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## **Sincere Giving and Shame in a Dictator Game**

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## Altruisme sincère et sentiment de honte dans un jeu du dictateur

### Résumé

*Nous étudions expérimentalement les effets de la honte induite sur le comportement de don dans un jeu du dictateur avec option de sortie. La méthode expérimentale repose sur un protocole Internet et sur la méthode déclarative (« strategy method »). A l'aide de la technique d'induction émotionnelle, les participants sont répartis dans deux variantes émotionnelles différenciées (honte versus émotion neutre). L'induction de la honte ou d'une émotion neutre est effectuée avant que les participants n'effectuent la tâche associée au jeu du dictateur. Nous mesurons l'état émotionnel des participants (auto-évaluation) ainsi que leur comportement de don. Les résultats expérimentaux indiquent que l'induction de la honte augmente de façon significative le comportement de don par rapport à la variante contrôle (émotion neutre). Quarante et un pour cent des participants prennent l'option de sortie du jeu, aucune différence n'est constatée entre les deux variantes concernant cette option. Nos données indiquent également que les femmes prennent plus souvent l'option de sortie que les hommes. Les étudiants en économie effectuent, dans une large mesure, des choix plus égoïstes que les étudiants dans les autres sciences sociales.*

**Mots-clés :** Honte, procédure d'induction, altruisme, expérience d'internet, différences de genre

## Sincere Giving and Shame in a Dictator Game

### Abstract

*Our experiment aims at examining the impact of induced shame on altruism in a dictator game context with exit option. Using an Internet design, we collect a large battery of psychological and demographic variables which enables us to investigate dispositional and social characteristics likely to influence subjects' altruistic behaviour. Using the emotional induction technique, we induce either shameful or neutral emotions to the participants before they play the dictator game. We then measure the evaluation that subjects give of their own emotions, and subsequently observe their altruistic behaviour. We find that imagined shame-induction is able to increase significantly altruistic behaviour. We observe that forty-one percent of participants are willing to choose to exit the game and do not observe any difference in exiting between the two emotion conditions. Our data show that women are significantly more eager to take the exit option than males. Economics students are, to a large extent, more prone to adopt greedy choices patterns than other social sciences students.*

**Keywords:** Shame; Induction procedure; Altruism; Internet experiment; Gender differences

**JEL:** C91, D81

**PsycINFO Classification Code :** 2360

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<p><a href="http://ideas.repec.org/p/grt/wpegrt/2012-25.html">http://ideas.repec.org/p/grt/wpegrt/2012-25.html</a>.</p>
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## 1. Introduction

Our study is about the emergence of altruism in economic behaviour. Usually, economists assume that people are rational and selfish. In particular, rational individuals are expected to maximize their own utility or satisfaction without paying attention to the utility of the others. However, many economists have recently recognized that people might be able to exhibit social or “other-regarding” preferences in an economic context (Camerer, 2003). Numerous economic experimental studies have shown that people can be cooperative, reciprocal, fair or even altruistic, when they play games in the context of the laboratory.

Altruistic behaviour is a sacrifice of one’s resources for the benefit of others, representing a tradeoff between one’s self-interest and regard for others. In the psychological literature, altruism is usually measured by asking individuals how they would behave or feel towards other people in various situations. In economics, the “Dictator Game” (DG) is considered as a widely used and simple minimalist environment for investigating altruism. In this game, one participant, who is called the “Dictator”, is given an amount of real money (for instance, 10 euros) that he or she has to divide however he or she likes with an anonymous participant, who is called the “receiver” or the “recipient”. Then, the receiver who knows the dictator’s instructions must accept whatever division the dictator makes, even if the dictator gives nothing. According to game theory approach, the DG has got a very simple theoretical solution: a rational dictator who cares only about maximizing selfish payoffs should give nothing to the receiver. However, there is a great deal of experimental evidence showing that dictators usually give a mean amount of between 20% and 30% of the endowment (Camerer, 2003). Often, a majority of dictators give a positive amount to recipients. Because strategy is not a concern in the DG, economists usually conclude that giving is the consequence of prosocial types of behaviour, which include pure altruistic preferences (Becker, 1976), a warm glow of decision making (Andreoni, 1990), reciprocity (Rabin, 1993) or a concern for the equality of the resulting allocation (Fehr and Schmidt, 1999; Bolton and Ockenfels, 2000).

However, it has also been argued that giving in dictator games might arise from a desire of subjects to appear to be acting in a socially appropriate way because their individual behaviour is observed by others (Koch and Normann, 2008). The equal sharing norm being widespread, fair or positive giving might be driven by a desire for social esteem in relation to this norm. Hoffman, McCabe, Shachat and Smith (1994) thus suggested that fairness might not be “own’ preference, but a derivative of the judgment of others.” In a widely cited experiment, Hoffman McCabe and Smith (1996) reported a significant decrease of donations in the DG – sixty percent of dictators deciding to keep the whole amount for themselves – by imposing strict anonymity or “double-blind” conditions<sup>1</sup> and by decreasing the “social distance” between subjects and experimenter, as well as among the subjects themselves. Several recent studies have suggested that many dictators were motivated to give what they thought receivers expected them to give (Dufwenberg and Gneezy, 2000; Servátka, 2009). Haley and Fessler (2005) and Rigdon, Ishii, Watabe and Kitayama (2009) highlight the power of expectations by means of a trivial trick: the presence of a stylized eyespot on the screen or even of three dots in a “watching-eyes” configuration (signifying presumably “you are being watched”) is sufficient to increase significantly the level of donations. Sharrif and Norenzayan (2007) also show that subjects allocated more money to anonymous strangers when God concepts are implicitly activated than when neutral or no concepts are activated. Thus, giving might occur because dictators do not want to appear selfish, even to an anonymous receiver who cannot retaliate or to an implicit moral institution. These findings would imply that donations in the standard dictator game do not

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<sup>1</sup> A “double-blind” procedure implies that individual subjects decisions cannot be known by the experimenter or by anyone else except the decision maker.

necessarily reflect a real taste for fairness or altruism but rather a real “concern for appearance”. The unanswered question in the dictator game literature is thus whether dictators follow social norms because they truly care of others or because they are worried about the regard of others?

In their experiment, Dana, Cain and Dawes (2006) have proposed a useful design capable of controlling dictator’s concern for receiver’s regard. The authors add an exit option after the Dictator Game: after making their choices, dictators are given the option to exit the game in which case they receive \$9, the receiver gets nothing, and the receiver never learns that there could have been a dictator game. Consequently, if dictators are motivated to give some money only because they want to take the action they think that recipients expect them to take, then they are more likely to choose the exit option which gives them the possibility to avoid the recipient’s expectations. Dana and his colleagues (2006) find that 33% of all dictators are willing to exit, while 40% of those who previously give some money take the exit option, suggesting that previous generosity is not “sincere”<sup>2</sup>. On the contrary, 60% of dictators who give some positive amount of money are not doing so “reluctantly” in that they stick with their initial choice. We can reasonably assume that these dictators made sincere commitments to give some money: while keeping themselves from taking \$9 with total impunity, they revealed their real preference for sincere giving. Accordingly, if the aim is to measure people’s willingness to adopt “sincere” altruistic behaviour, standard dictator games with exit option can be considered as useful experimental tools.

