Low = High	0.206
Low + Info = Medium + Info	0.820
Medium + Info = High + Info	0.260
Low + Info = High + Info	0.387
Low = Low + Info	0.655
Medium = Medium + Info	0.461
High = High + Info	0.887

yielding p-values of 0.146 and 0.103. The corresponding p-values of the other emotions are all greater than .45. Wilcoxon ranksum tests confirm that even the largest difference, between the first and the last quartile of happiness, is not statistically significant (p-value of 0.352). The same holds for valence (p-value of 0.354).

However, there are two important exceptions to this pattern. The first is that those who donated very high amounts, at least 3/4 of the 5 Euro endowment, are significantly happier and have more positive valence than the rest of the sample ( $p = .0321$ ). This is shown in table 4. The second is that those individuals who chose their charity (seven percent of all subjects) do exhibit a positive correlation of 0.69 (p-value 0.003) between prior happiness and donation level. While relatively small in number, this is an important subgroup, because they are more likely than other participants to be active donors. For this subgroup, prior sadness is also negatively correlated with donation ( $\rho = -0.577$ ,  $p = 0.019$ ), and for them, valence exhibits a significant correlation as well ( $\rho = 0.7219$ ,  $p = 0.0016$ ).

We now consider whether donations affect the emotional state of the donor, and the pattern we observe is described in result 4.

**Result 4: Higher donations are positively correlated with subsequent self-reported emotional valence. However, higher donations are also correlated with subsequent decreases in our physiological measure of valence, so that after the giving decision, donors and non-donors are in a similar emotional state.**

**Support for Result 4:** The upper panel of Figure 4 shows the relationship between donations and subsequent self-reported emotional state. Self-reported emotions correlate positively with prior donation behavior. Donations and happiness have a correlation of 0.2282 ( $p = 0.100$ ). Donation correlates with valence at 0.3365

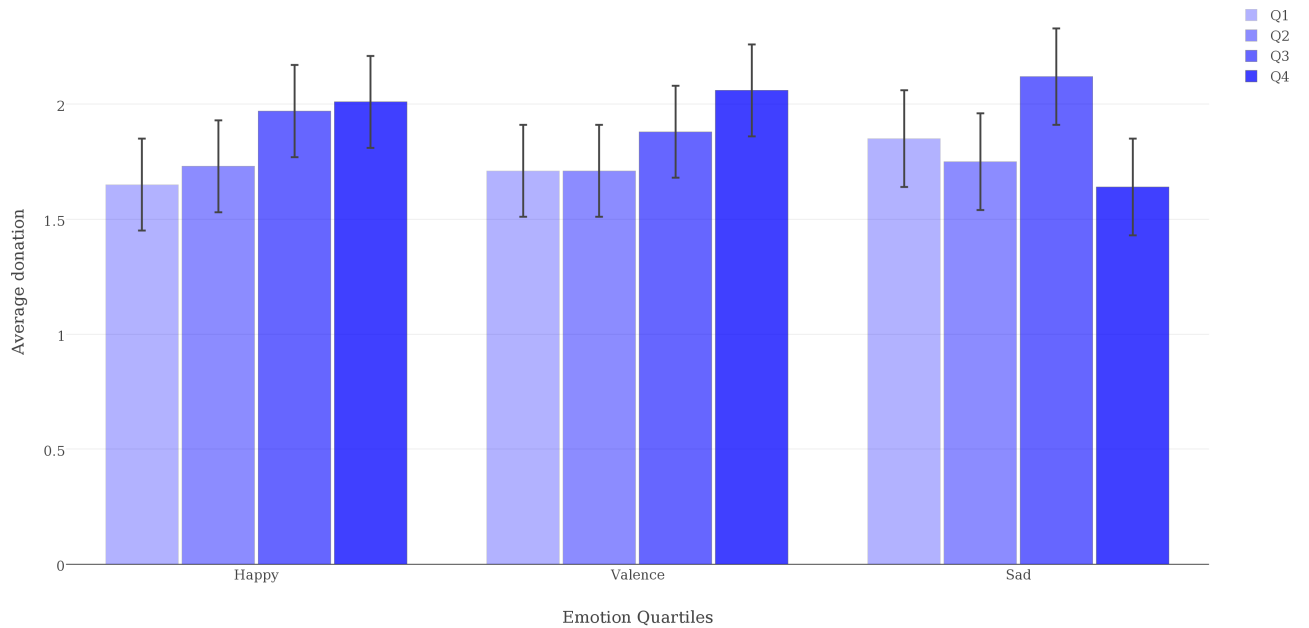


Figure 3: Emotions prior to decision (Facereader)

