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Online Supplementary Material to:

Are the rich more selfish than the poor,

or do they just have more money?

A natural field experiment

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A Details on the selection procedure of poor and rich households

To protect privacy, no institution was willing to share a list with addresses and incomes of the richest and poorest households of the city where the study was conducted. Only after conducting all of our field treatments, CBS Netherlands provided this data for each household. This way, CBS Netherlands could encrypt the data, guaranteeing privacy and anonymity of all subjects involved. We selected rich and poor households based on a measure of the value of their houses. This appendix contains the details of that selection procedures.

A.1 Selection procedure of the poor

All treatments were conducted in a medium-sized city in the Netherlands. This city has several social housing corporations. One of these is founded explicitly to rent out apartments to the poorest people in the city. This social housing corporation has a website that contains advertisements of apartments that are available for rent. We selected apartments from these buildings, but not the apartments that were for rent. The social housing corporation was generous enough to hand us a list with addresses of their cheapest rental apartments. We also selected 152 households from this list.

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When selecting households, we faced some constraints. First, most apartment buildings have four stories and share entrances with eight apartments. We restrict misdeliveries to three mail boxes per entrance to minimize communication between households. We randomly selected 159 households sharing an entrance with two other apartments in the same building, and 66 households that do not share the entrance, in our sample. We find no economically or statistically significant differences across these two groups. Households sharing entrances returned 38.4% of misdelivered envelopes while household not sharing entrances in our sample returned 33.3% (Fisher exact test, $p = 0.81$). This is in line with information we obtained from an official from the social housing corporation, that residents have little contact with each other.

Second, not all households of the poor have a Dutch nationality, while we estimated that close to one hundred percent of the households of the rich are Dutch. Ethnicity of the sender and receiver can influence pro-social behavior (Henrich et al., 2004; Herrmann et al., 2008; Buchan et al., 2006; Charness et al., 2007). Therefore, we took pictures of all family name signs prior to the randomization procedure. Then, we filtered out as many non-Dutch households of the poor to keep ethnicity constant. Using data from CBS Netherlands, we can control for the effect of any remaining non-Dutch households.

A.2 Selection procedure of the rich

Selecting upper-class households is done in the following steps. First, we consult Funda.nl, a website in the Netherlands that advertises houses for sale. We selected houses with a sale price of at least €750,000. All houses in the street of an advertised house are candidates to be included in our database, but houses for sale are excluded. Second, we consult Postcode.nl. This is a website with information on a house's postal code, house number, and surface. We include houses not for sale with comparable surface as those that are for sale.

Third, to minimize effects of communication between subjects, we selected houses with a reasonable distance to other houses in our sample. A total of 100 houses have no neighboring house that is selected for any of the core treatments. The other 80 houses do have at least one neighbor that is a subject in one of the core treatments. However, almost all of these houses are villas with a large surface and driveways that are far removed from the driveway of the neighbor. Differences in return rates between houses with a neighbor (76.3%), or without neighbour (85.0%) are insignificant (Fisher exact test, $p = 0.18$)

B Description of the data on household level background characteristics

CBS Netherlands provides administrative data on all citizens of the Netherlands. Data are available from various sources, and they can be merged on an individual or household level. To guarantee anonymity, CBS Netherlands encrypts each person and household by means of a code called RIN-address and RIN-person. CBS Netherlands has encrypted the addresses in the database that we provided them, by adding the variable RIN-address. Then, we merged different databases of CBS Netherlands by using the RIN-address variable.

Table 1 gives an overview of the different databases that we used. We have access to the actual data for 2013.

Table 1 Overview of the databases used from CBS Netherlands.

Database	Version	Variables used
Marital Status administration	2013, actual	RIN-address
'GBA Burgerlijkestaatbus'		RIN-person
Integral Household Income	2013, actual	Disposable household income
'Integraal Huishoudens Inkomen'		Household size
Integral Wealth Database	2013, actual	Household Wealth
'Integraal Vermogensbestand'		
Municipality Persons Administration	2013, actual	Age
'GBApersoonstab'		Country of birth
Social Economic Category	2013, actual	Person receives:
'SECM'		Pension
		Unemployment benefits
		Social welfare
		Social security
		Disability insurance

CBS Netherlands has the following definitions of the variables that are not self-explanatory.

<u>Income definitions:</u>

Primary income consists of yearly income from labor (gross wages, salary, tantieme, compensation for labor not from employment), income from own company, and income from equity (interest, dividend, exploitation of real-estate).