Several studies have sustained the idea that shame might be capable of promoting altruistic behaviour in DG. Ellingsen and Johannesson (2008) investigate the hypothesis that altruism is caused by feelings of shame and pride and that these feelings are accentuated by others’ opinion of them. Precisely, they show that anticipated verbal feedback substantially increase donations compared to a control treatment without feedback messages. Similarly, Xiao and Houser (2009) have provided evidence that a preference for avoiding written expression of disapproval, or negative emotion, plays an important role in promoting fair decision making. Branas-Garzas (2007) add a piece of information provided to the dictators (“note that the recipient relies on you”) which remind subjects that their position in the game is advantageous but unfair. The purpose of the sentence is to call the subject’s attention to a particular moral rule, thereby creating a shameful context which motivates successfully altruistic behaviour. In their second experiment, Dana and his colleagues (2006) also show that dictators are more selfish in a private condition, where the receiver has no longer any information about how his payoff is determined, than in a public condition, where the receiver has this information. Lazear, Malmendier and Weber (2006) have interpreted that increased generosity in public dictator games as a sign of shame: dictators give away more in public dictator games because they are ashamed of their selfishness, whereas, in private dictator games, their selfishness cannot be detected, and so they feel free to give away less. Neilson (2009) have formally demonstrated that a context-dependent model, in which any utility function depends not only on the final allocation but also on characteristics of the choice problem faced, can usefully characterize “reluctance”, the property that dictators would prefer to avoid the opportunity to give, and also shame, the property that dictators would prefer to hide the fact that a choice was made.

In line with this previous theoretical or experimental literature, we assume that the emotion of shame may be able to promote altruism in a dictator game context with exit option. Shame is one the most intense self-conscious moral emotions (Tangney, 1991). Usual definitions of shame involve a concern for what others think about one’s behaviour or character (Tangney, Stuewig and Mashek, 2007). People can anticipate their likely emotional reactions as they consider behaviour alternatives. Thus, the self-conscious shame can have a strong influence on behaviour by providing critical feedback regarding both anticipated behaviour (feedback in the form of anticipatory shame) and

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<sup>2</sup> The authors refer to the latter group as “reluctant givers” who are willing to give money away but would preferred not to be put in a position where giving is an option.

actual behaviour (feedback in the form of consequential shame). Shame is also viewed as a more “public” moral emotion (compared with guilt) arising from public exposure and disapproval (Benedicte, 1946). Accordingly, we assume that shame is capable of stimulating donations in public DG because dictators can anticipate that they would be ashamed of their selfishness if they chose unfair divisions of the initial endowment. De Hooge, Breugelmans and Zeelenberg (2008) have demonstrated experimentally that shame is expected to motivate prosocial behaviour especially in people who are tempted to choose the immediate selfish solution in a “give-some” dilemma. Hence, a dictator who is willing to behave selfishly also knows that he will transgress the social norm of fairness and will suffer, consequently, a moral cost. Thus, we assume that shame-induced people will be more capable of making this implicit or explicit self-evaluation. Previous experimental studies have argued that shame feelings are capable of stimulating donations in the DG (Ellingsen and Johannesson, 2008; Branas-Garzas, 2007; Dana et al., 2006; Dana, Weber and Xi Kuang, 2007; Xiao et al., 2009). However, these studies did not measure dictators’ emotions and couldn’t attribute states of shame to them. In our study, using the emotional induction technique, we induce either shameful or neutral emotions to the participants before they play the dictator game. We then measure the evaluation that subjects give of their own emotions, and subsequently observe their altruistic behaviour. We predict that shame-induced dictators will give more to an anonymous receiver than neutral-induced participants.

Shame is also characterized by the tendency to deny or hide and by the desire to undo the shame situation (Frijda, Kuipers, and Ter Schure, 1989). On the whole, empirical evidence evaluating the action tendencies of people experiencing shame suggests that shame promotes defensiveness, interpersonal separation, and distance (Tangney et al., 2007). An exit option typically provides participants who choose unfair giving the possibility of undoing the shame situation. Indeed, exit option suppresses common knowledge of the rules of the game which enable receivers to become aware of being treated unkindly by those dictators. We predict that shame-induced dictators who choose unfair donations will choose more frequently the exit option than control participants.

## **2. Experimental Design**

Our objective was to study the impact of induced shame feelings on altruistic behaviour in a Dictator Game hypothetical framework. The experiment was conducted online and included a dictator game with exit option preceded by an emotional induction procedure.

### **2.1. Internet procedure**

We run an Internet experiment which has several useful advantages for our experimental design (Anderhub, Müller and Schmidt, 2001). The Internet provides a relatively inexpensive way of reaching a large subject pool which can be heterogeneous in terms of education, grade levels, disciplines, age, sex, personality, etc., whereas laboratory experiments usually recruit their participants mostly among undergraduate students in one or two Departments of the same University. Moreover, decision making at one’s own PC at home or in the office is probably a more natural setting than that in the laboratory. The procedure is thus more convenient and is probably well adapted to the use of the “strategy method” (Selten, 1987) in which participants are simply asked to indicate how they would choose between different allocation choices. With the Internet procedure, participants have sufficient time to make their decisions and have the opportunity to fully explain their motivations. Using an Internet experiment, however, makes difficult payments of the participants (Duersch, Oechssler and Schipper, 2009). Economists usually use real money and assert that results with hypothetical money might fail to reach external validity because the general pattern of results would not be the same as if real money were distributed (see Hertwig and Ortmann, 2001, for a discussion on this point). However, Ben-Ner, Kramer and Levy (2008) find that giving in the DG

with actual and hypothetical money is nearly identical on average. Likewise, Branas-Garzas (2006) find no significant differences in donations between the real-payoff and hypothetical experiments in a framed dictator game context. Thus, no real monetary payment was offered to the participants in the present study. However, participants were informed that those who completed the two online studies would take part in a lottery which enabled them to win little gifts (some 110 USB keys at the effigy of their University were offered with an approximate value of 8 euros each).

## **2.2. Participants**

Almost sixteen thousands e-mails were sent to students at their electronic mail address at a French University, asking them to participate to an economic study. This e-mail included a 8-digit random code, with which they logged themselves into the online experiment. Volunteer participants to the study consisted of five hundred ninety-six undergraduate and postgraduate students from a wide range of disciplines (Law, Economics, Education Sciences and Politics). Data from three subjects, who gave incoherent answers during the main task, were discarded. Five hundred ninety-three participants remained.

On the first page of the Internet protocol, it was explained that the study was a research on individual decision-making and that all personal data was strictly confidential, anonymous, and secure. We used a very simple HTML format which gave the used-interface an academic look and sense. We made explicit for each participant that the Internet design made impossible to change a previous decision after its validation. Clearly, we introduced this explicit rule essentially to prevent a subject from modifying the amount of giving in the dictator game after discovering the exit option. We also controlled for time decision.

After completion of the study, a list of the 110 lottery winning codes was mailed to all participants. The e-mail contained the same 8-digit code as before. Thus, participants' data could be unequivocally matched across the two occasions.