( $p = 0.014$ ), and with sadness of  $-0.4554$  ( $p = 0.001$ ). When comparing the lowest and highest quartiles of self-reported emotions, the average donation is borderline significantly different for happiness ( $p$ -value  $0.074$ ), while significantly different for sadness ( $p$ -value  $0.007$ ) and valence ( $p$ -value  $0.021$ ).

The Facereader data are illustrated in the lower panel of Figure 4. The figure suggests an absence of a relationship between the amount of donation and emotional state. Table 4 shows the magnitude of valence and the individual emotions both before and after the decision to donate, for different ranges of donations.

A Wilcoxon signed-ranks test is used to consider whether valence differs before and after making the donation decision. The results are reported in Table 5. Valence is lower after than prior to the decision ( $p$ -value of  $0.000$ ). However, this result only holds for the pooled data from donors and non-donors, and for instances in which the donation is positive. When the subject's donation equals zero, the values for the two valences are statistically indistinguishable ( $p$ -value of  $0.411$ ). High donors, those who give more than  $3/4$  of their endowment, experience particularly large decreases in valence after their decision ( $p = .0321$ ), bringing them to similar levels of valence and happiness as others who donated less.

## 4.2 Other correlates of giving

Though the treatments do not correlate with decisions, we do find that a number of other factors do. The first of these is the number of subjects in a session.

**Observation 1: The number of subjects in a session correlates negatively with average donation**

Table 4: Summary statistics: Emotions given donations

	0	>0	0.25 - 1.75	2.00 - 3.50	3.75 - 5.00
# observations before	53	205	85	74	46
# observations after	48	152	62	57	33
Valence before	0.14	0.14	0.13	0.12	0.22
Valence after	0.13	0.11	0.11	0.11	0.11
Happiness before	0.17	0.18	0.17	0.15	0.25
Happiness after	0.15	0.14	0.14	0.14	0.15
Sadness before	0.05	0.06	0.08	0.05	0.06
Sadness after	0.05	0.07	0.07	0.07	0.08

Table 5: Signed-Rank Test: Change in Emotions (p-values) given donations

	0	>0	0.25 - 1.75	2.00 - 3.50	3.75 - 5.00
# observations	47	152	62	57	33
Valence	0.604	<b>0.000</b>	<b>0.024</b>	0.100	<b>0.000</b>
Happiness	0.117	<b>0.000</b>	<b>0.011</b>	0.186	<b>0.000</b>
Sadness	0.197	0.452	0.304	0.858	0.675

**Support for Observation 1:** Figure 5 shows that the average donation falls as the session size increases. On average, 50 percent of endowment is donated in sessions with 1 or 2 participants, while the average falls to 21 percent in sessions of 9 - 10 individuals.

There are at least two plausible explanations for this effect. First, it may be the case that subjects perceive greater anonymity in a larger group and interpret this as a license to behave selfishly. Second, is that if the subjects think that the experimenter is aiming to raise a fixed amount of money, such as 20 euro, then subjects in larger groups feel less responsible individually for reaching this target, reasoning that there are sufficiently many other people who can donate instead.

Another strong correlate of donations is gender. We find that females donate significantly more than males. This pattern is summarized as Observation 2.

**Observation 2: Male subjects donate significantly less than female subjects.**

**Support for Observation 2:** The average donation of males is 1.66, while the average for females is 2.04. A Wilcoxon ranksum test yields a p-value of 0.0373, indicating that the difference is significant.

These results contrast, for example, with those of Bolton and Katok (1995), who find no evidence for gender differences in generosity in the dictator game while corroborating the results of List and Price (2009), DellaVigna et al. (2013), and the overall conclusion of Engel (2011), that women give more than men in dictator games. However, while women give more overall in our experiment, neither gender

Table 6: Signed-Rank Test: Change in Emotions (p-values) given donations for self-selected people

	0	>0	0.25 - 1.75	2.00 - 3.50	3.75 - 5.00
# observations	0	14	5	7	2
Happiness	.	0.0640	0.6858	0.1763	0.1797
Sadness	.	0.7299	0.8927	0.8658	0.6547

is affected by the existence or the level of the default.