Gross income consists of Primary income + received transfers (i.e. unemployment benefits, pension, etc.).

Disposable income consists of Gross income − income transfers (e.g. alimony) − premium income insurance − disability/illness insurance − tax on income and wealth.

<u>Wealth definitions:</u>

Wealth consists of the possessions − debts

Possessions consist of bank balance, securities, value of own house, 'other' real estate, 'other' possessions (i.e. cash, rented real estate, venture capital)

Debts consist of the mortgage on own house, 'other' debts to finance consumption goods, shares/bonds, second house.

C Some robustness checks on the statistical procedures reported in the main text

This appendix shows the robustness of various regressions of the main text by implementing linear probability models instead of Probit models.

C.1 The Probit model estimates of Table 3

Section 4 show regression analyses using a linear probability model. The main advantage is that the interpretation of the coefficients is straightforward. Nevertheless, it is possible that the model forecasts probabilities that are greater than one or smaller than zero. In this section we re-estimate the models presented in section 4 by using a Probit model. As can be seen, all the models yield qualitatively very similar results. Even the magnitudes of the coefficients are very close to the ones reported in the main paper.

Table 2 OLS regression analysis. The dependent variable has a value of 1 when a household returns the envelope. Standard errors are shown in parentheses. In the last column, standard errors are clustered at the street level. ***/**/*: significant at the 0.01 / 0.05 / 0.10 level.

	(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)
Rich	0.43***	0.43***	0.38***	0.40***	0.31***	0.34***	0.34***
	(0.05)	(0.05)	(0.07)	(0.07)	(0.08)	(0.09)	(0.08)
Cash		−0.14***	−0.20***	−0.20***	−0.19***	−0.19***	−0.19***
		(0.05)	(0.07)	(0.07)	(0.07)	(0.07)	(0.09)
Rich × Cash			0.11	0.11	0.1	0.1	0.1
			(0.09)	(0.09)	(0.09)	(0.09)	(0.1)
Dist. Joost				−0.01		−0.01	−0.01
				(0.02)		(0.02)	(0.01)
Dist. Mailbox				−0.15		−0.15	−0.15**
				(0.10)		(0.10)	(0.06)
Density				−0.04		−0.02	−0.02
				(0.19)		(0.19)	(0.14)
HH Foreign					−0.10	−0.10	−0.10
					(0.09)	(0.09)	(0.09)
Benefits					−0.02	−0.02	−0.02
					(0.06)	(0.06)	(0.06)
Pension					−0.03	−0.03	−0.03
					(0.08)	(0.08)	(0.08)
HH Size					0.01	0.01	0.01
					(0.02)	(0.02)	(0.03)
HH Age					0.00	0.00	0.00
					(0.00)	(0.00)	(0.00)
Constant	0.38***	0.45***	0.48***	0.57***	0.36***	0.45***	0.45***
	(0.03)	(0.04)	(0.05)	(0.10)	(0.12)	(0.16)	(0.12)
N	360	360	360	360	360	360	360
R^2	0.19	0.22	0.22	0.22	0.23	0.23	0.23

C.2 Expanding the analysis of preferences to include €5 and €20 envelopes separately.

Rather than considering the single equation for BTC and another single equation for Euros, here we present the results for analysis that treats envelopes conataining either BTCs or cash equal to €5 and €20 separately. We now define α_5 and α_{20} as the altruism values for returning envelopes worth 5 and 20 euros, respectively. For the BTC conditions, we now have two equations in our model. Subjects will return envelopes if

$$\alpha_k - p_b(w+1) = \alpha_k - p_b - p_b w > 0 \quad \text{for} \quad w = 0, 1, 2, 3 \quad \text{and} \quad k = 5, 20. \tag{1}$$

These conditions are reflected in the probit regression equations

$$\beta_{b5} + \beta_{b,w} w > 0 \tag{2}$$

$$\beta_{b20} + \beta_{b,w} w > 0 \tag{3}$$

Where from (2) $\beta_{b5} = \alpha_5 - p_b$ and $\beta_{b,w} = -p_b$. Thus we can calculate α_5 as $\alpha_5 = \beta_{b5} + p_b = \beta_b - \beta_{b,w}$. A similar expression follows from (3)

Likewise, for the Euros conditions we also add n_5 and n_{20} to reflect potentially different net values of cash. This gives us the model statement

$$\alpha_k - n_k - p_€ - p_€ w > 0, \quad k = 5, 20 \tag{4}$$

This then yields a regression equations

$$\beta_{€5} + \beta_{€,w} w > 0 \tag{5}$$

$$\beta_{€20} + \beta_{€,w} w > 0 \tag{6}$$

Comparing equations (4) to (5), we see that $\beta_{€5} = \alpha_5 - n_5 - p_{€,w}$ and $\beta_{€5,w} = -p_€$. We can use the value of α_5 calculated from the BTC5 equation to identify n_5 as $n_5 = \alpha_5 + \beta_{€,w} - \beta_{€5}$. A similar derivation applies to (6).