## **2.3. Induction procedure**

In order to induce a feeling of shame, we used de Hooze and her colleagues (2008, first experiment) "imagined shame scenario". Participants were asked the following: *"Imagine you are following a new course in another University, where everybody has to give a presentation in a work group. In your working group, 25 students are present."* In the shame condition, participants then read the following: *"When you have to give your presentation everything goes completely wrong. You stumble over your own words, your story is muddled and at the end it is clear that nobody understood what you were trying to tell. At the end some people from the audience ask you questions. Then it becomes clear that you have no mastery of the subject at all."* In the control condition, participants read the following: *"When you have to give your presentation everything goes normally. Your presentation is as good as those of the other students and in no way do you stand out."*

In their study, de Hooze et al. (2008) have shown that induction of "imagined shame" is able to motivate prosocial behaviour in a give-some dilemma game, but only when shame is relevant for the decision at hand (i.e., endogenous). So, we also introduced the exogenous versus endogenous influences of shame in our experimental design. After the emotion induction procedure, participants imagined they played the dictator game (with exit option) with a student belonging to the new course, called "receiver". In the endogenous condition, the receiver was a student who had seen the presentation. In the exogenous condition, the receiver had not seen the presentation.



## **2.4. Main task: an allocation decision in a dictator game with exit option**

Subjects were given the precise instructions of the standard dictator game in a “single-blind” context (Hoffman et al., 1996). Thus, the instructions made clear that complete anonymity of all decisions was guaranteed with respect to other subjects (but not to the experimenter). The words dictator and receiver were not used in the instructions to describe the roles and the game was described as a simple allocation task between two players, A and B. It was indicated unambiguously that common knowledge of the rules of the game was ensured for the two putative players in the (dictator) game. Then, participants were asked to imagine that they are in the position of dictator in the game (player A). Precisely, they were asked to think about how they would allocate an amount of 10€ in 1€ increments between themselves and an anonymous receiver. In the endogenous condition, they had to assume that the anonymous receiver was one of the students who had seen their oral presentation. In the exogenous condition, they were invited to imagine that the receiver had only followed the new course but had not seen their oral presentation. Participants were told that their choices were hypothetical, i.e. that no real money was at stake.

After making their allocation choice, participants were asked anew to envisage what they would choose if they were given the possibility to take an exit option for 9€. Participants were explained that, if the exit option was chosen, receivers were given nothing but were also not told about the game. On the contrary, if they chose to stay with the (dictator) game, their original division of the 10€ would be executed and the receiver would learn the complete rules of the game. So, if they were given this possibility, would they choose the exit option or not?

## **3. Results**

### **3.1. Population sample descriptive statistics**

Our sample comprised five hundred ninety-three students. Three hundred sixty-eight participants were females (62%), whereas two hundred twenty-five were males. The mean age is 22.6 years (SD = 4.0). Three hundred and three participants were undergraduates (51%). Our population sample was composed of law students (37%), economics students (23%), education sciences students (21%), politics students (10%), and students belonging to other departments (9%).

### **3.2. Emotional induction**

Participants were given a list of eight emotion names and asked to indicate which emotion they would feel if they were to live the performance situation described in the imagined scenario (shame versus control condition). The list included the following emotions: stupefaction, pride, shame, relief, fear, satisfaction, joy and sadness. Then, they were asked to indicate the intensity of the chosen emotion on a 10-point scale, ranging from 1=‘no emotion at all’ to 11=‘high emotional intensity’.

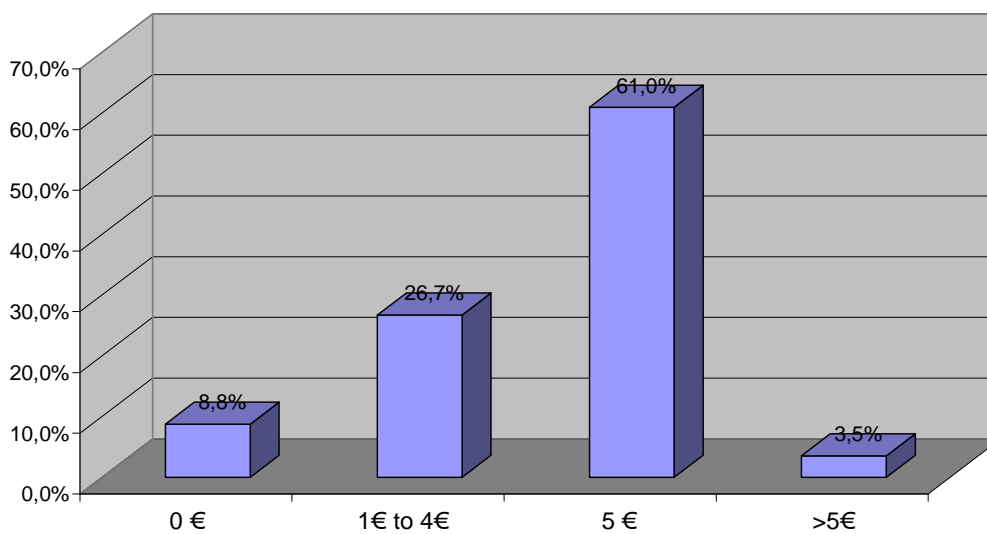
In the shame condition, among the 338 participants, 271 (80.2%) chose the emotion of shame. On average, participants indicated an intensity of shame equals to 8.9 (SD = 1.7). In the control condition, among the 255 participants, 208 (81.6%) chose a non negative emotion. The mean average of the emotional intensity declared by subjects was 6.8 (SD = 2.1). Overall, these results confirmed the effectiveness of our emotional manipulation.

After our induction procedure, solely the participants who reported the emotional state matching their experimental condition were retained for further analysis: 479 participants remained. All subsequent results presented below are thus based upon these 479 dictators.

### 3.3. Allocation decisions in the dictator game

Four different individual dictator profiles can be distinguished: those who give nothing (8.8%), those who give the fair stake (61.0%), those who give more than 5€ (3.5%) and the others who give a positive amount that is less than 5€ (26.7%). For the sake of simplicity, we shall identify these different individual profiles as being greedy or egoistic (0€), unfair (1€ to 4€), fair (5€), and generous (>5€). A histogram of dictators' putative offer amounts in the experiment is given in Figure 1 below.

**Figure 1: Dictators' offers by classes of of giving in all conditions**



In a meta-analysis, Engel (2010) indicate that usually 36% of all participants are egoistic, 34% are unfair, while 30% are fair or generous. Comparatively, our data show that participants are willing to give more to their recipient and that the proportion of those who keep the whole stake for themselves is rather low. However, the distribution of offers in Figure 1 is similar to that obtained in previous studies in the dictator game literature in similar conditions (Dalbert and Umlauf, 2009; Fetchenhauser and Hang, 2004; Tan and Forgas, 2010). Experimental results from Study 1 in Dalbert and Umlauf (2009) can be used to serve as a comparison: 0€ (5.6%); 5€ to 20€ (35.2%); 25€ (54.4%); more than 25€ (4.8%). Fetchenhauser and Hang (2004) also find that 58.5% of the participants make an equal split of the real money they have to divide between themselves and an anonymous receiver, whereas 41.5% of all participants give less than an equal split.

