Online Appendix

Intertemporal Altruism

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A Additional tables and figures

Table A.1: Summary statistics

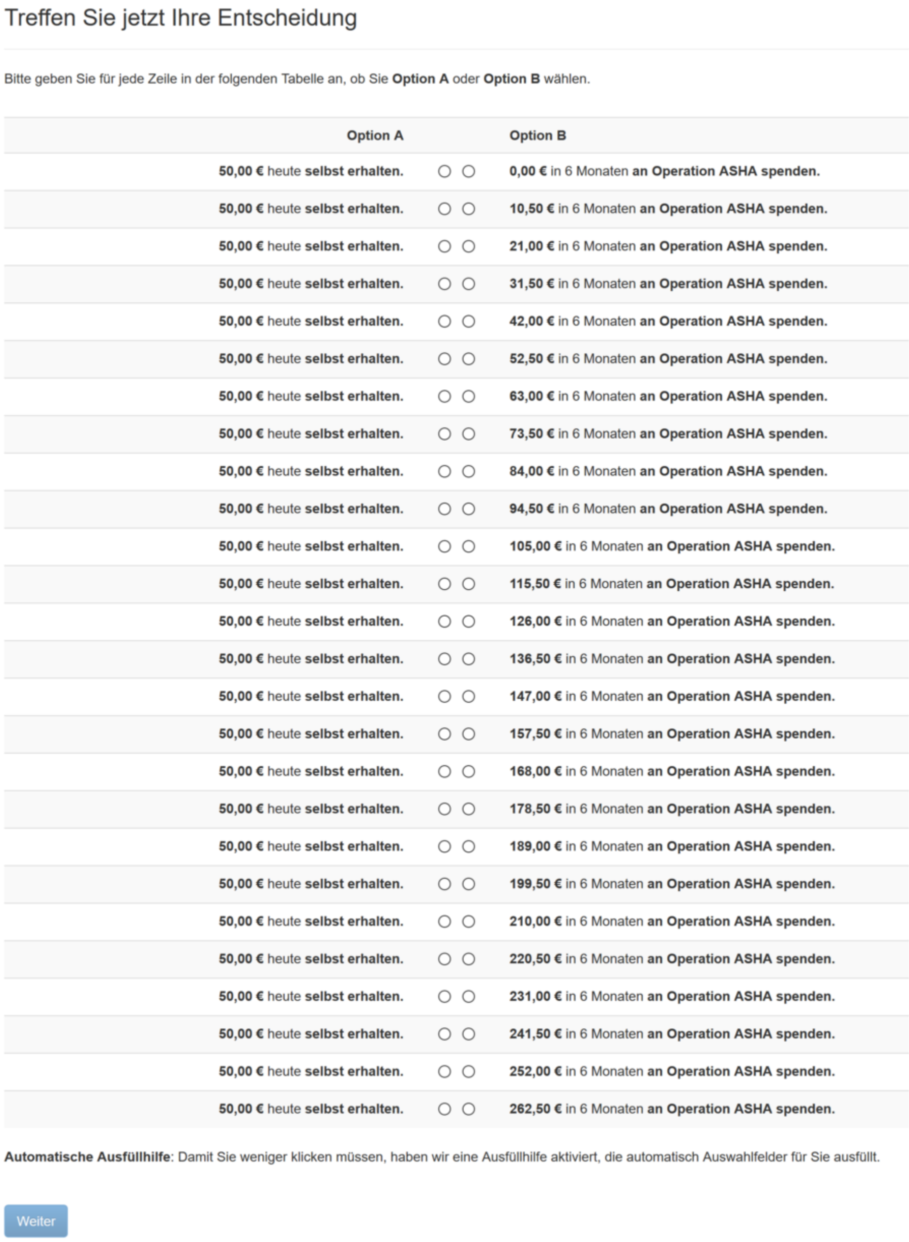
	Observations	Mean	Std. dev.	Min	25th	Median	75th	Max
Age	244	25	5.5	18	22	23	26	61
Female	244	.57	.5	0	0	1	1	1
Household income	244	1,446	1,133	0	650	1,000	2,000	4,000
Savings	244	.54	.5	0	0	1	1	1
Education (years)	244	16	3.5	3	15	16	18	29
Student	244	.91	.29	0	1	1	1	1
Political orientation	244	2.3	1.3	0	1	2	3	6
Siblings	244	1.5	1.2	0	1	1	2	7
Raven score	244	6.1	1.7	0	5	6	7	10

Note: This table shows summary statistics for the full sample. "Household income" is the self-reported total monthly household income after taxes and transfers (in euros). "Savings" is a binary variable taking the value of 1 if the subject reported that she is able to save money each month. "Education (years)" are the subject's total years of education starting from primary school. "Student" is a binary variable taking value of 1 if the subject is enrolled at a university degree program. "Political orientation" is measured on a scale from 1 ("rather left") to 7 ("rather right"). "Siblings" are the total number of siblings. "Raven score" is the number of correctly solved Raven matrices out of ten.

Table A.2: Regression analysis of intertemporal choices without clustered standard errors

	Univariate discounting			Multivariate discounting			Exchange rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
charity-Euro	-0.005		0.001	-1.557		-1.079	
	(0.006)		(0.007)	(0.064)		(0.082)	
1 month							-0.042
							(0.044)
3 months		-0.072	-0.070		0.219	0.315	-0.084
		(0.005)	(0.007)		(0.073)	(0.070)	(0.039)
6 months		-0.138	-0.132		0.524	0.785	-0.137
		(0.006)	(0.008)		(0.085)	(0.096)	(0.041)
12 months		-0.205	-0.199		1.083	1.682	-0.195
		(0.008)	(0.011)		(0.113)	(0.153)	(0.049)
3 months × charity-Euro			-0.003			-0.192	
			(0.010)			(0.122)	
6 months × charity-Euro			-0.011			-0.523	
			(0.012)			(0.141)	
12 months × charity-Euro			-0.011			-1.199	
			(0.015)			(0.190)	
Constant	0.843	0.944	0.943	2.546	1.311	1.850	2.070
	(0.004)	(0.004)	(0.005)	(0.051)	(0.048)	(0.043)	(0.034)
N	1952	1952	1952	1952	1952	1952	1220
R^2	0.386	0.620	0.621	0.396	0.245	0.471	0.921
Subject FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subjects	244	244	244	244	244	244	244

Note: This table shows pooled OLS regression estimates where the unit of observation are subject-choices. In columns 1–3, we include all choices from the two univariate discounting stages (*UD-SELF*, *UD-CHARITY*). The dependent variable is the net present value $y_{i,\tau,d}$ of the delayed payment, where i denotes the subject, τ the delay in months, and d is the numéraire of the payments (self-euros or charity-euros). Columns 4–6 include all choices from the two multivariate discounting stages (*MD-SELF*, *MD-CHARITY*). The dependent variable is the implied conversion factor $y_{i,\tau,d}$ that makes subjects indifferent between a payment of 50 euros today (self-euros or charity-euros) and a delayed payment of $50 \cdot y_{i,\tau,d}$ of type d (self-euros or charity-euros). In column 7, we include all choices from the exchange rate stage ER. The dependent variable is the implied (forward) exchange rate $y_{i,\tau}$ at different delays τ. "Charity-euro" is a binary indicator variable taking the value of 1 if the numéraire of the earlier payment are charity-euros. "τ month(s)" is a binary indicator variable taking the value of 1 if the later payment is received with a delay of τ month(s), where $\tau = 1$ month is the omitted category in columns 1–6 and "0 months" is the omitted category in column 7. All regressions include subject fixed effects. Robust standard errors are shown in parentheses.



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Bitte geben Sie für jede Zeile in der folgenden Tabelle an, ob Sie **Option A** oder **Option B** wählen.

Option A			Option B
50,00 € heute **selbst erhalten.**	○	○	**0,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**10,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**21,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**31,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**42,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**52,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**63,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**73,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**84,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**94,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**105,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**115,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**126,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**136,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**147,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**157,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**168,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**178,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**189,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**199,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**210,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**220,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**231,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**241,50 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**252,00 €** in 6 Monaten **an Operation ASHA spenden.**
50,00 € heute **selbst erhalten.**	○	○	**262,50 €** in 6 Monaten **an Operation ASHA spenden.**

Automatische Ausfüllhilfe: Damit Sie weniger klicken müssen, haben wir eine Ausfüllhilfe aktiviert, die automatisch Auswahlfelder für Sie ausfüllt.

Weiter

Figure A.1: This is an example of the decision screen as seen by subjects in stage *MD – SELF* of the intertemporal choice part of the experiment. The original instructions in German are shown. In each row, subjects indicate whether they prefer option A or option B by selecting the appropriate circle in each row. Option A on the left-hand side offers 50 self-euros today. Option B on the right-hand side offers increasing amounts of charity-euros from zero to 262.50 euros. The amount will be wired to *Operation ASHA* in six months. All price lists in the intertemporal choice part of our experiment are presented in this format. We vary only (i) the amount offered in option B, (ii) the timing of payments (both for option A and option B), and (iii) whether payments are denoted in self-euros or charity-euros. The decision screens are otherwise identical.

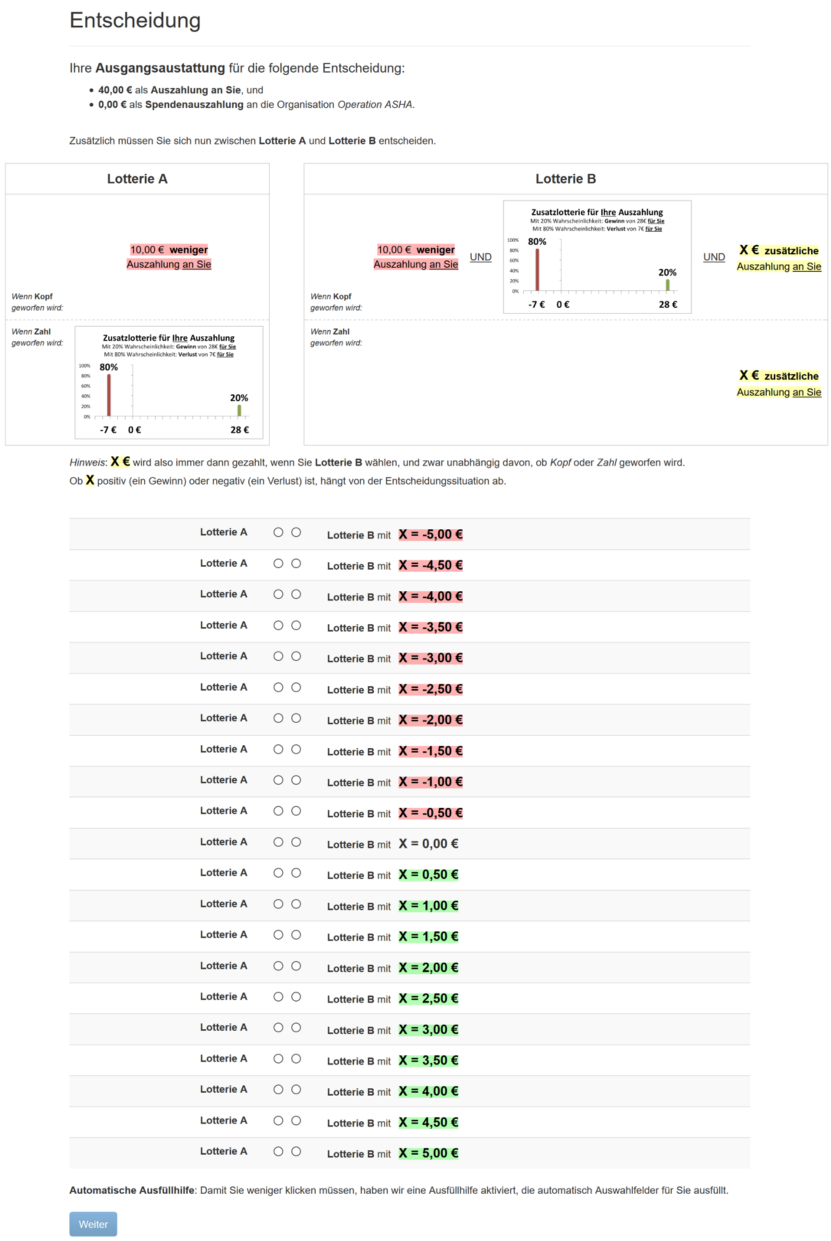
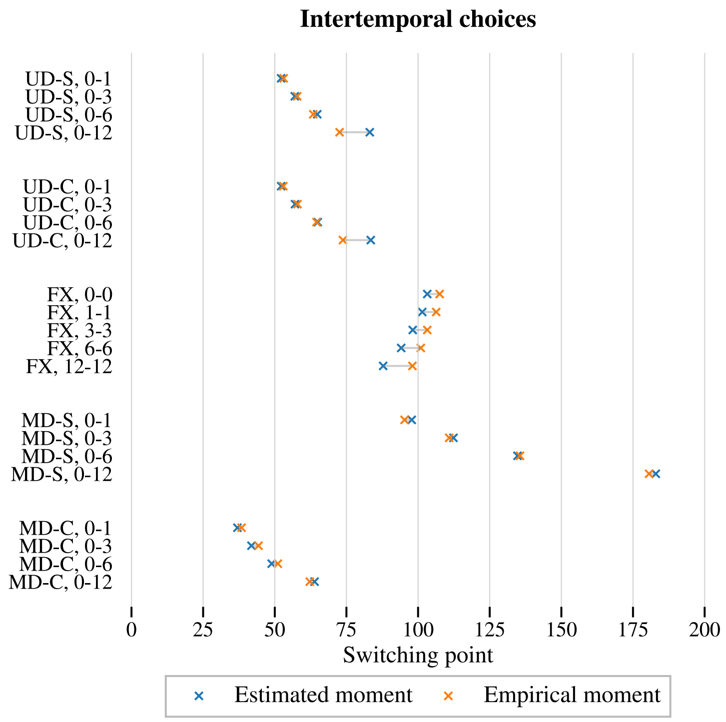