The results of the probit regressions are given in Table 3. As can be seen, the results are quite similar to Table 4 in the main paper.

Table 4 provides the estimates of the model parameters. Again, the results are quite similar to those reported in Table 5 of the main paper. Altruism α_5 and α_{20} are quite similar among the poor and the rich.

Table 3 Probit estimates of return rates in the experiment.

Variable	(1) Rich	(2) Poor	(3) Difference	(4) Rich	(5) Poor	(6) Difference
BTC5	1.111***	0.028	1.083***	0.975***	0.496**	0.479
	(0.223)	(0.218)	(0.307)	(0.259)	(0.248)	(0.354)
BTC20	1.013***	−0.140	1.153***	0.861***	0.316	0.545*
	(0.194)	(0.202)	(0.276)	(0.209)	(0.260)	(0.328)
E5	0.924***	−0.431**	1.355***	1.061***	−0.442***	1.503***
	(0.217)	(0.171)	(0.273)	(0.195)	(0.166)	(0.253)
E20	0.557***	−0.765***	1.321***	0.695***	−0.776***	1.471***
	(0.164)	(0.189)	(0.247)	(0.170)	(0.283)	(0.324)
$w\times$(BTC)				0.147	−0.448***	0.596***
				(0.114)	(0.120)	(0.163)
$w\times$(€)				−0.124	0.010	−0.135
				(0.112)	(0.174)	(0.203)
N	180	180	360	180	180	360

The dependent variable has a value of 1 when a household returns the envelope.

Standard errors are clustered at the street level.

***, **, *: significant at the $0.01, 0.05, 0.10$ levels, respectively.

C.3 The difference-in-difference estimate of the Private Incentive treatment

In section 4 we calculate the difference-in-difference of the return of non-cash envelopes and envelopes in the Private Incentive treatment, between the rich and the poor. Statistical support for the claim that this difference-in-difference is statistically significant comes from a linear probability model and Probit model. Both models are presented in Table 5 below. The dependent variable is a dummy with value one if an envelope is returned. As independent variables we use 'Rich' that has a value of one if a household belongs to the rich, as well as the dummy variable 'PI' that has a value of one for households that participated in the Private Incentive treatment. The interaction term 'Rich × PI' is the difference-in-difference estimate. The two tables show that the difference in return rates within the Private Incentive treatment is not significantly different.

Table 4 Parameter values for the simple behavioral model set out in expressions (2), (3), (5), and (6).

	Variable	Formula	Rich	Poor	Difference
Altruism €5:	α_5	$\beta_{b5} - \beta_{b,w}$	0.828**	0.944***	−0.116
			(0.334)	(0.331)	(0.464)
Altruism €20:	α_{20}	$\beta_{b20} - \beta_{b,w}$	0.714***	0.764**	−0.050
			(0.261)	(0.334)	(0.417)
Net utility from Keeping €5:	n_5	$\beta_{b5} - \beta_{b,w} + \beta_{\text{€},w} - \beta_{\text{€}5}$	−0.357	1.396***	−1.753***
			(0.454)	(0.269)	(0.535)
Net utility from Keeping €20:	n_{20}	$\beta_{b20} - \beta_{b,w} + \beta_{\text{€},w} - \beta_{\text{€}20}$	−0.105	1.550***	−1.655**
			(0.391)	(0.534)	(0.715)
Pressure:	p_{b}	$-\beta_{b,w}$	−0.147	0.448***	−0.595***
			(0.114)	(0.120)	(0.163)
	p_{Euro}	$-\beta_{\text{€},w}$	0.124	−0.010	0.135
			(0.114)	(0.174)	(0.203)

Standard errors are in parentheses.

***, **, *: significant at the 0.01, 0.05, 0.10 levels, respectively.

Table 5 The dependent variable has a value of 1 when a household returns the envelope. The estimates in the table represent marginal effects, and standard errors are shown in parentheses. ***/**: significant at the 0.01 / 0.05 level.