We used the Ordered Logit Model to study more precisely the variables that differentiate dictators' offers in the experiment. Our dependant variable was the amount of hypothetical money dictators were willing to give to their recipient. We coded our dependant variable such as {code 0 = 0€, code 1 = 1€ to 4€; code 2 = 5€; code 3 = >5€}. This coding reflects a ranking measuring greater "altruism". However, the coding only reflects an ordinal ranking, which implies, for example, that the difference between a 0 and a 1 cannot be treated as equivalent to the difference between a 1 and a 2. It means, for instance, that greedy preferences pattern (0€) show lesser altruistic behaviour than unfair choice (1€ to 4€), which is itself less generous than fair offer (5€), but that these differences represent only an ordinal meaning. We can reasonably assume that preferences patterns in the



putative dictator game reflect such a natural altruism order. Thus, an Ordered Logit Model is well adapted to take into account the extra information implicit in the ordinal nature of our dependant variable (Kennedy, 2003). The Ordered Logit Model specifies that  $Y^* = \beta X + \varepsilon$  is an unobservable index of “altruism” where  $X$  denotes the explanatory variables and  $\beta$  the estimated parameters. The dependant variable is such that  $Y=[0\text{€}]$  if  $Y^* < d_1$ ,  $Y=[1\text{€ to } 4\text{€}]$  if  $d_1 < Y^* < d_2$ ,  $Y=[5\text{€}]$  if  $d_2 < Y^* < d_3$  and  $Y=[>5\text{€}]$  if  $d_3 < Y^* < d_4$ , where the  $d$ s are unknown “threshold” parameters that must be estimated along with the parameters  $\beta$ . Estimation then proceeds by maximum likelihood: the probability of obtaining an observation with  $Y=[0\text{€}]$ , for instance, is equal to  $\text{Prob}(Y^* = \beta X + \varepsilon < d_1) = \text{Prob}(\varepsilon < d_1 - \beta X)$ .

Table 1 below summarizes the twelve explanatory variables used in the analysis. The factors that determine the likelihood that a participant will choose a specific category of giving are divided into the experimental (A), demographic (B), and education (C and D) variables.

**Table 1: Explanatory variables**

A. Experimental	
<i>Emotion Condition</i>	1 if participant is in the shame condition; 0 otherwise
<i>Emotion Influence</i>	1 if participant is in the endogenous condition; 0 otherwise
B. Demographic	
<i>Age</i>	Age of participant (in years)
<i>Gender</i>	1 if male; 0 if female
C. Disciplines	
<i>Law Studies</i>	1 if participant is a Law student; 0 otherwise
<i>Economics</i>	1 if participant is a student in Economics; 0 otherwise
<i>Politic Studies</i>	1 if participant is a student in Politic Studies; 0 otherwise
<i>Education Sciences Studies</i>	1 if participant is a student in Education Sciences; 0 otherwise
<i>Other Studies</i>	1 if participant belongs to another Department; 0 otherwise
D. Grade Levels	
<i>Undergraduate</i>	1 if participant is in Licence; 0 otherwise
<i>Postgraduate</i>	1 if participant is in Master or Ph. D; 0 otherwise

The results of our estimations are presented in Table 2 below. In the estimation, the main representative qualitative categories – law students and undergraduate participants – were coded as reference variables.

**Table 2: Estimation results of the Ordered Logit Model (“Altruism index”)**

Variables	Coefficient	Std Error	P-value
Emotion Condition	0.375	0.187	0.048
Emotion Influence	0.247	0.186	0.185
Age	0.033	0.029	0.250
Gender	0.138	0.202	0.494
Postgraduate	0.169	0.210	0.422
Economics	-0.827	0.246	0.001
Politic Studies	-0.070	0.345	0.839
Education Sciences Studies	-0.238	0.279	0.393
Other Departments	0.075	0.364	0.836

Number of observations: 479; *pseudo-R*<sup>2</sup>: 0.035, chi-squared: 24.27 ( $p < 0.001$ )

Our estimates show that Emotion Condition and Economics are significant variables explaining altruistic behaviour ( $p < 0.05$ ). We expected that participants in the shame condition would give more to their anonymous receiver than participants in the control condition. Our findings support this hypothesis at a five percent level: shame-induced subjects exhibit more fair or generous behaviour ( $\geq 5\text{€}$ ) than control subjects (68% compared with 59%,  $\chi^2(1) = 4.23$ ,  $p < 0.05$ ). However, we do not observe any significant impact of Emotion Influence on altruistic behaviour: an ANOVA reveals that the distribution of offers from participants in the two endogenous or exogenous conditions is similar ( $F(1, 479) = 0.23$ , ns). Our data also show that economics students significantly show less altruistic behaviour than law students ( $p < 0.01$ ). In particular, economists are unambiguously more prone to donate nothing or less than 5€ than law students (54% compared with 30%,  $\chi^2(1) = 23.7$ ,  $p < 0.001$ ). Moreover, we find that undergraduate economics students are significantly more likely to give less than 5€ than postgraduate economists (65% compared with 41%,  $\chi^2(1) = 4.8$ ,  $p < 0.05$ ). We do not notice any behavioural differences between law students and other students. We also find that Gender, Age and Postgraduate are not significant variables at the 10 percent level.

The estimates of the slope of the coefficients resulting from the maximum likelihood procedure do not estimate the parameters  $\beta$  of the Ordered Logit Model because of the normalization inherent to this estimating procedure. Consequently, we have computed the partial derivative of the Logit equation in order to obtain the change in the expected value of our dependant variable (Y) caused by a one unit increase in each explanatory variable, holding constant the other independent variables in the equation. These marginal effects enable us to precise the intensity of the impact of each explanatory variable on altruistic behaviour. The marginal effects of significant explanatory variables are reported in Table 3.

**Table 3: Marginal effects of explanatory variables in the Ordered Logit Model<sup>a</sup>**

Variables	Greedy 0€	Unfair 1€ to 4€	Fair 5€	Generous >5€
Emotion Condition	-0.028	-0.057	0.072	0.012
Economics	0.075	0.122	-0.173	-0.022

<sup>a</sup> We only report marginal effects of significant explanatory variables at the 5 percent level.

An apparent altruistic behaviour “threshold” appears for the two explanatory variables, Emotion Condition and Economics. Thus, shame condition clearly makes less likely an unfair giving (1€ to 4€) but enhances on the contrary fair behaviour (5€), whereas economics studies lead to the opposite behavioural trend. For instance, for a shame-induced participant, the probability of giving an unfair proposal to his/her receiver falls by 5.7 percent (compared with a neutral induced subject), while the probability of being fair increases to 7.2 percent, all other things being equal. On the contrary, an economist is expected to be more greedy (+7.5%) or unfair (+12.2%), and also less fair (-17.3%) or generous (-2.2%), than a jurist.

### 3.4. Exit option

The possibility of exiting was offered to participants just after their decision in the putative dictator game. Our data indicate that one hundred ninety-six of the 479 dictators (41%) indicate that they prefer exiting from the game and leave the receiver with nothing. This proportion is comparable to that observed in the study of Dana and his colleagues (2006), who report a 33% exit option percentage (20/61). Similarly, Mellers, Haselhuhn, Tetlock, Silva and Isen (2010) find that almost half of the dictators (48%) chose to exit, and that exiting occurs across all initial offers. However, as can be seen from Table 4, the percentage of dictators who exit in our sample depends crucially on factors such as gender, disciplines and previous initial putative gifts from dictators.

**Table 4: Proportions of dictators who exit as a function of main explanatory variables**

Emotion Condition		Gender**		Disciplines**	
Shame	Control	Males	Females	Economists	Other Students
41%	41%	34%	45%	51%	38%
		Previous Giving <sup>a</sup>			
<b>All</b>	0€*	1€ to 4€***	5€	>5€**	
<b>41%</b>	45%	59%	32%	59%	

\* p<0.10; \*\* p<0.05; \*\*\* p<0.01

<sup>a</sup> We use a simple Khi-deux test to compare the proportion of exit decisions for each category of previous giving (0€, 1€ to 4€, and >5€) with the proportion of exiters who give previously 5€.