Figure A.2: This is an example of the decision screen as seen by subjects in stage *RA – SELF* of the risky choice part of the experiment. The original instructions in German are shown. At the top of the screen, subjects are informed about their initial endowment **e** of 40 self-euros and zero charity-euros. Next, subjects see two boxes that contain a visual representation of lottery A and lottery B. In each box, the upper part explains the consequences when the simulated coin toss yields head, whereas the lower part explains the consequences if it yields tails. In the lower part of the screen, subjects indicate whether they prefer lottery A or lottery B by selecting the appropriate circle in each row. The right-hand side shows the compensation amounts **m** that are to be added to lottery B. They range from -5.00 self-euros to 5.00 self-euros. All decisions in the risky choice part of our experiment are presented in this format. We vary only (i) the lotteries and (ii) the range of the compensation amounts. The decision screens are otherwise identical.



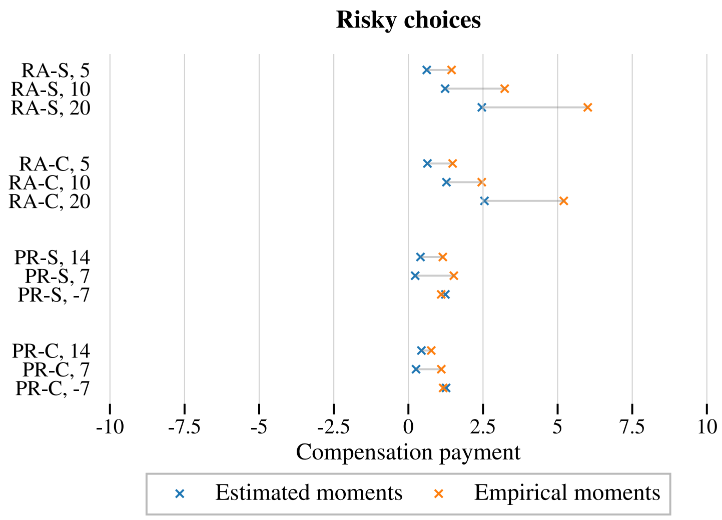


Figure A.3: This figure plots the empirical and the estimated moments for our estimation sample (N = 200). The moments are the average switching point in each of our 33 price lists. The upper panel shows moments for intertemporal choices, while the lower panel reports moments for risky choices from part B of the experiment. For intertemporal choices, labels on the vertical axis groups task by their stage (*UD-SELF*, *UD-CHARITY*, *ER*, *MD-SELF*, *MD-CHARITY*) and indicate the delay of the sooner and the later payment. For example, “6-6” means that both payments were made 6 months after the experiment. For risky choices, we indicate the size of the deduction R_2 (see Table B.2 for more details).

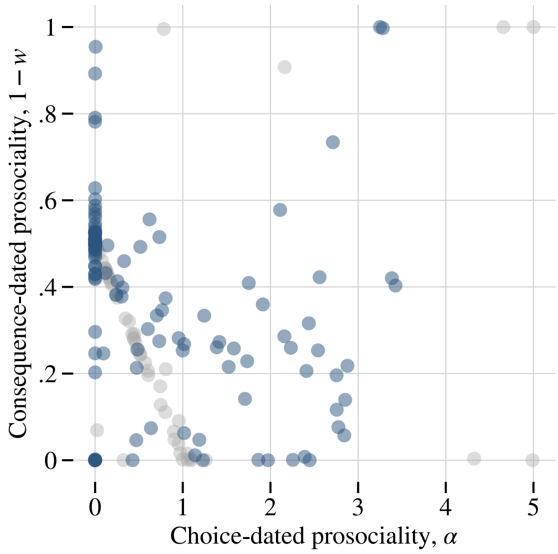


Figure A.4: This figure shows the joint distribution (N = 200) of the choice-dated prosociality parameter, α, and the consequence-dated prosociality parameter, $1-w$. The circles in dark gray indicate the subsample of subjects with a degree of risk aversion that is outside the range of the structural model, i.e. they have a coefficient of relative risk aversion greater than 0.90. The Spearman correlation is -0.417 in the full sample and -0.447 in the subsample.

B Experimental design

This section contains additional details about the experimental design outlined in Section 3.

B.1 Part A – Intertemporal choice

Table B.1: Overview of the multiple price lists for intertemporal choices

Stage	Recipient		Delays		Payment: t_0	Payment: t_1				Share choosing options
	t_0	t_1	t_0	t_1		Min	Max	Increment	Options	close to the midpoint
UD-S	self	self	0	1	50	50	56.25	0.21	31	2.9%
UD-S	self	self	0	3	50	50	68.75	0.62	31	10.7%
UD-S	self	self	0	6	50	50	87.50	1.25	31	7.4%
UD-S	self	self	0	12	50	50	125.00	2.50	31	3.7%
UD-C	charity	charity	0	1	50	50	56.25	0.21	31	4.9%
UD-C	charity	charity	0	3	50	50	68.75	0.62	31	10.7%
UD-C	charity	charity	0	6	50	50	87.50	1.25	31	5.3%
UD-C	charity	charity	0	12	50	50	125.00	2.50	31	4.1%
ER	self	charity	0	0	50	0	200.00	10.00	21	10.2%
ER	self	charity	1	1	50	0	200.00	10.00	21	10.7%
ER	self	charity	3	3	50	0	200.00	10.00	21	11.5%
ER	self	charity	6	6	50	0	200.00	10.00	21	14.3%
ER	self	charity	12	12	50	0	200.00	8.00	21	14.8%
MD-S	self	charity	0	1	50	0	168.75	6.75	26	3.7%
MD-S	self	charity	0	3	50	0	206.25	8.25	26	6.6%
MD-S	self	charity	0	6	50	0	262.50	10.50	26	3.7%
MD-S	self	charity	0	12	50	0	375.00	15.00	26	3.3%
MD-C	charity	self	0	1	50	0	56.25	2.25	26	6.1%
MD-C	charity	self	0	3	50	0	68.75	2.75	26	4.5%
MD-C	charity	self	0	6	50	0	87.50	3.50	26	3.7%
MD-C	charity	self	0	12	50	0	125.00	5.00	26	7.0%

Note: This table provides details about the Multiple Price Lists used to elicit discounting behavior in Part A ("Intertemporal choices") of the experiment. The earlier payment date is denoted by t_0, while the later payment date is denoted by t_1. Participants could choose between 50 euros to the t_0-recipient with a delay of t_0 months, or varying amounts paid to the t_1-recipient in t_1 months. Note that "immediate" payments arrived only with a delay of 3 days in the subjects' bank account. *Min* is the lowest value of the payment in t_1, while *Max* is the largest value that a subject could receive in t_1. *Increment* describes the step size of the multiple price list (in euros). *Option* lists the number of different options for t_1 payments. *Share choosing options close to the midpoint* is the share of respondents with an indifference point that differs from the midpoint of the multiple price list by at most 5% of the overall range of the price list.

B.2 Part B – Risk apportionment

We adopt the recently popularized experimental paradigm of risk apportionment, which allows for non-parametric testing conditions on the nature of the utility function. Second- and third-order risk aversion (i.e. prudence) are typically defined in terms of specific conditions on the (second and third) derivatives of the utility function under expected utility maximization. Eeckhoudt and Schlesinger (2006) provide an alternative definition based on observable choices in risk apportionment tasks. Risk apportioning has the desirable feature that the measurement remains valid even if expected utility theory fails (Ebert and van de Kuilen, 2015; Starmer, 2000). At the same time, data from risk apportionment choices allow us to calibrate specific utility specifications under additional parametric assumptions.

We measured univariate risk aversion individually for self-euros and for charity-euros (stages *RA – SELF* and *RA – CHARITY*, respectively), univariate prudence (stages *PR – SELF* and *PR – CHARITY*), and multivariate risk aversion (stage *X – RA*). The latter stage is crucial as it delivers a non-parametric estimate of the cross-derivative with respect to payments in self-euros and charity-euros, which determines whether additive non-separability of the utility function is a suitable assumption.

In every risk apportionment task, subjects receive some endowment $\mathbf{e} = (x, y)$ of attributes X and Y and then make a decision between two lotteries. Each of these lotteries has two equally likely outcomes. Assume further that there are two undesirable fixed amounts R_1 and R_2 with $R_i \preceq (0,0)$. Accordingly, R_1 is a fixed univariate "reduction" in either X or Y, but not in both dimensions at the same time.[1] A preference for risk apportionment is the desire to disaggregate these unavoidable fixed reductions in wealth, R_1 and R_2, across two equiprobable states of the world, as depicted in Figure B.1.

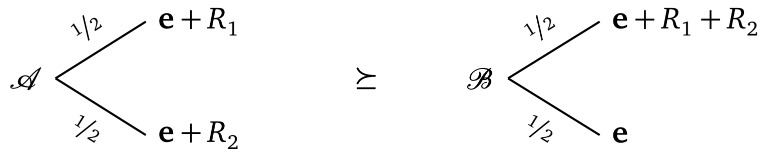


Figure B.1: Preference for risk apportionment (cf. Ebert and van de Kuilen (2015))

[1]The same holds for R_2, but R_1 and R_2 do not necessarily affect the same attribute.