**Observation 3: Both genders are insensitive to defaults.**

**Support for Observation 3:** All p-values for the comparisons reported in Table 3, when conducted for each gender separately, are above 0.05. Thus, the treatment effects are insignificant for both genders.

Observation 3 contrasts with the study of Roberts and Gettman (2004) who show that in some situations, women can be more susceptible to priming, as well as with the study of Terkildsen and Schnell (1997) showing that in other cases, men are more susceptible to framing. Neither gender in our experiment was affected by defaults to a greater extent than the other. The next observation concerns the subset of the sample (7 percent) who chose their own charity. We find that they donate more than others. This pattern is quite reasonable, since these individuals are presumably more likely to be regular donors than the rest of the sample.

**Observation 4: People who choose their charity to contribute to donate more than those who do not.**

**Support for Observation 4:** While the average donation of those who do not choose their charity is 1.80, those who specify a destination for their donation give an average of 2.50. A Wilcoxon ranksum test rejects the hypothesis that the two levels are equal ( $p = 0.0370$ ).<sup>5</sup>

## 5 Conclusion

In our study, we do not detect any effect of a default on donation decisions. Those who were given relatively low, medium, and high default donation levels behave in a similar manner. We also observe that informing individuals about defaults has no impact on their decisions. This does not suggest that de-biasing techniques are not effective; there was no behavioral bias to remove.

While defaults seem to have an effect in some other settings, these appear to have a tendency to be situations in which the context is relatively complex and unfamiliar to participants (Choi et al., 2004; Schweitzer, 1995). Our task is very simple and rather familiar because of its contextualized nature. This may be conducive to

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<sup>5</sup>Nine percent of women and 4 percent of men choose their preferred charity. Among the individuals who specify a charity, there is no gender difference in donation level. Males donate 2.54, and females 2.4, on average, and a rank-sum test fails to reject equality ( $p = 0.83$ ).