We observe that males exit less often than females (34% compared with 45%,  $\chi^2(1) = 4.3$ ,  $p < 0.05$ ). On the contrary, economics students are much more likely to exit than other students (51% compared with 38%,  $\chi^2(1) = 5.1$ ,  $p < 0.05$ ). Interestingly, we find that exit proportions vary as a function of previous giving. Dana and his colleagues (2006) expected and observed little relationship between the size of the initial gift to the receiver and the decision to exit. However, Broberg, Elligsen and Johannesson (2007) have estimated the distribution of exit reservation prices in a dictator game and have found that subjects who give nothing indicate a higher exit reservation price than those who make positive donations. The authors have concluded that subjects who make larger donations in the dictator game are more prone to exit. Our data suggest that the relationship between exit decisions and previous giving might be more complex, depending crucially on individual giving profiles: for instance, exit proportion reaches 59 percent for unfair donors (1€ to 4€) as well as for generous donors (>5€), whereas it is only 32 percent for fair dictators (5€).

We used a Binary Logit equation in order to study more precisely all explanatory variables (see Table 1) that could differentiate exit option choices (Yes or No). We also added in our model a specific variable related to previous giving chosen by dictators. In the estimation, the main representative qualitative categories – law students, undergraduate participants and fair previous giving (5€) – were coded as reference variables. Estimations results are reported in Table 5.

**Table 5: Estimation results of the Binomial Probit Model (Exit Option: Yes or No)**

Variables	Coefficient	Std Error	P-value	dY/dX <sup>a</sup>
Emotion Condition	-0.044	0.132	0.764	ns
Emotion Influence	-0.082	0.132	0.532	ns
Age	0.007	0.019	0.717	ns
Gender	-0.401	0.133	0.003	-0.152
Postgraduate	0.056	0.144	0.699	ns
Economics	0.271	0.162	0.094	0.106
Politic Studies	0.212	0.234	0.365	ns
Education Sciences Studies	0.138	0.186	0.460	ns
Other Departments	-0.780	0.260	0.003	-0.259
Greedy (0€)	0.374	0.213	0.079	0.148
Unfair (1€ to 4€)	0.690	0.141	0.001	0.269
Generous (>5€)	0.710	0.316	0.025	0.277

Number of observations: 479; *pseudo-R*<sup>2</sup>: 0.082, chi-squared: 52.71 ( $p < 0.001$ ).

<sup>a</sup> We only report marginal effects of significant explanatory variables at the 10 percent level.

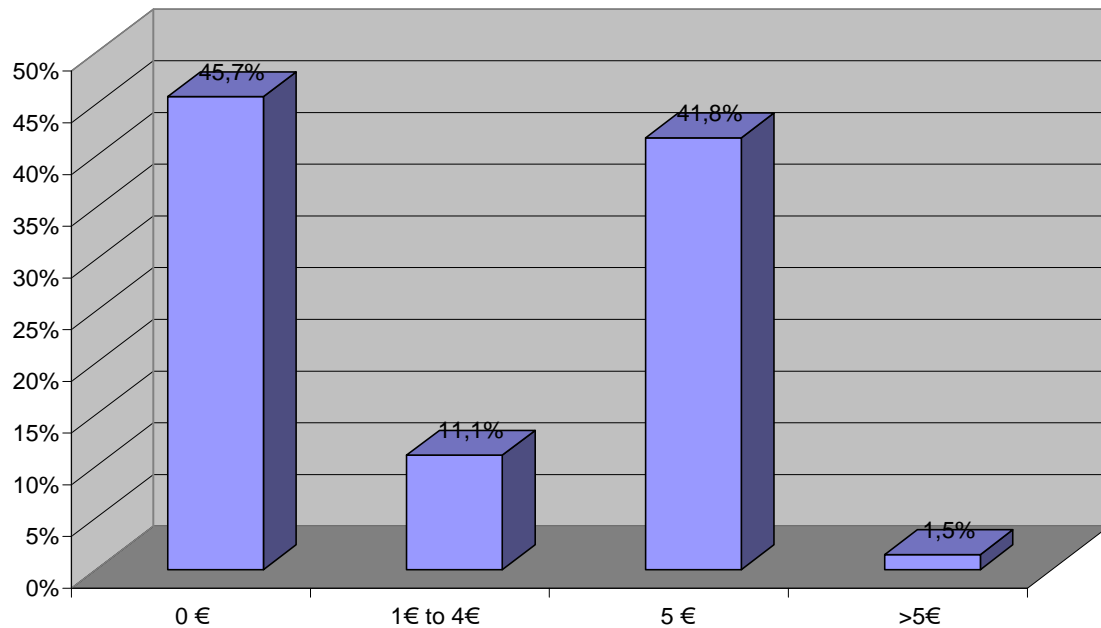
Our estimation indicates that Emotion Condition and Emotion Influence have not any significant explanatory power in explaining exit option decisions. We hypothesized that shame-

induction would enhance the desire to hide the fact that a selfish choice was made and would consequently increase exiting for egoistic or unfair donators. Our findings do not confirm this hypothesis: in particular, the exit proportion for selfish or unfair donators is almost identical in the two emotional conditions (56%). However, we find that Gender, Economics, Other Departments, as well as Greedy, Unfair and Generous Previous Giving, are significant, at a 10 percent level, in explaining the likelihood that a subject will choose to exit after indicating his/her choice in the dictator game. In particular, we observe that the probability that a female rather than a male will drop out of the game is 15.2% higher ( $p < 0.01$ ), all things being equal. An economics student is also more likely to abandon his previous decision than a law student (+10.6%); on the contrary, a student belonging to Other Departments is expected to exit less frequently than a law student (-25.9%). Age and Postgraduate scores are not found significant in explaining exit option choices patterns.

Considering now the relationship between previous giving and exit decisions, our estimations confirm that exit decisions depend on individual offer profiles. Hence, the probability that an individual choose exit option is significantly higher for participants who choose unfair gifts compared with those who give fair stake (+26.9%). Similarly, greedy dictators are also significantly more motivated to abandon their earlier decision than fair participants (+14.8%). This result is interesting because exit option has got clear opposite monetary implications for fair and egoistic dictators: the former will earn four additional euros whereas exiting will cost one euro to the latter. Finally, we observe that generous donators are very more likely to exit the game than fair individuals (+27.7%): this last result is striking because it suggests that large generosity might be to some extent insincere.

### **3.5. Sincere Giving**

The dictator game with exit option is also an interesting device for studying behavioural consistency. Past actions are often used as a starting point for decision making and people tend to behave consistently with past actions and cognitions (Cialdini, Trost and Newsome, 1995). Hence, exit option can be used to measure how people are capable of maintaining their previous decision rather than benefiting of 9€ with total impunity. Our results highlighted that a majority of people are willing to stick with their initial decisions (59%). In particular, 68 percent of those who give 5€ do not choose the exit option at a personal cost of 4€. For this reason, they can be considered as “sincere” givers who donate without any concern for appearance. For charity business, this can have crucial consequences because what is essential for charitable organizations is the amount of donations people are willing to give sincerely and regularly. On the contrary, insincere givers, who give only once and will try to stop donations at the first occasion, will be of less interest. The dictator game with exit option allows us to determine the amount of declared sincere donations. In order to obtain the distribution of sincere donations in our sample, we have simply computed together previous donations and exit decisions (see Figure 2): for instance, a putative dictator who previously give some positive amount (for instance, 3€ or even 6€), but thereafter indicates that he/she is willing to exit, finally gives nothing to his/her recipient and can be considered as belonging to the greedy category (0€); on the contrary, a fair giver who maintains his/her previous decision will be considered as a sincere fair donator (5€).