The different stages in Part B vary depending on whether each attribute (X and Y) corresponds to self-euros or charity-euros. Concretely, we present subjects with choices between two lotteries as summarized in Figure B.1. For conceptual consistency and to avoid confusing subjects, we employ the same price list methodology as for intertemporal choices in Part A.[2] On each decision screen, subjects make binary choices between a fixed lottery $\mathscr{A}$ and a fixed lottery $\mathscr{B}$, where an additional, state-independent compensation payment m is added to lottery $\mathscr{B}$. This compensation payment m gradually increases across the rows of the choice list. The smallest amount for which the individual prefers lottery $\mathscr{B}$ indicates the minimal compensation demanded for heaving both undesirable reductions in wealth clustered in a single state. An example choice screen is depicted in Appendix Figure A.2.

Table B.2: Overview of risk apportionment choices

Stage	**Endowment**		**R_1**		**R_2**		**Expected value**	
	Self	Charity	Self	Charity	Self	Charity	Self	Charity
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
RA – SELF	25		-10		-5		17.5	
	50		-20		-10		35	
	100		-40		-20		70	
PR – SELF	40		-10		(14, 0.5; -14, 0.5)		35	
	40		-10		(7, 0.8; -28, 0.2)		35	
	40		-10		(-7, 0.8; 28, 0.2)		35	
RA – CHARITY		25		-10		-5		17.5
		50		-20		-10		35
		100		-40		-20		70
PR – CHARITY		40		-10		(14, 0.5; -14, 0.5)		35
		40		-10		(7, 0.8; -28, 0.2)		35
		40		-10		(-7, 0.8; 28, 0.2)		35
X – RA	25	25	-10			-10	20	20
	50	50	-20			-20	40	40
	100	100	-40			-40	80	80

Note: All values are displayed in euros. Columns labeled “Self” indicate payments to the subject and columns labeled “Charity” indicate payments to the charity. If R_1 or R_2 is a non-degenerate lottery, it is given as $(x_1, p_1;\ x_2, p_2)$, where x_i indicates the amount and p_i the probability of receiving it. Columns 8 and 9 show the expected payment to the subject and the expected payment to the charity, respectively.

Table B.2 shows all fifteen choice scenarios presented to subjects. Note that

[2]Concretely, our design extends the procedure suggested in Ebert and Wiesen (2014) to a multi-attribute setting.

for our measure of prudence, R_2 is a zero-mean lottery instead of a fixed reduction in wealth, i.e. R_2 only adds variance in this case. The grid of compensations offered in the choice lists varies with the endowments. Each choice list contains 21 rows across which the compensation increases at equal intervals. All grids are centered at zero.

In the analyses of our risk data, we create comparability between the compensation payments of different lotteries by dividing each by their expected value.

C Reduced-form analyses

C.1 Construction of confidence intervals

The procedure is best understood by considering the following auxiliary regression analysis of our results. Let $y_{i,j}$ denote an outcome of interest derived from subject i's selection of task j. We then estimate the saturated regression model separately for the stages UD, MD, and ER:

$$y_{i,j} = \alpha_i + \beta \text{Domain}_j + \sum_{\tau} \gamma_{\tau} \text{Delay}_{\tau(j)} + \sum_{\tau} \delta_{\tau} \text{Domain}_j \times \text{Delay}_{\tau(j)} + \varepsilon_{i,j}. \quad (7)$$

Here, α_i is a subject fixed effect, Domain_j is a binary variable taking the value of 1 if the earlier dated payment in task j is denoted in charity-euros, $\text{Delay}_{\tau(j)}$ is a binary variable taking the value of 1 if the later dated payment in task j has a delay of τ months, and $\varepsilon_{i,j}$ denotes the individual error term.

The confidence intervals developed by Morey (2008) and Cousineau (2005) for differences in means across tasks will be similar to the confidence intervals obtained for the corresponding linear combination of regression parameters. We report the estimates of Equation (7) in Table A.2 of the Appendix. Table C.1 presents analogous estimates with clustered standard errors.

C.2 Results from risk apportionment tasks

We can characterize the shape of the flow utility function up to the third derivative from the subjects' choices under risk.

Figure C.1 shows the cumulative distribution of the required compensation payments in the risk apportionment tasks. This non-parametric analysis yields two main findings, which we discuss in turn.

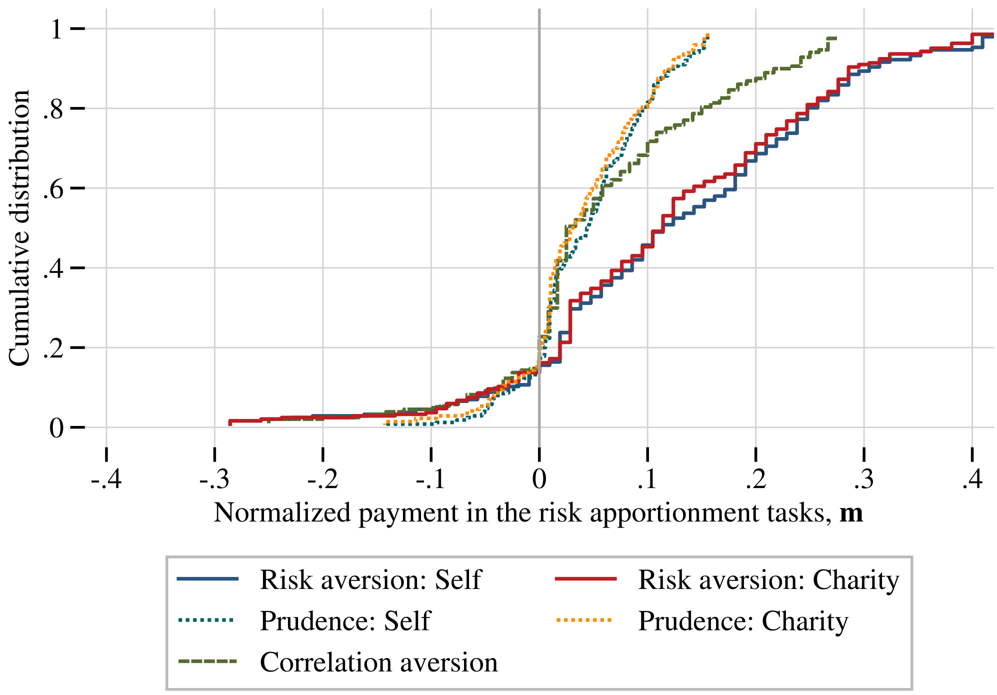


Figure C.1: This figure plots the cumulative distribution function of the normalized compensation payments m for each of the five stages of the risk apportionment tasks. For each risky choice, we first divide the indifference points by the expected value of the corresponding base lottery without compensation to render choices comparable (see Table B.2 for an overview of each stage). For each stage, we then obtain m by taking the average of the three normalized lottery choices. The figure then plots the cumulative distribution function of m for each stage (N = 244). "Risk aversion: Self" and "Risk aversion: Charity" show the distribution of second-order risk attitudes over self-euros and charity-euros. "Prudence: Self" and "Prudence: Charity" show the distribution of third-order risk attributes over self-euros and charity-euros. "Correlation aversion" shows the distribution of the multivariate risk aversion over self-euros and charity-euros.

More than 80% of subjects display second- and third-order risk aversion for self-euros and charity-euros. We can neither reject the null hypothesis that people are on average *equally* risk-averse in both domains (paired Wilcoxon signed-rank test, $p = 0.251$) nor that risk preferences in both domains are equally distributed (Kolmogorov–Smirnov test, $p = 0.786$).[3]

This finding underlies Result 1 in the main text and motivated our as-

[3]Figure C.2 plots the cumulative distribution of the *estimated* coefficients of relative risk aversion when separately fitting a CRRA utility function to the the risky lottery choices from the stages *RA-SELF* and *RA-CHARITY*, respectively. While this approach imposes a specific parametric form, it has the advantage of making the normalized monetary payments from Figure C.1 more comparable. Again, we cannot reject the null hypothesis that subjects are equally risk-averse in both domains ($p > 0.500$).

sumption that the single-attribute utility functions representing utility from self-euros and charity-euros only differ by a multiplicative constant.[4] We also observe a strong positive correlation ($\rho = 0.671$) between subjects' third-order risk aversion (prudence) in the self- and other domain.

Next, we classify more than 80% of subjects as *correlation averse*. Correlation aversion says that the cross-derivative with respect to payments in self-euros and charity-euros is negative. This means that payments to the self and donations are partial substitutes. Intuitively, the richer a person, the higher their marginal utility of donating another euro. This underscores the emerging consensus on a relationship between income, wealth, and charitable giving (Meer and Priday, 2020). The risk apportionment tasks deliver a non-parametric measure of the condition for correlation aversion, namely that the cross-derivative with respect to payments in self-euros and charity-euros is negative.

Summing up, we document the non-separability of multi-attribute utility and identical curvatures of the single-attribute utility functions. Our analysis of intertemporal choices builds on the result of equal curvatures. First, assuming that the univariate utility functions for self-euros and charity-euros have equal curvatures allows us to derive slightly more general conclusions than under the nested case of linear utility, as comparisons of discount factors across domains are no longer confounded by potential differences in curvature. Second, it motivates the assumption of equal curvatures in our structural model in Section 5.

In contrast, we will abstract from the non-separability of the utility function in our structural estimation. The primary reason is that under the common assumption of narrow bracketing of monetary rewards by subjects in laboratory experiments, the choice data that we use in our structural estimation involves only tradeoffs that are unaffected by the question of whether the multi attribute utility function is separable or not. As such, assuming non-separability is inconsequential.

[4]The most commonly used one- and two-parameter families of utility functions are pinned down (up to a linear transformation) by their second- and third-order risk aversion.

C.3 Additional tables and figures

Table C.1: Regression analysis of intertemporal choices with clustered standard errors

	Univariate discounting			Multivariate discounting			Exchange rate
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
charity-Euro	-0.005		0.001	-1.557		-1.079	
	(0.008)		(0.004)	(0.142)		(0.096)	
1 month							-0.042
							(0.036)
3 months		-0.072	-0.070		0.219	0.315	-0.084
		(0.004)	(0.005)		(0.017)	(0.035)	(0.039)
6 months		-0.138	-0.132		0.524	0.785	-0.137
		(0.006)	(0.008)		(0.031)	(0.063)	(0.045)
12 months		-0.205	-0.199		1.083	1.682	-0.195
		(0.009)	(0.011)		(0.058)	(0.121)	(0.054)
3 months × charity-Euro			-0.003			-0.192	
			(0.006)			(0.038)	
6 months × charity-Euro			-0.011			-0.523	
			(0.009)			(0.070)	
12 months × charity-Euro			-0.011			-1.199	
			(0.013)			(0.135)	
Constant	0.843	0.944	0.943	2.546	1.311	1.850	2.070
	(0.004)	(0.004)	(0.005)	(0.071)	(0.025)	(0.040)	(0.030)
N	1952	1952	1952	1952	1952	1952	1220
R^2	0.386	0.620	0.621	0.396	0.245	0.471	0.921
Subject FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Subjects	244	244	244	244	244	244	244

Note: This table shows pooled OLS regression estimates where the unit of observation are subject-choices. In columns 1–3, we include all choices from the two univariate discounting stages (*UD-SELF*, *UD-CHARITY*). The dependent variable is the net present value $y_{i,\tau,d}$ of the delayed payment, where i denotes the subject, τ the delay in months, and d is the numéraire of the payments (self-euros or charity-euros). Columns 4–6 include all choices from the two multivariate discounting stages (*MD-SELF*, *MD-CHARITY*). The dependent variable is the implied conversion factor $y_{i,\tau,d}$ that makes subjects indifferent between a payment of 50 euros today (self-euros or charity-euros) and a delayed payment of $50 \cdot y_{i,\tau,d}$ of type d (self-euros or charity-euros). In column 7, we include all choices from the exchange rate stage ER. The dependent variable is the implied (forward) exchange rate $y_{i,\tau}$ at different delays τ. "Charity-euro" is a binary indicator variable taking the value of 1 if the numéraire of the earlier payment are charity-euros. "τ month(s)" is a binary indicator variable taking the value of 1 if the later payment is received with a delay of τ month(s), where $\tau = 1$ month is the omitted category in columns 1–6 and "0 months" is the omitted category in column 7. All regressions include subject fixed effects. Standard errors are clustered at the subject level and shown in parentheses.