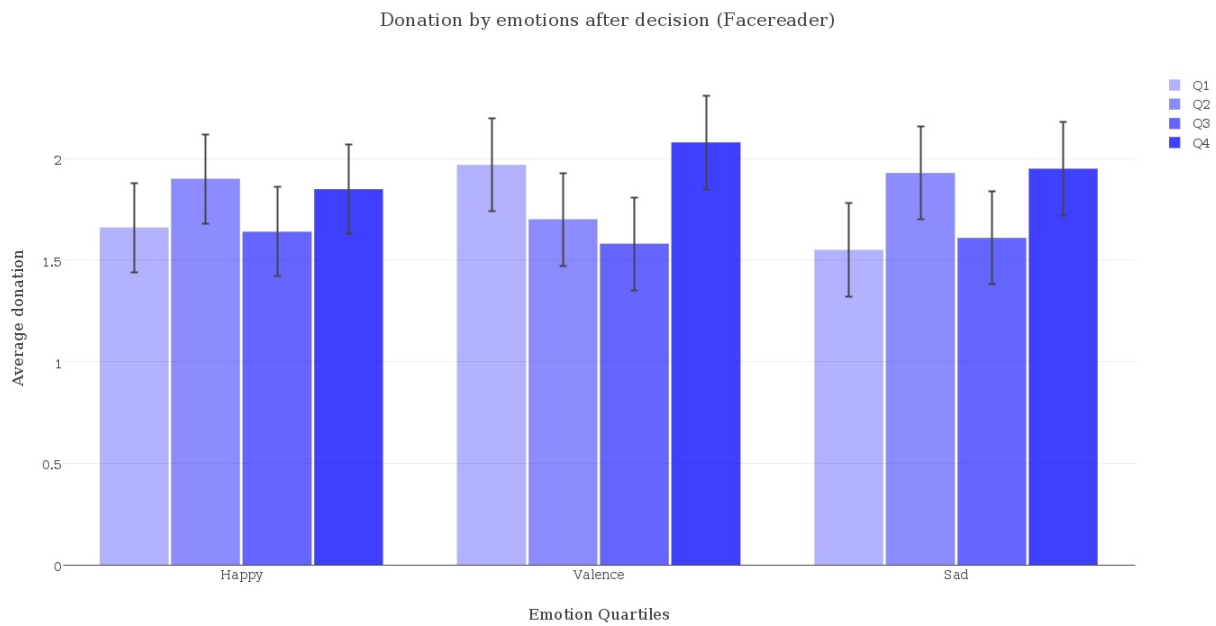
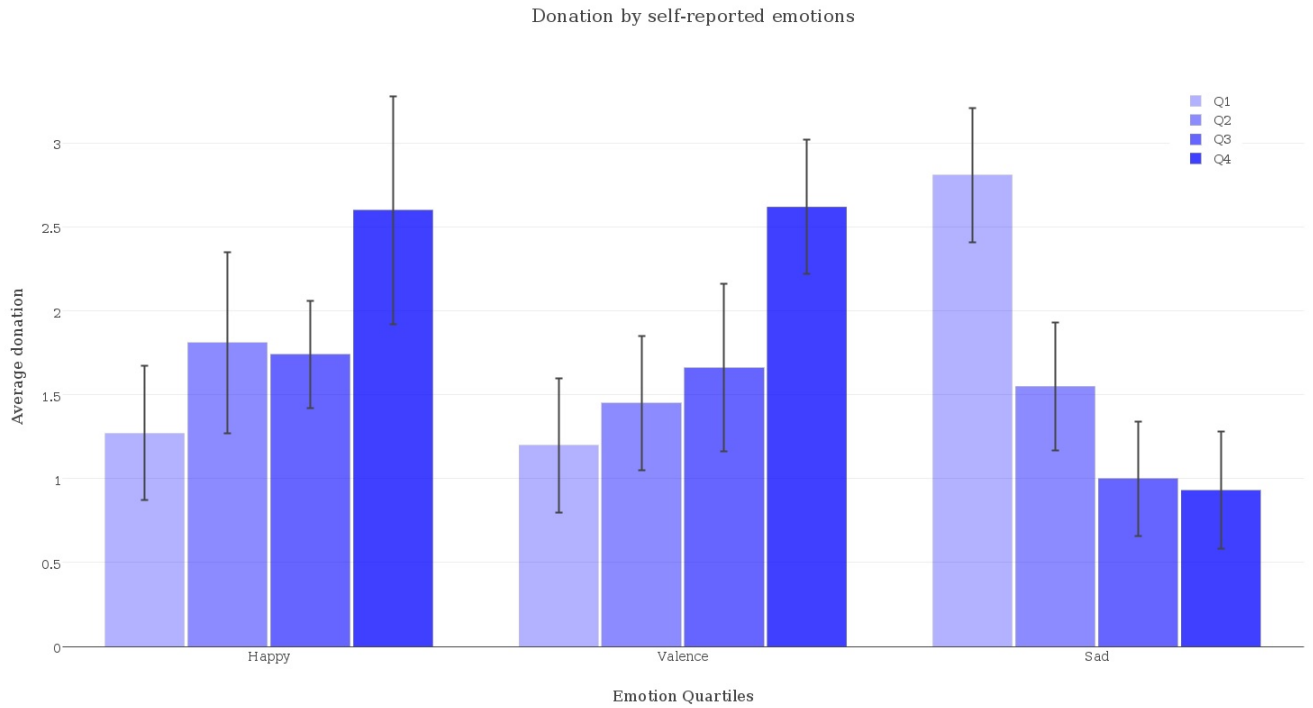


Figure 4: Self-reported and Facereader-measured emotions after decision

enabling people to form decisions confidently and to override the defaults. Our results are consistent with the idea that idiosyncratic individual factors are more important determinants of donation decisions than the variables we have varied in