	Linear Probability model	Probit model
Rich	0.38***	0.38***
	(0.07)	(0.07)
PI	0.12	0.11
	(0.08)	(0.08)
Rich×PI	−0.29**	−0.33***
	(0.12)	(0.13)
Constant	0.48***	-
	(0.05)	
N	270	270
R^2	0.11	
Pseudo R^2		0.09

D Return time of envelopes

This section presents, conditional on returning an envelope, how long the households took to do so.

Table 6 Days it takes a household to return an envelope in each treatment.

	Rich	Poor	Rich	Poor
	Average		Median	
BTC, €5	5.05‡	7.74	3	4
BTC, €20	5.05	13.25	4	5
€5	5.33	7.13	2	3
€20	5.41	17.11*	3	5.5
Average	5.30†	9.69†	3	4

‡Outlier omitted: 449 days

*Outlier omitted: 190 days

Mann-Whitney test, $N_1 = 146, N_2 = 68, p = 0.08$.

E   Questionnaire on the mailing habits of the poor

This appendix contains the translated English text of the questionnaire we present in section 6.1. We approached males and females on a street in the center of the city. Possible candidates were asked whether were interested to participate in a short survey. Then, they were asked if they rented their house from a social housing corporation. If not, then they were not interviewed. 89 citizens indicated not to be interested (before we knew if they qualified). 128 citizens were interested in conducting the questionnaire, but did not qualify. All 45 interviewed subjects answered all questions. The responses are given in parentheses in the questionnaire.

The questionnaire

Hello. We are a team of researchers from the Universities of California, New York and Rotterdam. We are conducting a survey regarding the use of postal services in different countries. We would be grateful if you could spent a couple of minutes answering a few questions.

1. How many letters do you usually send each week via post?

	More than 10 (2.2%)		Less than 5 (40.4%)
	Between 5 and 10 (4.4%)		I almost never send mail via post (53%)

2. How many letters do you usually receive each week in the post (excluding advertisements)?

	More than 10 (6.7%)		Less than 5 (62.2%)
	Between 5 and 10 (31.1%)		I do not have a mailbox

3. How often do you check your letterbox usually?

	Every day (75.5%)		Twice a week (4.4%)
	Once a week (2.2%)		Less than once a week (2.2%)

4. Has the postal service ever misdelivered a letter in your letterbox that was meant to be delivered to a different address? YES/NO (100% yes)

5. If such a misdelivered letter were put in your letterbox, can you tell me some ways you can use so that the letter is properly delivered to the intended recipient? (Check all that they state.)

a) Drop it in a street mail box (88.9%)
b) Take it to the post office (24.4%)
c) Give it to a postal carrier (13.3%)
d) Hand deliver it myself (66.67%)
e) Put it in a new envelope and mail it (0%)
f) It can't be done (0%)
g) I don't know (0%).
h) Other: (31.1% of subjects came up with at least one alternative)

6. Suppose you were to simply drop the misdelivered envelope into a mailbox. What do you think the postal service will do with the envelope? (check all that they say)

a) Deliver it to the intended recipient (1 answer)
b) Return to the sender
c) Throw it away (1 answer)
d) I don't know (2 answers)

7. Can you tell me where the nearest mailbox is from your home? YES/NO (91%)
If YES, about how long would it take you to walk there?_____ minutes (3.2 minutes)

F   Details on the Private Incentive treatments

This section contains details on the Private Incentive treatment, as well as the material that we used. Subjects were selected using the same selection procedure as described in section 3.2. Subjects received an official Erasmus University Rotterdam a4-sized opaque envelope in their mailbox. The envelope had a window through which it could be seen that the letter was addressed to the inhabitant of the house. A note of €5 could be seen through this window as well, to give subjects an incentive to open the envelope and read its contents.

The envelope contained a set of instructions, as well as a small stamped envelope with a card. The instructions explained that the subject was selected randomly for participation in a scientific study of Erasmus University Rotterdam, and that the study aimed to investigate the use of the postal services in various neighborhoods in the Netherlands. Subjects were instructed to mail the attached stamped envelope to the University's mail address. If the card was received within four weeks time, then €20 would be paid. Participation numbers were used in the study to ensure anonymity.