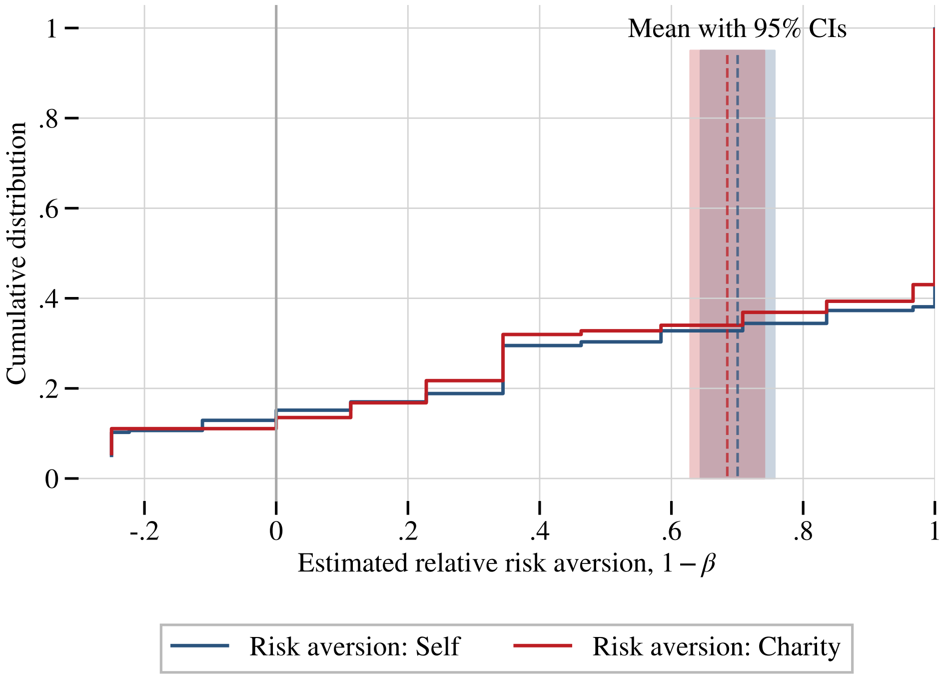


Figure C.2: This figure plots the cumulative distribution of the estimated coefficient of relative risk aversion for self-euros and charity-euros. For each individual, we fit a CRRA utility function of the form $u(x) = x^{\beta}$ to the choices from the stage *RA-SELF* (*RA-CHARITY*) to obtain a measure of risk aversion over self-euros (charity-euros). The vertical line indicates the sample mean. 95% confidence intervals are indicated as shaded regions. The average coefficient of risk aversion is 0.701 for self-euros and 0.685 for charity-euros.

D Structural estimation

D.1 Practical estimation

To calculate the minimum-distance estimator $\hat{\theta}$, we employ the L-BFGS-B algorithm, which is appropriate for constrained optimization (Byrd et al., 1995). We use a Python implementation of this estimation routine (Gabler, 2020). We impose the following box constraints: $\delta \in (0, 1]$ (positive discounting), $\beta \in [0, 5]$, $\alpha \in [0, 5]$ (non-negative choice-dated utility) and $w \in [0, 1]$ (altruism weight between 0 and 1). As local minima are a natural concern in any structural estimation, we repeatedly estimate our model using 25 randomly-chosen initial values from a uniform distribution over the parameter space. Moreover, we always include as initial values at least one parameter draw where $\alpha = 1 - w = 0$ to ensure that purely selfish preferences were in the consideration set of the estimator. As our final parameter estimate, $\hat{\theta}$, we choose the estimate with the minimum weighted distance among all 25 estimates. We obtain standard errors from an estimator of the asymptotic variance-covariance matrix of the estimator:

$$(\hat{G}'W\hat{G})^{-1}(\hat{G}'W\hat{\Lambda}W\hat{G})(\hat{G}'W\hat{G})^{-1}, \tag{8}$$

where $\hat{G} = N^{-1}\sum_{i=1}^{N} \nabla_\theta m_i(\hat{\theta})$ and $\hat{\Lambda} = Var[m(\hat{\theta})]$. The empirical and estimated moments are shown in Figure A.3.

D.2 Monte Carlo

We also conducted Monte Carlo experiments to increase our confidence in the estimation procedure. We simulate the choices of $N = 200$ agents with preferences θ_0 for randomly-chosen values of θ_0. For each θ_0, we start our estimation procedure at a perturbed initial value of $\theta_0 + \xi$. The minimum-distance estimator is able to back out θ_0 in our simulation experiments.

D.3 Present bias

Monetary payments to both subjects and Operation ASHA were received with a minimum delay of two to three days. The consequence-dated utility from either type of payment thus accrues in the future. In contrast, choice-dated prosocial utility is realized immediately. How does this affect the interpretation of our structural estimates in the presence of present-biased preferences? We will show below that this implies a small upward bias of the choice-dated utility parameter.

Direction of the bias. In Section 5, we estimate the parameters of the following parametric utility function[5]

$$V_t^{\text{Base}} = \alpha \mathbb{1}\left(\sum_{\tau=0}^{T} c_{t+\tau} > 0\right) + \sum_{\tau=0}^{T} D(\tau)\left(ws_{t+\tau}^{\gamma} + (1-w)c_{t+\tau}^{\gamma}\right) \tag{9}$$

and assume exponential discounting, $D(\tau) = \delta^{\tau}$, of the utility associated with payments that are implemented τ months after the subjects take their decisions.

To understand how present-biased preferences would affect the interpretation of the choice-dated utility parameter α, it is instructive to consider an alternative specification

$$V_t^{\text{PB}} = \tilde{\alpha} \mathbb{1}\left(\sum_{\tau=0}^{T} c_{t+\tau} > 0\right) + \sum_{\tau=0}^{T} \tilde{D}(\tau)\left(\tilde{w}s_{t+\tau}^{\tilde{\gamma}} + (1-\tilde{w})c_{t+\tau}^{\tilde{\gamma}}\right) \tag{10}$$

with

$$\tilde{D}(\tau) = \left(\beta\tilde{\delta}^{2/30}\right)\tilde{\delta}^{\tau}. \tag{11}$$

Here, β captures the degree of present bias, and $\delta^{2/30}$ accounts for the additional delay of two days before bank transfers were received by the recipient. Dividing Equation (10) by $\beta\tilde{\delta}^{2/30}$ yields

$$\frac{V_t^{\text{PB}}}{\beta\tilde{\delta}^{2/30}} = \frac{\tilde{\alpha}}{\beta\tilde{\delta}^{2/30}} \mathbb{1}\left(\sum_{\tau=0}^{T} c_{t+\tau} > 0\right) + \sum_{\tau=0}^{T} \tilde{\delta}^{\tau}\left(\tilde{w}s_{t+\tau}^{\tilde{\gamma}} + (1-\tilde{w})c_{t+\tau}^{\tilde{\gamma}}\right) \tag{12}$$

This show that there is a direct relationship between the choice-dated utility parameter $\tilde{\alpha}$ in Equation (10) and the choice-dated utility parameter α in

[5]To avoid confusion, note that in this section, we use γ instead of β to denote the curvature of the consequence-dated utility function. This substitution allows us follow the common norm that the degree of present bias is denoted by β.

equation 10:

$$\alpha = \frac{\tilde{\alpha}}{\beta \tilde{\delta}^{2/30}} \tag{13}$$

Thus, if subjects' true preferences were accurately represented by V^{PB}, and we use their choices to estimate the utility function V_t^{PB}, our estimate of α will overstate the quantitative importance of the choice-dated utility component.

Bounding the bias. How large is the potential upward bias in our estimation of α if subjects were present biased? To get a sense of the magnitude, estimates of $\tilde{\delta}$ and β are necessary. First, we draw on meta-analytic estimates of β from Imai et al. (2020), who collect 220 estimates from 22 studies. Their meta-analytic average of β is between 0.95 and 0.97 for studies using monetary rewards, and 0.88 for studies using a real-effort paradigm. Second, we use our own estimate of the one-month discount factor to calibrate δ at 0.992 (Figure 5). This suggests that our main specification would overstate the magnitude of the choice-dated utility by about 3.1% to 5.3% if we use the mean estimates from studies with monetary rewards (such as ours). If we instead use the average β from studies with real-effort tasks, then the upward bias would be about 13.7%.

Taken together, this suggests that our baseline structural estimates of the choice-dated utility parameter would not change much if subjects were $\beta - \delta$ discounters rather than exponential discounters.

D.4 Robustness

This section contains additional robustness exercises related to our structural estimation. We show that our baseline estimates of the structural parameters that capture the choice-dated and the consequence-dated prosocial utility from charitable contributions (see Equation (5) in Section 5) are robust to a series of alternative specifications. First, we show that the parameter estimates are quantitatively robust to allowing for non-exponential discounting. Second, we show that we obtain similar qualitative results if we allow for amount-dependent choice-dated prosocial utility. Third, we document that the quantitative importance of the choice-dated prosocial utility component is robust to potential noise in subjects' risky lottery choices. Fourth, we present an extension allowing for background consumption.

D.4.1 Non-exponential discounting

Our baseline specification in Equation (5) imposes the parametric assumption of exponential discounting, i.e. $D(\tau) = \delta^{\tau}$. Table D.1 presents estimates from two alternative specifications that allow for non-exponential discounting. Columns 1 and 2 present the baseline estimates. We then present analogous parameter estimates allowing for quasi-hyperbolic discounting in the form of $\beta - \delta$ discounting (columns 3 and 4). Specifically, we assume that $D(\tau) = \beta\delta^{\tau}$ for $\tau > 0$. Finally, we relax all parametric restrictions on $D(\tau)$ and allow the model to flexibly estimate discount factors for different time horizons directly.

We find that allowing for non-exponential discounting has virtually no effect on our estimates of the choice-dated and consequence-dated prosocial utility parameters. Moreover, the implied discount factors $D(\tau)$ are very similar across specifications, suggesting that exponential discounting is a reasonable first-order approximation in our setting. Taken together, this suggests that the assumption of exponential discounting in our baseline specification is not driving the results.

Table D.1: Structural model with non-exponential discounting

	A. Exponential		B. $\beta - \delta$		C. Unrestricted	
	Est. (1)	SE (2)	Est. (3)	SE (4)	Est. (5)	SE (6)
Choice-dated prosociality, α	0.642	0.141	0.675	0.149	0.681	0.151
Consequence-dated prosociality, $1-w$	0.327	0.012	0.320	0.013	0.319	0.013
Relative risk aversion	0.802	0.052	0.801	0.052	0.799	0.052
1-month exponential discounting, δ	0.992	0.002	0.993	0.002		
Present bias parameter, β			0.994	0.002		
Discount factors $D(\tau)$:						
$D(1)$					0.988	0.003
$D(3)$					0.971	0.007
$D(6)$					0.951	0.012
$D(12)$					0.925	0.019
Implied discount factors:						
$D(1)$	0.992		0.987		0.988	
$D(3)$	0.976		0.966		0.971	
$D(6)$	0.953		0.946		0.951	
$D(12)$	0.908		0.907		0.925	

Note: This table presents parameter estimates for alternative specifications of the structural model. Columns 1 and 2 present estimates of the baseline specification assuming exponential discounting with a 1-month discount factor of δ. Columns 3 and 4 present estimates where we instead allow for quasi-hyperbolic discounting with present-bias parameter β and a long-term 1-month discount factor of δ. Columns 5 and 6 present estimates where we estimate the discount factors $D(\tau)$ without imposing any parametric restrictions on $D(\tau)$. The models are otherwise identical in their functional form assumptions. Estimates are obtained from a minimum distance estimator as described in Appendix Section D.1.