**Figure 2: Sincere Giving in the exit option DG in all conditions**

We observe that the proportion of dictators who give nothing at all (0€) is the least (45.7%) is considerably higher as compared with those who indicate initially that they are willing to keep the whole stake for themselves (8.8%, see Figure 1). On the contrary, the proportion of sincere fair donors (41.8%) diminishes significantly compared with the proportion of dictators who exhibit prior preferences for fair giving (61.0%).

The DG with exit option enables us to examine the influence of emotion induction on sincere giving. We initially find that a feeling of shame had a positive impact, though slight, on donations (see 3.3). However, shame do not change exit decisions (see 3.4). Consequently, shame induction has no significant influence on sincere giving<sup>3</sup>: in particular, the proportion of participants who give sincere fair donations is similar in the two emotion conditions (44% in the shame condition compared with 39% in the control condition,  $\chi^2(1) = 1.1$ , ns). Likewise, the proportion of purely sincere egoistic donors is almost identical in the shame and control conditions (46% compared with 45%,  $\chi^2(1) = 0.1$ , ns).

Considering now the specific role of disciplines and gender, we have already pointed out that economics students choose more frequently egoistic (0€) or unfair offers (1€ to 4€) than students in other social sciences (45% compared with 31%,  $\chi^2(1) = 16.8$ ,  $p < 0.01$ ) and also exit more frequently. Unsurprisingly, we observe that economists give fair or generous giving very less frequently than other students (27% compared with 48%,  $\chi^2(1) = 14.2$ ,  $p < 0.01$ ). Consequently, a potential receiver can expect to receive (sincerely) on average significantly less money if his/her putative dictator is an economist than a student in other social sciences. Our data also indicate that females do not give more frequently fair or generous donations than males. However, female participants are significantly more eager to exit the dictator game. Computing together previous giving and exit choices, we observe that female choices pattern are significantly different from male choices pattern ( $\chi^2(2) = 5.3$ ,  $p < 0.10$ ). In particular, sincere greedy choices (0€) are slightly higher for women than for men (49% compared with 41%,  $\chi^2(1) = 2.66$ ,  $p = 0.11$ ).

<sup>3</sup> Using an Ordered Logit Model, we find that Emotion condition was not a significant variable. Overall, Gender, Economics and Other students are found to be significant variables in the Logit estimation at the 10 percent level.

## **4. Discussion**

Our experiment aimed at examining the impact of induced shame on altruism in a dictator game context with hypothetical money. Using an Internet design, we have collected a large battery of educational and demographic variables which enabled us to investigate social characteristics likely to influence subjects' altruistic behaviour.

### ***4.1. Do induced shame feelings enhance sincere giving?***

Our data show that a vast majority of subjects indicate that they are willing to give fair or generous donations to their putative anonymous recipient. We also find that imagined shame-induction is able to increase significantly altruistic behaviour. Our study confirms recent empirical evidence that emotions, mood or even feelings might influence economic behaviour in an experimental setting<sup>4</sup>. Our findings also support the idea that moral emotions such as guilt or shame can stimulate prosocial types of behaviour in the short run (Frank, 1988; Ketelaar and Au, 2003; de Hooge et al., 2008) and that some people give because they are concerned with appearing fair to the recipient (Ellingsen and Johannesson, 2008): a dictator who is willing to follow his internal impulse to be selfish will have to transgress the external social norm requiring fairness. In our experiment, shame-induced people are probably more capable of making this implicit or explicit self-evaluation. We have asked players to explain their allocation decision in the position of the dictator. In the shame condition, among those who donate fair offers, some said, "I gave 5€ in order to feel less ashamed" or "To share the stake equally appears to be a fair solution, which helps me to counteract shame feelings induced by my oral presentation. I do not want to appear as much selfish as incompetent".

Nevertheless, we also observe that a substantial minority of participants (41%) are willing to choose to opt out of the game in total impunity. Thus, our study largely confirms the results of Dana and his colleagues (2006), indicating that some people give but would prefer to keep the recipient blind so that they do not have to give. These findings thus suggest that shame would be able to emphasize concern for appearances but would be incapable of encouraging real sincere altruism. Indeed, computing together altruistic behaviour in the dictator game and exit decisions, we observe no difference between the two emotion conditions: sincere giving choices pattern are similar for shame-induced and control participants. One possible explanation is that the act of giving a positive amount of money is sufficient to repair the self-esteem of shame-induced dictators who give, driven by a concern for appearing fair. Thereafter, those subjects can freely choose to exit the game without no more suffering any moral cost. This explanation is consistent with the psychological empirical evidence which suggests that feelings of shame apparently disrupt individual's ability to form empathic connections with others (Tangney et al., 2007). In particular, shame-proneness would be positively linked with the tendency to focus egocentrically on one's own distress and negatively or negligibly correlated with other-oriented empathy (Tangney, 1991).

### ***4.2. Are exit decisions linked to dictators' previous offers?***

In their study, Dana and his colleagues (2006) do not observe any relationship between exiting and the size of the original offer in the DG. However, our data indicate that the relationship might be rather complex, depending on the different categories of giving. In particular, fair donors (5€) are significantly less likely to exit than other givers. On the contrary, the dictators who appear initially to be generous, while donating more than 5 euros, are more motivated to exit than fair or even selfish

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<sup>4</sup> See, in particular, Nelissen, Dijker and de Vries, 2006; Tan and Forgas, 2010; Moretti and di Pellegrino, 2010; Capra, 2004; Stephen and Pham, 2008; Harlé and Sanfey, 2007; Petit, 2009; Mellers, Haselhuhn, Tetlock, Silva and Isen, 2010.



dictators. As already pointed out by Dana and his colleagues (2006, p. 200), “the very people who appear most generous may also be those who are the most motivated to avoid being asked for charity.” In the real world, people have indeed the possibility to escape situations that appeal to their generosity. For instance, if people believe a call will be a request for a donation they do not wish to make, people may not answer it. Similarly, people who want to avoid the feelings of shame or guilt triggered by encountering beggars can easily cross the street to avoid the encounters (Becker, 1976). Thus, it seems that generous offers cannot really be trusted: asking dictator-game players directly what they want to do (pleasure maximizing options) or what they think they ought to do (fairness-maximizing options), Mellers and her colleagues (2010) observe that (generous) offers ranging from \$6 to \$10 neither maximize pleasure nor are perceived as fair. Consequently, generous donators should not be expected to stick to their original decision when they are given the possibility to earn 9€ in total impunity.