In the instruction letter, mention was made of the principal investigator, along with his contact information and a website that contained more details on the study (see below). The Private Incentive treatment was conducted on one single day in October 2014. To test for noise of the mail company, we sent seventeen envelopes to the university's mail address. These envelopes were sent from the neighborhoods the subjects live in. As we expected, all of these envelopes arrived the day after sending them out. We conclude that our data are free of any mistakes from the mail company.

F.1 Instructions (translated from Dutch)

To the inhabitants of XXXX YY ZZZZ

Rotterdam, 14 September 2014

Subject: Earn €20 by participating in a scientific study

Dear sir/madam,

You have been randomly selected for participation in a **scientific study** of **Erasmus University Rotterdam**. We are studying the use of the Dutch postal services in different neighborhoods across the Netherlands. To show you that this is a serious study and compensate you for your time, we have **enclosed €5**.

Will I get paid for my participation? Yes you will! In addition, to the enclosed €5 which is yours to keep, if you complete the study, we will send you an **additional €20 in cash**.

What do I have to do? It is really easy to complete this study. All you need to do is put the card in the enclosed envelope, and then **mail the envelope**. If you complete the study by **October 3**, we will send you the additional €20, which you should receive by October 17. If you choose not to mail the envelope, then you will not complete the study, and you will not receive the €20 completion payment. You may naturally keep the enclosed €5 whether you complete the study or not.

Will my personal information be revealed? No, it will not. You will notice that the enclosed card does not have your name on it, but only a participant number. This participant number links the card to your address, so that we can send your €20 for completing the study to your address. We do not record your name. Your participation therefore will be anonymous.

Thank you very much for participating in this research.

Best regards,

Prof. J.T.R. Stoop

Flyer that accompanied the instructions

More information about this study

This study is conducted by Erasmus University Rotterdam, led by Prof J.T.R. Stoop. You can learn about Prof. Stoop on the Internet at

http://people.few.eur.nl/stoop/[1]

After March 31, 2015 you can or learn more about this study at

http://people.few.eur.nl/stoop/postalstudy.htm

If you have questions, please contact:

Prof. J.T.R. Stoop, Dutch Postal Study
Department of Applied Economics
Erasmus School of Economics, PO Box 1738
3000 DR Rotterdam, the Netherlands
Tel.: +31 (0)10 408 27 08
Email: stoop@ese.eur.nl

Thank you very much for participating in this research.

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[1]It's important to note that, at the time of running the PI treatment, there was no information on Prof. Stoop's website that could alert respondents as to the purpose of the survey or indeed the experiment.

F.2 Accompanying text on the internet website (during data gathering process)

THE ERASMUS UNIVERSITY POSTAL STUDY

Lead investigator:

Prof. J.T.R. Stoop
Department of Applied Economics
Erasmus School of Economics, PO Box 1738
3000 DR Rotterdam, the Netherlands
Tel.: +31 (0)10 408 27 08
Email: stoop@ese.eur.nl

Purpose of the Research:

The Erasmus University Rotterdam Postal Study (EURPS) is examining how people in different parts of the Netherlands use the postal service and send letters.

Funding for this Research:

This study is supported by grants from the Erasmus School of Economics and the Netherlands organisation for Scientific Research.

Privacy Statement:

The privacy of participants in this research is assured. All addresses used in this study are randomly selected. As is required by research ethics, participants' names are never known to the EURPS researchers, and after the data collection EURPS will destroy any record of the addresses used. There will be no information in our data what will allow us to identify any of the participants. In addition, our report will not mention any specific parts of Netherlands. The data will not be shared with anyone outside of the research group, and will be used only for scientific purposes.

Important dates:

October 1, 2013: Data Collection Begins.
December 31, 2014: Data Collection Ends.
March 31, 2015: Report on the Results of the Data Collection will be publicly available and posted on this Web Site.

Please check back after March 31, 2015 for more details about this study.

Thank you very much.

F.3 Accompanying text on the internet website (after data gathering process)

THE ERASMUS UNIVERSITY POSTAL STUDY

Lead investigator:

Prof. J.T.R. Stoop
Department of Applied Economics
Erasmus School of Economics, PO Box 1738
3000 DR Rotterdam, the Netherlands
Tel.: +31 (0)10 408 27 08
Email: stoop@ese.eur.nl

Purpose of the Research:

We are studying how people in different parts of the Netherlands use the postal service. We have randomly selected households to participate in the study. For their effort, €5 was included. The task required subjects to send a card that was given to them. If the card was received, then €20 was returned in cash. The results are interesting to us, because they shed light on the level of compensation needed for people to take the effort to mail a letter.

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