D.4.2 Amount-dependent choice-dated prosocial utility

While it is conceivable that the size of a donation may affect the choice-dated utility from giving, our baseline specification assumed amount-independent choice-dated prosocial utility for reasons discussed in Section 5.

In this section, we relax the assumption that choice-dated prosocial utility is amount-independent. We separately re-estimate the parameters for three alternative functional relationships between the size of the donation and the corresponding choice-dated prosocial utility: (i) linear utility function, (ii) isoelastic utility function, and (iii) CARA utility function.

Table D.2 presents the results. First, note that the parameters unrelated to choice-dated prosocial utility are, reassuringly, relatively stable across specifications. Second, the estimates of the parameters related to the choice-dated prosocial utility—taken at face value—imply that the choice-dated prosocial utility is almost insensitive to the size of the donation, as shown in Panel B. However, these parameters are—with the exception of the intercept (α_0)—noisily estimated or close to the boundary of the parameter space, which makes the interpretation of these results more challenging. One interpretation is that the model is trying to fit a constant, amount-independent relationship. Indeed, Panel D shows that the implied prosocial utility from varying amounts of charity-euros (donated immediately) is rather insensitive to the size of the donation. However, an alternative interpretation is that the additional parameters (α_1, α_2) are not identified with the experimental variation that we have, thus limiting our ability to study and differentiate between alternative amount-dependent functional forms for the choice-dated prosocial utility component.

Panel C presents parameter estimates when we focus only on subjects with below-median estimated risk aversion. We obtain similar patterns, but the standard errors of the parameters related to the choice-dated utility decrease substantially. This suggests that the imprecise estimates of the parameters related to the functional form of the choice-dated prosocial utility in Panel A may be driven by subjects with relatively high risk aversion in the sample.

Table D.2: Structural model with amount-dependent choice-dated prosocial utility

	A. Constant		B. Linear utility		C. Isoelastic		D. CARA	
Functional form: Choice-dated utility	α_0		$\alpha_0+\alpha_1 c$		$\alpha_0+\alpha_1 c^{\alpha_2}$		$\alpha_0+\alpha_1 e^{-\alpha_2 c}$	
	Est. (1)	SE (2)	Est. (3)	SE (4)	Est. (5)	SE (6)	Est. (7)	SE (8)
Panel A: *Estimates for the main sample*								
Relative risk aversion, $1-\beta$	0.802	0.052	0.787	0.053	0.815	0.061	0.888	0.061
1-month discount factor, δ	0.992	0.002	0.992	0.002	0.993	0.002	0.996	0.002
Consequence-dated prosociality, $1-w$	0.327	0.012	0.344	0.015	0.347	0.015	0.337	0.014
Intercept, α_0	0.642	0.141	0.614	0.143	5.606	340.8	0.462	0.118
Slope, α_1			-0.00024	0.00016	-4.999	340.9	0.352	9.413
Curvature, α_2					0.003	0.229	0.898	8.451
Panel B: *Implied choice-dated prosocial utility*								
1 charity-Euro	0.642		0.614		0.608		0.621	
10 charity-Euro	0.642		0.612		0.573		0.470	
100 charity-Euro	0.642		0.590		0.538		0.470	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel C: *Low risk aversion sample*								
Relative risk aversion, $1-\beta$	0.297	0.067	0.278	0.065	0.314	0.077	0.319	0.062
1-month discount factor, δ	0.975	0.003	0.976	0.003	0.977	0.003	0.978	0.003
Consequence-dated prosociality, $1-w$	0.268	0.011	0.290	0.014	0.293	0.014	0.286	0.013
Intercept, α_0	4.879	1.269	5.149	1.368	4.954	1.290	3.723	0.909
Slope, α_1			-0.009	0.005	-0.970	0.143	1.422	0.637
Curvature, α_2					0.554	0.293	0.021	0.001
Panel D: *Implied choice-dated prosocial utility*								
1 charity-Euro	4.879		5.140		4.857		5.115	
10 charity-Euro	4.879		5.059		4.607		4.876	
100 charity-Euro	4.879		4.249		3.710		3.897	

Note: This table presents parameter estimates for alternative specifications of the structural model. Column 1 (“Constant”) presents estimates for the baseline model where a charitable contribution of $c > 0$ provides amount-independent prosocial utility of α_0, and zero otherwise. Column 3 (“Linear”) presents estimates for a specification of the structural model where a charitable contribution of $c > 0$ provides prosocial utility of $\alpha_0+\alpha_1 c$, and zero otherwise. Column 5 (“Isoelastic”) presents estimates for a specification of the structural model where a charitable contribution of $c > 0$ provides prosocial utility of $\alpha_0+\alpha_1 c^{\alpha_2}$, and zero otherwise. Column 7 (“CARA”) presents estimates for a specification of the structural model where a charitable contribution of $c > 0$ provides prosocial utility of $\alpha_0+\alpha_1 \exp(-\alpha_2 c)$, and zero otherwise. The models are otherwise identical to the baseline model (column 1) in their functional form assumptions. Panel A presents estimates for baseline sample. Panel B shows the implied choice-dated prosocial utility based on the above parameter estimates. Panel C shows estimates subjects with below median risk aversion. Panel D is analogous to Panel B but uses the estimates from Panel C. Estimates are obtained from a minimum distance estimator as described in Appendix Section D.1.

D.4.3 Accounting for noise in risky lottery choices

In this section, we examine the robustness of our results to handling subjects with very high revealed risk aversion in the stages *RA – SELF* and *RA – CHARITY* of our experimental design. In these stages, respondents can choose between a lottery where negative shocks are disaggregated across states (Option A) and a lottery where negative shocks are aggregated in one state in conjunction with a compensatory payment (Option B). We then elicit the switching point between Option A and Option B by varying the compensatory amount using the multiple price list methodology (see Section 3 for more details). A non-negligible share of respondents either always prefer Option A, or is only willing to switch for high compensatory amounts equivalent to 90% or more of the maximum amount possible, which implies a relative risk aversion greater than one.

As highlighted in Wakker (2008), the CRRA utility function in our baseline specification has difficulties matching such a behavior. We therefore excluded the 18% of subjects with an average normalized switching point greater than 0.9 in the stages *RA – SELF* and *RA – CHARITY* to avoid corner solutions from our baseline estimation.[6]

Columns 4 and 6 of Table D.3 present parameter estimates if we instead trim the sample by removing subjects with an average normalized switching point of 85% (or above) or 95% (or above). Columns 1–3 present estimates if we winsorize the data and replace outliers with 85%, 90% of 95% of the maximum compensatory amount that was possible in a given list.

Three patterns emerge. First, the estimates of time preference (δ) and the consequence-dated utility parameters ($1-w$) are relatively unaffected by the precise choice of how we deal with very risk-average subjects—as one would expect. Second, the estimates of the coefficient of relative risk aversion ($1-\beta$) is more sensitive, which is expected and the reason for trimming in our baseline specification (column 5). Note that the criterion function value increases if we include more highly risk-averse subjects or instead winsorize their risky lottery choices. Third, this change in the coefficient of relative aversion coincides with changes in the choice-dated prosocial utility param-

[6] Note that a high share of corner choices is not uncommon in laboratory studies which try to recover preference parameters from individual choices. For example, in Andreoni and Sprenger (2012), around 37% of subjects only choose corner allocations.

eter (α). The parameter estimate is always statistically significantly different from zero, which suggests that our qualitative conclusions from the structural exercise remain valid. However, we would expect α and β to be related as β also affects the scale of the implied utility from self-euros and charity-euros. It is therefore instructive to examine how the ratio of the choice-dated prosocial utility and the utility from a fixed payment to the self vary across specifications. Panel B shows that the relative value of the choice-dated utility compared to an immediate payment of 50 self-euros is very stable across specifications.

Taken together, these results suggest that the relative importance of the choice-dated prosocial utility component is robust to how we handle very risk-averse subjects in our structural estimation.

Table D.3: Structural model: Accounting for noise in the elicitation of risk attitudes

	Winsorized risk choices			Trimmed sample		
	85% (1)	90% (2)	95% (3)	85% (4)	90% (5)	95% (6)
Panel A: Parameters						
Choice-dated prosociality, α	0.3381	0.3071	0.302	0.8762	0.6421	0.4851
	(0.0688)	(0.0641)	(0.0646)	(0.1997)	(0.1432)	(0.1059)
Relative risk aversion, $1-\beta$	0.9616	0.9861	0.9900	0.7287	0.8022	0.8729
	(0.0486)	(0.0499)	(0.0512)	(0.0546)	(0.0528)	(0.0516)
Consequence-dated prosociality, $1-w$	0.3497	0.3528	0.3535	0.3147	0.3266	0.3362
	(0.0120)	(0.0123)	(0.0124)	(0.0120)	(0.0124)	(0.0125)
1-month discount factor, δ	0.9984	0.9994	0.9996	0.9894	0.9922	0.9949
	(0.0020)	(0.0021)	(0.0022)	(0.0022)	(0.0021)	(0.0021)
Panel B: Utility comparisons						
Choice-dated prosocial utility relative to the utility of 50 self-euros today: α / (w 50^{β})	0.447	0.449	0.451	0.442	0.440	0.444
Criterion function value	2.1731	2.2914	2.4050	1.8231	1.8677	2.0550
Subjects	244	244	244	182	199	244

Note: This table presents parameter estimates for our baseline structural model. Estimates are obtained from a minimum distance estimator as described in Appendix Section D.1. Columns 1–3 winsorize risky lottery choices at 85%, 90%, and 95% of the maximum of the multiple price lists, respectively. Columns 4–6 trim the sample by excluding subjects that, on average, have a switching point that is greater than 85%, 90% and 95% of the maximum range of the multiple price list in the stages *RA – SELF* and *RA – CHARITY*, respectively. "Criterion function value" is the value of the criterion function at the estimated parameters.

D.4.4 Background consumption

The baseline structural estimates were obtained under the assumption of narrow bracketing, which allowed us to abstain from modelling background consumption outside the laboratory. In this section, we examine how accounting for background consumption in our structural estimation affects the parameters capturing the prosocial utility from giving.

We extend the baseline model in Equation (5) by introducing background consumption of self-euros, ω_s, and charity-euros, ω_c, in each period τ:

$$V_t^{BC} = \alpha \mathbb{1}\left(\sum_{\tau=0}^{12} c_{t+\tau} > 0\right) + \sum_{\tau=0}^{12} \delta^\tau \left(w(s_{t+\tau} + \omega_s)^\beta + (1-w)(c_{t+\tau} + \omega_c)^\beta\right) \tag{14}$$

Note that subjects receive choice-dated prosocial utility *only* if they cause an *additional* donation as a result of their choices in the experiment. The background consumption of charity-euros cannot act as a source of choice-dated utility. Note that a challenge for introducing background consumption in our setting is that our subjects are highly risk averse as revealed by their choices. Without background consumption, we already had to exclude the most risk averse subjects and still obtained a coefficient of risk aversion of 0.8. With background consumption, it will be even more difficult to rationalize subjects' choices with reasonable parameter estimates as requiring a high compensation for bundling risks in the risk apportionment task *despite* background consumption would imply an even higher curvature of the utility function.[7]

In a first step, we estimate the background consumption parameters together with the paramters governing the utility function in Equation (14) using the minimum distance estimator described in Appendix Section D.1. Column 1 of Panel A of Table D.4 presents the results. Column 2 then imposes the restriction that $\omega_c = 0$, whereas columns 3–7 exogenously fix ω_s and ω_c to a range of different values. As expected, the model requires a higher level of risk aversion to rationalize choices when increasing the background consumption parameters. At the same time, the choice-dated prosocial utility parameter α declines to zero.