Mellers and her colleagues (2010) have also pointed out that the overwhelming majority of participants (85%) view \$5 as the right thing to do, whereas 78% of players predict the greatest happiness if they offer less than \$5. As mentioned by the authors, “what a player want to do and what he or she believed is right may represent distinct, sometimes clashing, voices in the mind of players, and those clashing voices have behavioral consequences”. In particular, the authors find that players who exit more frequently are those who indicate an obvious conflict between what they want to do and what they believe they ought to do. Interestingly, they also observe that not all players want to maximize earnings and that, on the opposite, 22% of them believe they would be happiest if they share the amount of money equally (\$5). Likewise, not all participants believe that fairness is an equal split of the reward. In particular, 14% of them say that keeping everything is acceptable and fair within the context of the experiment. Consequently, a non negligible proportion of participants (22 + 14 = 36%) seem to have no reason to be dissatisfied with their previous allocation decision and, in turn, to choose the exit option. In our study, we have asked players who do not exit why they keep their initial offer, while rejecting the exit option. Those who offer the fair stake said, “I am satisfied with my initial fair choice”, “I assume my previous decision” or “I would have had bad conscience (if I had exited with 9€)”. Those who offer 0€ answered differently and said, for instance, “I prefer 10€ than 9€”. These answers clearly suggest that some of those who do not exit behave consistently with past actions and beliefs (Cialdini et al., 1995). However, their motivations depend on the size of their initial gift: those who give nothing confirm their selfishness, whereas fair contributors assert anew their preference for equity (Bolton and Ockenfels, 2000), reciprocity (Rabin, 1993), or their concern for others.

On the contrary, participants who take the escape route option usually indicate that the exit option allows them to avoid the receiver’s expectations. Some said, for instance, “Player B will never know my decision, and my intentions will be kept secret” or “I would have felt ashamed (about not giving more)”. Others indicate, however, that the exit option appears attractive (9€) in comparison with the amount of money they keep initially: “I thought initially I would earn 7€. With the exit option, I can earn 2€ more”.

### **4.3. Gender differences in altruistic choices**

A “gender effect” is usually observed in the Dictator Game experimental literature and indicates that women tend to give more than men in a position of dictator (Eckel and Grossman, 1998; Croson and Gneezy, 2009). Aguiar, Branas-Garza, Cobo-Reyes, Jimenez, and Miller (2009) also show that women are expected to be more generous than men in a DG. In particular, women consider that they are more generous than men while men do not perceive any behavioural differences between men and women. However, Eckel, de Oliveira and Grossman (2008) observe that women are expected to be more generous than they are in reality.

In our experiment, we do not observe any behavioural differences between male and female participants considering dictators' offers (see Table 2). Nevertheless, our study reveals that women are significantly more eager to take the exit option than males. Consequently, in a position of recipient, one cannot expect receiving more sincere donations if one's putative donor is a female rather than a male. In fact, the contrary might be true since male students finally give greedy offers (0€) less frequently than females. These results would imply that if women consider (wrongly) that they are systematically more generous than men (Aguiar et al., 2009), men might be right to expect no gender behavioural differences in (sincere) giving. These results are consistent with previous literature on gender differences in preferences. In particular, according to Croson and Gneezy (2009), the social preferences of women would be more context-dependent than those of men: women wouldn't be either more or less pro socially oriented, but their social preferences would be more malleable. For instance, Ben-Ner, Kong and Putternam (2004) find no gender differences in giving when the gender of the receiver is unknown or male. However, women give significantly less to other women than they give to men or to persons of unknown gender. In our study, women do not appear to act in a more socially appropriate way than men in the dictator game. However, when they are given the possibility to avoid the receiver's expectations, women are more motivated than men to take selfishly 9€ with total impunity. Overall, women participants do not give sincerely more than men in the least.

#### **4.4 Why economics students are more selfish than others?**

One specific interesting result in our study is that we find that economics students are, to a large extent, more prone to adopt greedy choices patterns than other social sciences students. Students in economics choose more frequently egoistic (0€) or unfair offers (1€ to 4€) than students in other social sciences and also exit more frequently. Some other studies have already shown that economics students sometimes behaved differently than others in experimental economic games. In particular, Frank, Gilovich and Regan (1993, 1996) show that non economics students generally exhibit a pronounced trend toward more cooperative behaviour with movement toward graduation, whereas this trend is absent for economists. Frank and his colleagues (1993) have suggested that economics majors behave in more self-interested ways than non economists and that this difference might result from training in economics. Teaching students the economic assumption of self-interest would lead them to conclude that people are and ought to be self-interested. Consequently, the "norm of self-interest" (Miller, 1999) would be more pervasive in Economics than in other social sciences studies.

Overall, in our sample, altruistic behavioural index do not depend on grade levels (see Table 2): in particular, postgraduate students do not give more frequently fair or generous offers than undergraduate participants. However, interestingly, we find that undergraduate economics students behave more (and not less) selfishly than postgraduate economists. Thus, our data do not confirm Frank and his colleagues's (1996) hypothesis and suggest that altruistic behavioural differences between social sciences students might be explained by a selection effect (Frey and Meier, 2003). Previous studies have already shown that behavioural differences in the DG might be associated with personality (Ben-Ner, Kramer and Levy, 2008; Ben-Ner and Kramer, 2010). For instance, Ben-Ner and Kramer (2010) found a positive diminishing relationship effect for agreeableness and giving, and a U-shaped relationship for extraversion and conscientiousness and giving. In the same way, Fetschenhauser and Huang (2004) find that fair behaviour correlates positively with perpetrator justice sensitivity: the higher participants score on perpetrator justice sensitivity scale, the more they are willing to make an equal split. These results thus suggest that a further investigation of potential associations between psychological individual characteristics, disciplines, and giving, would be necessary to understand the specificity of economists' selfish behaviour.

## 4.5. Conclusion

Our experiment aims at examining the impact of induced shame on altruism in a dictator game context with exit option. We find that imagined shame-induction is able to increase significantly altruistic behaviour. Our data also show that women are more likely to take the exit option than men, while economics students exhibit more selfish preferences than other social sciences students.

## References

- Aguiar F., Branas-Garza P., Cobo-Reyes R., Jimenez N., & Miller L. (2009). Are women expected to be more generous? *Experimental Economics*, 12, 93-98.
- Anderhub, V., Müller, R., & Schmidt, C. (2001). Design and evaluation in an economic experiment via the Internet. *Journal of Economic Behavior and Organization*, 46, 227-247.
- Andreoni J. (1990), Impure Altruism and Donations to Public Goods: a Theory of Warm-Glow Giving. *Economic Journal*, 100, 464-477.
- Becker G.S. (1976). *The economic approach to human behaviour*. Chicago: University of Chicago Press.
- Benedicte R. (1946). *The Chrysanthemum and the Sword*. Boston: Houghton Mifflin.
- Ben-Ner A., Kramer A., & Levy O. (2008). Economic and hypothetical dictator game experiments: Incentives effects at the individual level. *Journal of Socio-Economics*, 37, 1775-1784.
- Ben-Ner A., & Kramer A. (2010). Personality and altruism in the dictator game: Relationship to giving to kin, collaborators, competitors, and neutrals. *Personality and Individual Differences*. Doi: 10.1016/j.paid.2010.04.024.
- Bolton G., & Ockenfels A. (2000). ERC: A theory of equity, reciprocity and competition. *American Economic Review*, 90, 166-193.
- Brañas-Garzas P. (2006). Poverty in dictator games: Awaking solidarity. *Journal of Economic Behavior and Organization*, 60, 306-320.
- Brañas-Garzas P. (2007). Promoting helping Behavior with framing in dictator games. *Journal of Economic Psychology*, 28, 477-486.
- Brober T., Ellingsen T., & Johannesson M.(2007), « Is generosity involuntary? », *Economic Letters*, 94, 32-37.
- Camerer C. (2003). *Behavioral Game Theory*. Princeton, NJ: Princeton University Press.
- Capra M. (2004). Mood-Driven Behavior in Strategic Interactions. *American Economic Review*, 94, 367-372.
- Cialdini R.B., Trost M.R., & Newsom J.T. (1995). Preference for consistency: The development of a valid measure and the discovery of surprising behavioral implications. *Journal of Personality and Social Psychology*, 69, 318-328.
- Crosan, R., & Gneezy U. (2009). Gender Differences in Preferences. *Journal of Economic Literature* 47, 448-474.