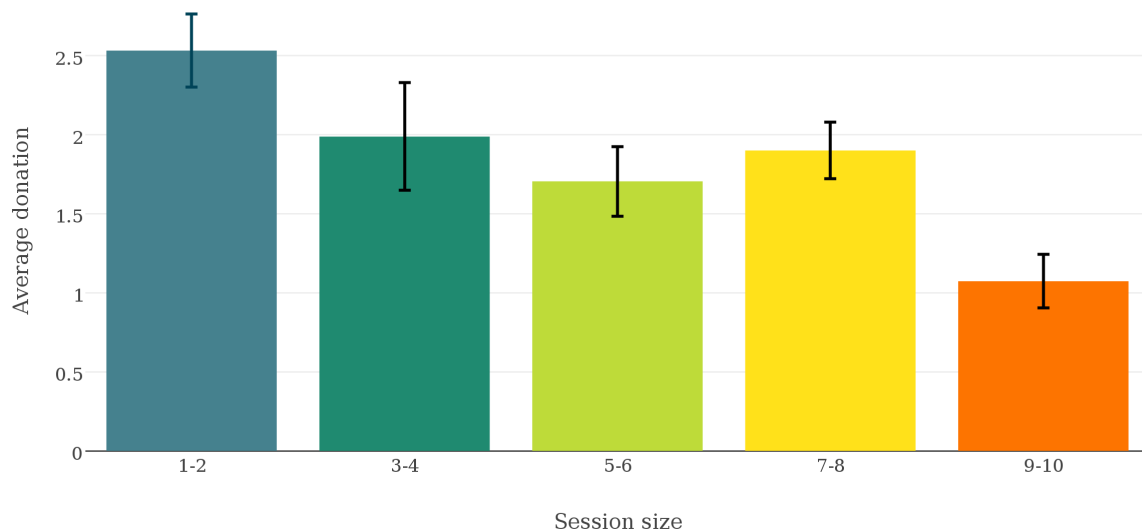


Figure 5: Average donation by session size

our study.

We have also studied the relationship between emotions and giving. We corroborate, using facereading software to measure emotional state, the finding that self-reported emotions are more positive for those who donate, though only among subsamples who are high donors or who indicate the intended destination for their donation. For the whole sample, however, there was no relationship between emotional valence and giving. Nonetheless, the relationship between emotions and giving in the subsamples in which we find it is important, since high donors and those knowledgeable about charities are likely to be those who make donations in the field.

Self-reports indicate that those who donate are in a more positive emotional state afterwards. However, our facereading data indicate those who donate experience a subsequent drop in emotional valence which returns then to the average level of the whole sample. The disagreement between the self-reports and Facereader may be due to a number of factors. One interpretation of this pattern is that Facereader data are unreliable measures of emotional state. However, this claim is belied by a number of studies that have documented intuitive relationships between Facereader data and economic decisions (Nguyen and Noussair, 2014; Breaban and Noussair, 2013; Van Leeuwen et al., 2014), as well as the studies cited in section 2.3 that have validated Facereader as a tool to read emotions.

Another possibility is that the self-report data include responses from individuals who feel compelled to make donations against their wishes. DellaVigna et al. (2012) note that some individuals try to avoid donating when they can, suggesting that confronting a decision about giving is an unpleasant experience. Indeed, we do observe higher donations in sessions where fewer subjects are present, perhaps

because individuals felt more pressure to give in small sessions.

Alternatively, the discrepancy may reflect the fact that facereading captures an immediate snapshot of current emotional state that puts much weight on the money that one has just expended or the social pressure present at the moment, while the self-reports reflect a more comprehensive sense of well-being, reflecting future expectation of positive emotion and other dimensions of satisfaction not necessarily manifest in immediate positive emotion.

## A Experimental Instructions

This section contains the instructions used at the experiment. The paragraph written in *italics* was added for the three *informed* conditions.

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This is an experiment in the economics of decision-making. You will be asked to split **5 Euros** (in 25 cent increments) between yourself and a charitable organization. Your earnings depend only on the decision you yourself make and will be kept private from other participants.

The charitable organization that will receive any money you and other students decide to donate is **KNGF Geleidehonden** (The Royal Dutch Guide Dog Foundation), which trains guide dogs for visually-impaired people. If you prefer, we can donate it to another charitable organization. Please indicate which one here:  
.....

You will now be presented with a screen similar to the following one. You can only select one option.

The amount I wish to donate to the charity is...

- 5.00
- 4.50
- 4.00
- 3.50
- 3.00
- 2.50
- 2.00
- 1.50
- 1.00
- 0.50
- 0.00

*Please note that one of the options may be **randomly pre-selected** for you. A number of published studies have shown that many people will be influenced by this*

selection: *i.e.* they will donate more if the pre-selected choice offers a high donation, and they will donate less if the pre-selected choice offers a low donation.

You will be paid within two working days via a bank transfer.

If you have any questions, please raise your hand and ask now.

Note: You will be video-taped throughout the experiment.

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