[7]This point is also made by Andreoni and Sprenger (2012), who find that the estimated level of risk aversion increases in background consumption.

Panel B of Table D.4 presents analogous estimates when focusing on the subset of the 50% of respondents who are least risk averse (based on their choices). In this subsample, the parameter estimates are very stable across specifications. Moreover, the value of the choice-dated utility (α) relative to the consumption utility of $50 + \omega_s$ self-euros today is relatively stable.

Table D.4: Structural model with background consumption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel A: Baseline sample							
Choice-dated prosociality, α	0.6164	0.5892	0.1179	0.0017	0.0013	0.001	0.0008
	(0.1273)	(0.1347)	(0.0717)	(0.0114)	(0.0096)	(0.0084)	(0.0075)
Relative risk aversion, $1-\beta$	0.8719	0.8005	0.8332	0.9900	0.99	0.99	0.99
	(0.0614)	(0.0519)	(0.056)	(0.0631)	(0.0712)	(0.0794)	(0.0874)
Consequence-dated prosociality, $1-w$	0.3346	0.3171	0.3789	0.4213	0.4198	0.4184	0.4171
	(0.0154)	(0.0131)	(0.0166)	(0.0136)	(0.0138)	(0.014)	(0.0142)
1-month discount factor, δ	0.9965	0.9926	0.9961	0.9998	0.9998	0.9998	0.9998
	(0.0019)	(0.0019)	(0.0016)	(0.0012)	(0.0013)	(0.0014)	(0.0015)
ω_s	0.0007	0.0028	2	4	6	8	10
	(0.0007)	(0.0003)					
ω_c	3.1711	0	2	4	6	8	10
	(1.0419)						
Implied utility ratio: $\alpha/(w(50+\omega_s)^\beta$	0.5612	0.3953	0.0982	0.0028	0.0022	0.0017	0.0013

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Panel B: Low risk aversion sample							
Choice-dated prosociality, α	4.3164	4.4125	4.2554	4.2806	4.2161	4.0488	3.7878
	(1.3005)	(1.2578)	(1.2284)	(1.4382)	(1.6264)	(1.7659)	(1.8441)
Relative risk aversion, $1-\beta$	0.3219	0.308	0.3293	0.3127	0.3005	0.2939	0.2927
	(0.0793)	(0.0662)	(0.0662)	(0.0727)	(0.0799)	(0.0873)	(0.0945)
Consequence-dated prosociality, $1-w$	0.255	0.2524	0.2566	0.2574	0.2611	0.2662	0.272
	(0.0137)	(0.0116)	(0.0113)	(0.013)	(0.0146)	(0.016)	(0.0173)
1-month discount factor, δ	0.9793	0.9783	0.9797	0.981	0.9821	0.9831	0.984
	(0.0035)	(0.0027)	(0.0029)	(0.003)	(0.0031)	(0.0031)	(0.0031)
ω_s	2.1123	2.0978	2	4	6	8	10
	(1.2934)	(1.3089)					
ω_c	1.2169	0	2	4	6	8	10
	(3.3424)						
Implied utility ratio: $\alpha/(w(50+\omega_s)^\beta$	0.3969	0.3828	0.4044	0.3716	0.3416	0.3138	0.2875

Note: This table presents parameter estimates from the structural model when allowing for background consumption of self-euros (ω_s) and charity-euros (ω_c). Each column presents estimates of the utility function described in Equation (14). Column 1 jointly estimates the preference parameters and the vector of background consumption. Column 2 introduces the restriction $\omega_c = 0$. Columns 3–7 present estimates when both ω_s and ω_c have been exogenously assigned. Panel A presents estimates from the sample of subjects used in our baseline estimation. Panel B restricts to subjects in the bottom half of the risk aversion distribution. Specifically, we restrict so subjects with a normalized switching point of 0.7 or lower in the stages *RA – SELF* and *RA – CHARITY*. The *implied utility ratio* indicates the value of the choice-dated prosocial utility of a donation relative to the consumption utility of $50+\omega_s$ self-euros consumed today.

D.4.5 Additional tables and figures

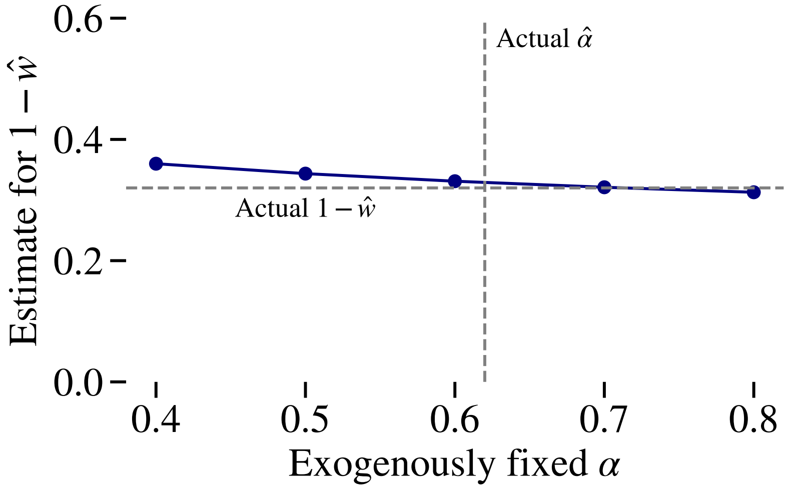


Figure D.1: This figure presents the results from a sensitivity analysis where we exogenously set the choice-dated prosocial utility parameter α to a range of values from 0.4 to 0.8, and re-estimate all other parameters of our baseline structural model. We then plot the relationship between α and our estimate of the consequence-dated prosocial utility parameter, $1-\hat{w}$. The baseline parameter estimates for α and $1-w$ are indicated by a horizontal and vertical line.

Table D.5: Structural model without using choices from multivariate discounting stage

	Excl. stage MD	
	Est. (1)	SE (2)
Choice-dated prosociality, α	0.193	0.064
Consequence-dated prosociality, $1-w$	0.421	0.014
Relative risk aversion, $1-\beta$	0.802	0.052
δ	0.992	0.002

Note: This table presents parameter estimates of our baseline structural model when excluding choices from the stages *MD-SELF* and *MD-CHARITY* from the estimation. The estimation procedure is otherwise identical to our baseline structural model.

E Theory appendix

E.1 Conceptual framework

We briefly discuss choice-dated prosocial utility and conditions that imply a declining forward exchange rate. Recall that t denotes the current period, τ indexes time relative to t, $s_{t+\tau}$ denotes a dated payment to the decision-maker to be received at $t+\tau$, and $c_{t+\tau}$ represents a donation to charity that was caused at time t and will be received by the charity in τ periods. Suppose that the decision-maker's preferences are given by

$$U_t^{\text{choice}} = \alpha(\mathbf{c}) + \sum_{\tau=0}^{\infty} D(\tau) v(s_{t+\tau}), \tag{15}$$

where $\alpha(\cdot)$ captures the choice-dated prosocial utility derived from the stream of future donations $\mathbf{c} = (c_{t+\tau})_\tau$ that has been *caused* in t. As we are mainly interested in the effect of delays, we replace α by a linear approximation

$$\alpha(\mathbf{c}) \approx a \sum_{\tau=0}^{\infty} D^c(\tau) c_{t+\tau}, \tag{16}$$

where $D^c(\tau)$ can be interpreted as an implicit "discount factor" that describes how choice-dated prosocial utility from causing a future charitable donation depreciates with the delay of the donation. We provide a sufficient condition for an asymptotically declining forward exchange rate:

Assumption 1. *The implicit discount factor $D^c(\tau)$ declines at a lower rate than the subjective discount factor $D(\tau)$, i.e.* $\lim_{\tau\to\infty} D^c(\tau)/D(\tau) = \infty$.

Intuitively, this implies that the choice-dated prosocial utility from the act of giving is less sensitive to the delay τ than the utility from payments to the self.[8] Thus, for large τ, the choice-dated prosocial utility will be insensitive to the delay τ *relative* to the sensitivity of utility from self-euros: the forward exchange rate will converge to zero.

We provide a simple example to illustrate why we would expect this condition to hold. Suppose that causing a delayed donation $c_{t+\tau}$ at time t provides an

[8] If we are willing to assume exponential discounting, i.e. $D^c(\tau) = \delta_c^\tau$ and $D(\tau) = \delta^\tau$, the assumption is equivalent to $\delta_c > \delta$.

immediate feeling of warm glow (Andreoni, 1989), $\bar{\alpha}$, independent of the size of the donation itself, in addition to other sources of choice-dated prosocial utility, i.e. suppose that the choice-dated prosocial utility generated by $c_{t+\tau}$ is:

$$\bar{\alpha}\mathbb{1}\left(c_{t+\tau} > 0\right) + v_\tau(c_{t+\tau}), \tag{17}$$

where $v_\tau(c_{t+\tau})$ is a family of positive function. Today, the decision-maker prefers a delayed donation $c_{t+\tau}$ in τ periods to an equally delayed amount $s_{t+\tau}$ of self-euros if

$$\bar{\alpha} + v_\tau(c_{t+\tau}) \geq D(\tau)u(x) \iff \underbrace{\frac{\bar{\alpha}}{D(\tau)v(x)}}_{\to\infty} + \underbrace{\frac{v_\tau(c_{t+\tau})}{D(\tau)v(x)}}_{\geq 0} \geq 1. \tag{18}$$

Thus, for large τ, the decision-maker will prefer the donation to contemporaneous self-euros, implying an asymptotically declining forward exchange rate. Note that we only need the existence of an (arbitrarily small) positive lower bound on the utility from the act of giving itself to obtain this result:

Proposition 1. *Suppose that the choice-dated prosocial utility from causing a dated donation g at time t that will be received by the charity at $t+\tau$ is bounded from below by $\bar{\alpha} > 0$. Then, the forward exchange rate converges to zero.*

Intuitively, the subjective discount factors imply that the present value of future self-euros becomes negligible for large τ and eventually falls below the lower bound on the immediate choice-dated prosocial utility (e.g. "warm glow"). In particular, we do not need any additional assumptions on the source of prosocial utilities.

E.2 Fungibility of money over time

In our experiment, we interpret payment dates as representing corresponding consumption dates. In this section, we show that even if subjects can borrow and invest self-euros at a fixed market interest rate, we should not expect a declining forward exchange rate.

To see this, recall that we elicit subjects' indifference points between receiving $s_{t+\tau} = 50$ euros for themselves in τ months and an alternative payment of $c^*_{t+\tau}$ to a charity in τ months. We observe that the forward exchange rate $\mathrm{F}_\tau = c^*_{t+\tau}/50$ declines in τ in our experiment. Assuming a discounted utility framework with a stationary flow utility function $u(s_{t+\tau}, c_{t+\tau})$ and discount factors $D(\tau)$, the indifference point $c^*_{t+\tau}$ is independent of τ, as can be seen below:

$$D(\tau)u(50,0) = D(\tau)u(0, c^*_{t+\tau}) \tag{19}$$

Now assume that subjects can borrow and invest at a market interest rate r. For the sake of the argument, assume that $D(\tau) = \delta^\tau$ and that $\delta < 1/(1+r) \equiv \delta_r$, i.e. the marginal intertemporal rate of substitution is lower than the marginal rate of transformation implied by the market interest rate. In this case, the subject should compare the utility from the net present value of the 50 self-euros to the discounted prosocial utility from a future donation:

$$\delta_r^\tau u(50,0) = \delta^\tau u(0, c^*_{t+\tau}) \tag{20}$$

This implies the following indifference condition:

$$\left(\frac{\delta_r}{\delta}\right)^\tau u(50,0) = u(0, c^*_{t+\tau}) \tag{21}$$

As τ increases, the left-hand side of Equation (21) increases (as $\delta < \delta_r$). To balance the equation, $c^*_{t+\tau}$ must increase as well. This would imply an increasing forward exchange rate F_τ, which is the opposite of what we find.