- Dalbert C., & Umlauf S. (2009). The role of the justice motive in economic decision making. *Journal of Economic Psychology*, 30, 172-180.
- Dana J., Cain D., & Dawes R. (2006). What you don't know won't hurt me: Costly (but quiet) exit in dictator games. *Organizational Behavior and Human Decision Processes*, 100, 193-201.
- Dana J., Weber R., & Kuang J. (2007). Exploiting moral wiggle room: experiments demonstrating an illusory preference for fairness. *Economic Theory*, 33, 67-80.
- De Hooge, Breugelmans S.M., & Zeelenberg M. (2008). Not So Ugly After All: When Shame Acts as a Commitment Device. *Journal of Personality and Social Psychology*, 95, 933-943.
- Duersch, P., Oechssler, J., & Schipper B. C. (2009). Incentives for subjects in internet experiments. *Economics Letters*, 105, 120-122.
- Dufwenberg M., & Gneezy U. (2000). Measuring beliefs in an experimental lost wallet game. *Games and Economic Behavior*, 47, 163-182.
- Eckel C., de Oliveira A., & Grossman P. (2008). Gender and negotiation in the Small: Are Women (Perceived to be) More Cooperative than Men? *Negotiation Journal*, 24, 429-455.
- Eckel C., & Grossman P. (1998). Are women less selfish than men?: Evidence from Dictator Experiments. *Economic Journal*, 108, 726-735.
- Ellingsen T., & Johannesson M. (2008). Anticipated verbal feedback induces altruistic behavior. *Evolution and Human Behavior*, 29, 100-105.
- Engel C. (2010). Dictator Games: a Meta-Study. Working paper, Max Planck Institute.
- Fehr E., Schmidt K.M. (1999). A theory of Fairness, Competition, and Cooperation, *Quarterly Journal of Economics*, 114, 817-868.
- Fetchenhauser D., & Huang X. (2004). Justice Sensitivity and distributive decisions in experimental games. *Personality and Individual Differences*, 36, 1015-1029.
- Frank R.H. (1988). *Passions within reason: The Strategic role of emotions*. New York: Norton.
- Frank, R. H., Gilovich, T., & Regan, D. T. (1993). Does Studying Economics Inhibits Cooperation? *Journal of Economic Perspectives* 7, 159-171.
- Frank, R. H., Gilovich, T., & Regan, D. T. (1996). Do Economists Make Bad Citizens? *Journal of Economic Perspectives* 10, 187-192.
- Frijda N.H., Kuipers P., & Ter Schure E. (1989). Relations among emotion, appraisal, and emotional action readiness. *Journal of Personality and Social Psychology* 57, 212-228.
- Frey, B. S., & Meier S. (2003), Are Political Economists Selfish and Indoctrinated? Evidence from a natural experiment. *Economic Inquiry*, 41, 448-462.
- Haley K.J., & Fessler D. (2005). Nobody's watching? Subtle cues affect generosity in an anonymous economic game. *Evolution and Human Behavior* 26, 245-256.
- Harlé K., & Sanfey A. (2007). Incidental Sadness Biases Social Economic Decision in the Ultimatum Game, *Emotion* 7, 876-881.
- Hertwig R., & Ortmann A. (2001). Experimental practices in economics: A methodological challenge for psychologists? *Behavioral and Brain Sciences* 24, 383-451.
- Hoffman E., McCabe K., Shachat K., & Smith V. (1994). Preferences property rights and anonymity in bargaining games. *Games and Economic Behavior*, 7, 346-380.
- Hoffman E., McCabe K., & Smith V. (1996). Social Distance and Other-regarding Behavior in Dictator Games, *American Economic Review*, 86, 653-660.
- Kennedy, P. (2003). *A guide to Econometrics*. Blackwell Publishing, Oxford.

- Ketelaar T., Au W.T. (2003). The effects of guilt feelings on the behaviour of uncooperative individuals in repeated social bargaining games: An affect-as-information interpretation of the role of emotion in social interaction. *Cognition and Emotion* 17, 429-453.
- Koch A.K., & Normann H-T. (2008). Giving in Dictator Games: Regard for Others or Regards Others or Regards by Others 75, 223-231.
- Lazear E.P., Malmendier U, Weber R.A. (2006). Sorting in experiments with applications to social preferences. Working paper 12041, NBER.
- Miller D. (1999), The norm of self-interest, *American Psychologist*, 54, 1053-1060.
- Mellers B.A., Heshelhuhn M.M., Tetlock P.E., Silva J.C., & Isen A.M. (2010). Predicting Behavior in Economic Games by Looking Through The Eyes of the Players. *Journal of Experimental Psychology: General*, 139, 743-755.
- Moretti L., & di Pellegrino G. (2010). Disgust Selectively Modulates Reciprocal Fairness in Economic Interactions. *Emotion*, 10, 169-180.
- Neilson W. (2009). A theory of kindness, reluctance, and shame for social preferences. *Games and Economic Behavior*, 66, 394-403.
- Petit E. (2009). Emotion et décision économique dans le jeu de l'ultimatum. *Cahiers Internationaux de Psychologie Sociale*, 83, 71-90.
- Rabin M. (1993), Incorporating Fairness into Game Theory and Economics. *American Economic Review*, 83, 1281-1302.
- Rigdon M., Ishii K., Watabe M., & Kitayama S. (2009). Minimal social cues in the dictator game. *Journal of Economic Psychology*, 30, 358-367.
- Selten, R. (1967). Die Strateiemethode zur Erforschung des eingeschränkt rationalen Verhaltens im Rahmen eines Oligopolexperimentes. In: Sauer mann, H. (Ed.), Beiträge zur experimentellen Wirtschaftsforschung. J.C.B. Mohr (P. Seibek). Tübingen, 136-138.
- Shariff A., & Norenzayan A. (2007). God is Watching You – Priming God Concepts Increases Prosocial Behavior in an Anonymous Economic Game. *Psychological Science*, 18, 803-809
- Stephen A.T., & Pham M. T. (2008). On Feelings as a Heuristic for Making Offers in Ultimatum Negotiations. *Psychological Science*, 19, 1051-1058.
- Servátka M. (2009). Separating reputation, social influence, and identification effects in a dictator game. *European Economic Review*, 53, 197-209.
- Tan H.B., & Forgas J.P. (2010). When happiness makes us selfish, but sadness makes us fair: Affective influences on interpersonal strategies in the dictator game. *Journal of Experimental Social Psychology*, 46, 571-575.
- Tangney J.P. (1991). Moral affect: The good, the bad, and the ugly. *Journal of Personality and Social Psychology*, 61, 598-607.
- Tangney J. P., Stuewig J., & Mashek D. J. (2007). Moral Emotions and Moral Behavior. *Annual Review of Psychology*, 58, 355-372.
- Xiao E., & Houser D. (2009). Avoiding the sharp tongue: anticipated written messages promote fair economic exchange. *Journal of Economic Psychology*, 30, 393-404.

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