The above argument assumed that there is no source of choice-dated prosocial utility. If donations provide immediate choice-dated utility of α, we instead obtain the following indifference condition:

$$\delta_r^\tau u(50,0) = \alpha + \delta^\tau u(0, c^*_{t+\tau}) \implies \left(\frac{\delta_r}{\delta}\right)^\tau u(50,0) = \frac{\alpha}{\delta^\tau} + u(0, c^*_{t+\tau}) \tag{22}$$

As $\delta_r/\delta < 1/\delta$, the right-hand side of the above equation will grow faster than the left-hand side. To balance the equation, $c_{t+\tau}$ must decrease as τ rises. We would thus expect a declining forward exchange rate for sufficiently large τ. This demonstrates that the declining forward exchange rate in our experiment cannot be rationalized with a purely consequence-dated discounted utility framework and fungibility of payments to the self. However, fungibility of self-euros would still predict a declining exchange rate in the presence of choice-dated prosocial utility.

E.3 Consistency of intertemporal choices

This section examines internal consistency of subjects' intertemporal choices. We start by characterizing the optimal switching points for the multiple prices lists in the stages *UD-SELF*, *UD-CHARITY*, *MD-SELF*, *MD-CHARITY* and *ER* of our experiment (see Section 3 for an overview of the design). In a second step, we show that internal consistency of choices across these stages implies inequalities that we can test empirically. Finally, we show that these inequalities seem to hold in our data, suggesting that the observed discounting patterns can be rationalized with a utility function exhibiting a choice-dated prosocial utility component.

E.3.1 Switching points

Suppose that subjects' preferences can be represented by the following utility function featuring both choice-dated and consequence-dated prosocial utility from giving:

$$W_t = \alpha \mathbb{1}\left(\sum_{\tau=0}^{T} c_{t+\tau} > 0\right) + \sum_{\tau=0}^{T} \delta^{\tau} u(s_{t+\tau}, c_{t+\tau}) \tag{23}$$

where α captures the choice-dated prosocial utility from giving. The decisions in Part A of our experiment on intertemporal decision-making only involve tradeoffs between bundles of the type $(s_{t+\tau_1}, 0)$ and $(0, c_{t+\tau_2})$ for different τ_1, τ_2. To characterize indifference points between such bundles, only the marginals $u_c(c) \equiv u(0,c)$ and $u_s(s) \equiv u(s,0)$ are of relevance.

UD. Let us first consider the stages *UD-SELF* and *UD-CHARITY*. In stage *UD-SELF*, we elicit the amount UD_{τ}^{s} of self-euros to be received in τ months that make subjects indifferent to receiving 50 self-euros today:

$$u_s(50) = \delta^{\tau} u_s(UD_{\tau}^{s}) \implies UD_{\tau}^{s} = u_s^{-1}\left(\frac{u_s(50)}{\delta^{\tau}}\right) \tag{24}$$

In stage *UD-SELF*, we elicit the amount UD_τ^c of charity-euros to be donated in τ months that make subjects indifferent to donating 50 charity-euros today:

$$\alpha + u_c(50) = \alpha + \delta^\tau u_c(UD_\tau^c) \implies UD_\tau^c = u_c^{-1}\left(\frac{u_c(50)}{\delta^\tau}\right) \tag{25}$$

ER. In stage *F*, we elicit the amount Fτ of charity-euros to be donated in τ months that make subjects indifferent to receiving 50 self-euros in τ months:

$$\delta^\tau u_s(50) = \alpha + \delta^\tau u_c(F_\tau) \implies F_\tau = u_c^{-1}\left(\frac{\delta^\tau u_s(50) - \alpha}{\delta^\tau}\right) \tag{26}$$

MD. In stage *MD-SELF*, we elicit the amount MD_τ^s of charity-euros to be donated in τ months that make subjects indifferent to receiving 50 self-euros today:

$$u_s(50) = \alpha + \delta^\tau u_c(MD_\tau^s) \implies MD_\tau^s = u_c^{-1}\left(\frac{u_s(50) - \alpha}{\delta^\tau}\right) \tag{27}$$

In stage *MD-CHARITY*, we elicit the amount MD_τ^c of self-euros to be received in τ months that make subjects indifferent to donating 50 charity-euros today:

$$\alpha + u_c(50) = \delta^\tau u_s(MD_\tau^c) \implies MD_\tau^c = u_s^{-1}\left(\frac{u_c(50) + \alpha}{\delta^\tau}\right) \tag{28}$$

E.3.2 Relationship across switching points

We next examine the relationship between predicted switching conditions in different types of tradeoffs using the above equations. For example, it seems intuitive that the switching points from the stage *MD-SELF* should be related to the switching points from the stages *UD-SELF* and *ER*. Such a relationship is also suggested by Figure 1, where it would imply that the diagonal arrows are equivalent (in some sense) to a combination of successive conversions using only horizontal and vertical arrows.

Below, we compare subjects direct conversion rate between self-euros (charity-euros) today and charity-euros (self-euros) in τ months from the stages *MD-SELF* (*MD-CHARITY*) with the implied conversion rate from the following two-step procedures:

1. Convert 50 self-euros (charity-euros) today to future self-euros (charity-euros) using the conversion rate implied by the stage *UD-SELF* (*UD-CHARITY*).

2. Exchange these future self-euros (charity-euros) to contemporaneous charity-euros (self-euros) by using the exchange rate implied by the choices in stage *ER*.

The final amount of charity-euros in τ months implied by this procedure is

$$UD_{\tau}^{s} \cdot \frac{F_{\tau}}{50} = \quad u_{s}^{-1}\left(\frac{u_s(50)}{\delta^{\tau}}\right)\left(u_{c}^{-1}\left(\frac{\delta^{\tau}u_s(50)-\alpha}{\delta^{\tau}}\right)/50\right) \tag{29}$$

To relate this to *MD-SELF*, we have to impose restrictions on the shape of u_s and u_c. Following the approach in our structural model, we assume that u_s and u_c exhibit constant relative risk aversion and share a constant coefficient of relative risk aversion, β. It then follows that

$$UD_{\tau}^{s} \cdot \frac{F_{\tau}}{50} = u_{s}^{-1}\left(\frac{u_s(50)}{\delta^{\tau}}\right)\frac{1}{50}u_{c}^{-1}\left(\frac{\delta^{\tau}u_s(50)-\alpha}{\delta^{\tau}}\right) \tag{30}$$

$$= \delta^{\tau/\beta}u_{c}^{-1}\left(\frac{\delta^{\tau}u_s(50)-\alpha}{\delta^{\tau}}\right) \tag{31}$$

$$= u_{c}^{-1}\left(\frac{\delta^{\tau}u_s(50)-\alpha}{\delta^{2\tau}}\right) \leq u_{c}^{-1}\left(\frac{u_s(50)-\alpha}{\delta}\right) = MD_{\tau}^{s} \tag{32}$$

Analogously, one can show that

$$UD_{\tau}^{s} \cdot \left(\frac{F_{\tau}}{50}\right)^{-1} \leq MD_{\tau}^{c} \tag{33}$$

E.3.3 Empirical test

We can now examine whether the above inequalities hold in our data. For each subject i, we obtain the hypothetical indifference point between self-euro s_t (charity-euro c_t) today and charity-euro $c_{t+\tau}$ (self-euro $s_{t+\tau}$) in τ months from the two-step outlined above. This is the *indirect* conversion factor. The *direct* conversion factor is the one obtained directly from the choices in the stages *MD-SELF* and *MD-CHARITY*. Figure E.1 displays the average ratio of the indirect and the direct conversion factors for different time horizons τ. Consistent with the inequalities in equations 32 and 33, the ratios are all weakly greater than one. For $\tau \geq 3$, the ratios are statistically significantly greater than. This suggests that the discounting patterns from the stages *UD*, *MD* and *ER* are mutually consistent.

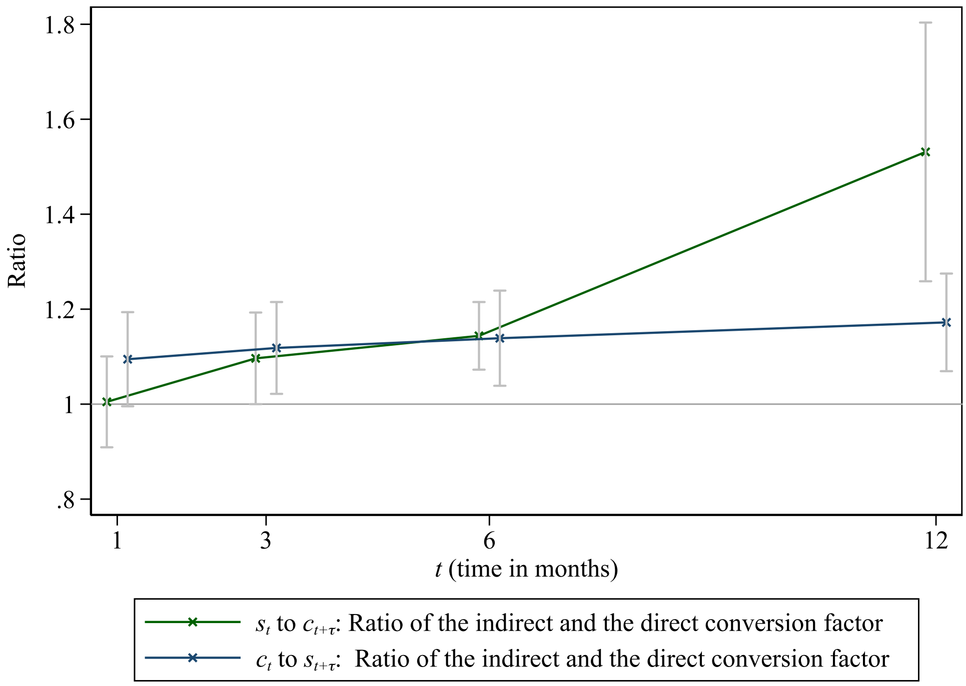


Figure E.1: This figure presents the ratio of the the *indirect* and the *direct* conversation factors. See Section E.3.3 for a description of how we obtain the conversion factors.

E.3.4 Additional remarks on consistency

One advantage of self-euros over charity-euros is that the former can still be converted to the latter, which provides some form of flexibility. For example, suppose that a subject faces a choice at time t between 1 self-euro at time t ("today") and 1 charity-euro at time $t+1$ ("tomorrow"). Rather than choosing the donation directly, the subject could take the self-euro and plan to donate it tomorrow with accrued interest r. Would that make them better off? Our perspective is that the choice-dated utility should accrue at the moment when the subject credibly commits to the donation. Thus, if the subject cannot credibly commit to donating the self-euro in the future, the choice-dated utility from planning to donate tomorrow will only realize tomorrow–and thus be subject to discounting.

This creates a tradeoff between the benefits derived from the accrued interest on the one hand, and the utility loss from having the choice-dated utility discounted. Below, we show that the latter effect will likely dominate when calibrating the model at our estimated parameter values. For this exercise, we assume the same functional form of the utility function as in our baseline structural model (see Equation (5)). The sum of the choice-dated and the consequence-dated prosocial utility from choosing the future donation is

$$\alpha + \delta(1-w) \tag{34}$$

In contrast, taking the self-euro today and waiting one period to donate $(1+r)$ would be associated with a total utility of

$$\delta(\alpha + \delta(1-w)(1+r)^{\beta}) \tag{35}$$

The subject will be prefer to take the self-euro today if $r \geq r^*$ with

$$r^* = \left(\frac{\alpha(1-\delta)}{(1-w)\delta} + 1\right)^{1/\beta} - 1 \tag{36}$$

At the estimated parameter values from Section 5, this would imply a 1-month interest rate of $r^* = 7.9\%$. This suggests that the option value of the self-euro is relatively low compared to the benefit of realizing the choice-dated prosocial utility today rather than tomorrow.

F Experimental Instructions

The original instructions used in the laboratory experiment are in German. We provide an English translation of the instructions below. The experiment has two parts. Each part consists of five different stages and each stage contains multiple price lists. To avoid repetitions, we only include the translation of one price list per stage. Within a stage, the instructions are constant across price lists except for changes in the monetary amounts or the number of months until a payment is made. See Section 3 of the paper for more details on how the price lists were constructed. The following sections contain the translations:

F.1 Introduction

Welcome and thank you for your interest in this study!

For your participation you will receive a fixed payment of 10.00 €, which will be paid to you by bank transfer after the study. In this study you will make decisions on the computer. Depending on how you decide you can earn additional money.

You are not allowed to talk to other participants during the study. Please turn off your mobile phone now, so that other participants will not be disturbed. Please only use the designated functions on the computer and make your entries using the keyboard and the mouse. If you have any questions, please raise your hand. Your question will be answered at your seat.

On the following screens you will see detailed information concerning the study. After reading this information you can confirm or refuse your participation.

To proceed click "Next".

[**end of screen**]

Information on participating in this study by the *BonnEconLab*

The following information has been sent to you via email along with the confirmation of your registration for this study. You will receive this information again now. Once you have read the subsequent declaration of consent you can confirm your participation by clicking on "I agree".

[followed by mandated exclusion restrictions for participation in this study]

[**end of screen**]

Information

In the follow part of this study, you will see important information, concerning tuberculosis and its possible treatment, that is relevant for your subsequent decisions. Please read all information carefully.

[**end of screen**]

Information about Tuberculosis

What is tuberculosis?

Tuberculosis – also called consumptiveness or White Death – is an infectious disease, which is caused by bacteria. Roughly one third of all humans are infected with the pathogen of tuberculosis. Active tuberculosis breaks out among 5 to 10% of all those infected. Tuberculosis is primarily airborne. This is also why a quick treatment is necessary.

What are the symptoms of tuberculosis?

Tuberculosis patients often suffer from generalized symptoms like fatigue, feeling of weakness, lack of appetite, and weight loss. At an advanced stage of lung tuberculosis, the patient coughs up blood, leading to the so-called rush of blood. Without treatment a person with tuberculosis dies with a probability of 43%.

How prevalent is tuberculosis?

In the year 2014, 6 million people have been recorded as falling ill with active tuberculosis. Almost 1.5 million people die of tuberculosis each year. This means more deaths are caused by tuberculosis than HIV, malaria, or any other infectious disease.

Is tuberculosis curable?

Today tuberculosis is curable. Treatment is administered by giving antibiotics several times each week over a period of 6 months. It is important that there is no interruption of treatment. In the years from 2000 to 2014 approximately 43 million human lives were saved due to the effective diagnosis and treatment of tuberculosis. The success rate of treatment for a new infection is often above 85%. The preceding numbers and information are provided by the World Health Organization (WHO), the United Nations' institution for the international public health, and are freely available. You can check this information on the web page of the WHO after this study.

Figure F.1: Typical appearance of a tuberculosis patient

[**end of screen**]

Your decision

In the course of this study you can choose between options that have different consequences. In particular, you can choose between options with the following consequences:

Additional Payment: If you choose this option, you will receive an additional payment.

Saving a Human Life: If you choose this option, you will not receive an additional payment. This option has another consequence: You save one human life.

After it has emerged which option will be implemented for you, it will be carried out exactly as described. On the next tab you will receive more information about the implementation of Saving a Human Life.

[**end of screen**]

Information about saving a human life

How will a human life be saved?

Depending on how you decide, a human life can be saved. A human life will be saved by arranging a donation of 350.00 € on your behalf to an organization that identifies and treats people suffering from tuberculosis. This donation will be executed for you by the BonnEconLab after the study. The entire donation amount will be used by the organization for the direct treatment of tuberculosis.

What does it mean to "save a life"?

In this context, to save a human life means to successfully cure one person of tuberculosis, who *otherwise* would have died from the disease. This means in particular: The donation amount is sufficient to identify and cure as many sick people such that there is at least one person among them, who would otherwise have died from tuberculosis in expectation. The calculation of the amount accommodates the fact that there are other ways (e.g., the national health care system) through which people can be cured. That means: **The amount of 350.00 € was calculated in such a way that the organization can save at least one additional human from death.**

On the next tab you will receive additional information about the possible saving of a human life and details about the organization that treats tuberculosis patients.

[**end of screen**]

Operation ASHA

Your decisions can save a human life. Depending on how you decide, an amount of 350.00 € will be transferred to the organization *Operation ASHA* after the study.

Operation ASHA is a charity organization that has specialized in the treatment of tuberculosis in disadvantaged communities since 2005. The work of *Operation ASHA* is based on the insight that the biggest obstacle for the treatment of tuberculosis is the interruption of the necessary 6-month-long regular intake of medication. For a successful treatment the patient has to come to a medical facility twice a week – more than 60 times in total – to take the medication. An interruption or termination of the treatment is fatal, because this strongly enhances the development of a drug-resistant form of tuberculosis. This form of tuberculosis is much more difficult to treat and almost always leads to death.

To overcome this problem, *Operation ASHA* developed a concept that guarantees the regular treatment through immediate spatial proximity to the patient. A possible non-adherence is additionally prevented by visiting the patient at home. By now *Operation ASHA* runs more than 360 treatment centers, almost all of which are located in the poorest regions of India. More than 60,000 sick individuals have been identified and treated this way.

Figure F.2: An employee of Operation ASHA provides medicine to a tuberculosis patient.

Operation ASHA is an internationally recognized organization, and its success has been covered by many news outlets including the New York Times, the BBC, and Deutsche Welle. MIT and University College London have already conducted research projects about the fight against tuberculosis in cooperation with *Operation ASHA*. The treatment method employed by *Operation ASHA* is described by the World Health Organization (WHO) as “highly efficient and cost-effective”.

[**end of screen**]

What determines the donation amount for saving a human life?

The donation amount ensures that at least one human life is saved in expectation.

The information used for the calculation of the donation amount exclusively consists of public statements by the World Health Organization (WHO), peer-reviewed research studies, statistical releases from the Indian government, and published figures from *Operation ASHA*. In the calculation all information was interpreted in a conservative way and more pessimistic estimates were used in case of doubt such that the donation amount of 350.00 € is, if anything, higher than the actual costs associated with saving a human life. Moreover, the calculation was based on the treatment success rate of *Operation ASHA* and the mortality rate of an alternative treatment by the national tuberculosis program in India. Furthermore, different detection rates for new cases of tuberculosis have been accounted for.

Based on a very high number of cases, one can illustrate the contribution of your donation as follows:

With your donation, *Operation ASHA* can treat five additional tuberculosis patients.

If these five sick individuals were not treated by *Operation ASHA*, one patient would die in expectation. If five people are treated by means of your donation, no patient dies in expectation. Based on these expected values, one human life will be saved with your donation. This relationship is depicted in the following diagram.

a) Without treatment by *Operation ASHA*, one of five individuals sick with tuberculosis will die in expectation.

b) With the donation five individuals sick with tuberculosis can be treated by *Operation ASHA*, and none of these individuals will die in expectation.

An agreement with *Operation ASHA* for the purpose of this study ensures that 100% of the donation amount will exclusively be used for the diagnosis and treatment of tuberculosis patients. That means that every euro of the donation amount will directly go toward saving human lives.

[**end of screen**]

Summary

Tuberculosis

The success rate of medical treatment for a new infection is very high. Nevertheless, 1.5 million people die from tuberculosis each year. The biggest obstacle for the cure of tuberculosis is a possible termination of the regular treatment with antibiotics. The concept of *Operation ASHA* is therefore based on having direct spatial proximity to its patients and being able to control and account for the regular intake of medication.

Your decision

In the course of this study you can choose between options that have different consequences. In particular, you can choose between options with the following consequences: You can choose the additional monetary payment. If you choose the other option, you will not receive an additional monetary payment, but you can save a human life. Concretely, by choosing the other option you will cause a donation. The donation of 350.00 € will be paid on your behalf, which is sufficient not only to cure one person, but to actually save that person from dying of tuberculosis.

How is the human life saved?

The donation amount of 350.00 € already accounts for the fact that a sick person could also have survived without treatment by *Operation ASHA*; or that he could instead have been treated by the national health care system. This is why the amount is sufficient for the diagnosis and complete treatment of several affected individuals.

Please note: **This is not a hypothetical game**. The option to be implemented for you will actually be carried out – exactly as described – by the *BonnEconLab*. You will receive the money in case you choose the additional monetary payment. In case you choose to save a human life, we will allow inspection of the confirmed bank transfer to the organization *Operation ASHA* upon request.

If you have individual questions, you can also direct these by email after the study to nachbesprechung@uni-bonn.de. You find this email address on the back of your seating card. You can take it home with you. Click on "Next", if you have carefully read the information on this page. Please note: You can only click on the button "Next" once you have spent at least five minutes on the seven tabs of this page.

[**end of screen**]

Information on the next part of this study

In the next part of this study, we will ask you to make a series of decisions in which you can choose between two monetary payments. The dates on which the two monetary payments are made can differ.

About this part of the study

This part of the study consists of five parts. In each part, you will make a decision in five different decision-making scenarios. At the beginning of each part, you will receive information that is relevant for this part. At the beginning of each decision-making scenario, you will also receive additional information for this particular decision-making scenario.

Payments in this part of the study

All monetary payments in this part of the study will be made by bank transfer. Each bank transfer will be made on the exact date that was indicated for the monetary payments. If, for example, a decision is about a monetary payment today, the corresponding monetary amount will be sent to you by a bank transfer today. If the decision involves a monetary payment in one month, a bank transfer with the corresponding amount will be made exactly one month from now.

In what follows, you will face a series of decision-making scenarios. One of these decision-making scenarios will be randomly selected by the computer at the end of this study. Your decision in *this* decision-making scenario will be implemented at the end of this study.

Remember:

- Every decision-making scenario can be relevant for your monetary payment.
- Your decisions in this part determine both **to whom** the monetary payment will go and **at which date** the monetary payment will be made.
- All monetary payments will be made by bank transfer.

[**end of screen**]

What does it mean that a donation will be made earlier or later?

If a donation is made earlier because of your decisions, help will be available earlier and hence people can be saved from death at an earlier point in time.

If a donation is made later, for example, in one year from now, then help will only be available later. Hence, people can only be saved from death at a later point in time. This means that the donation will be too late to help some patients that have tuberculosis in the present. In this case, patients who got sick at a later date will receive treatment instead.

The **size of the donation** is important, because more people can be helped with more money.

When making the following decisions, you should therefore take into account **when** the donation will be made and **how much** will be donated based on your decisions.

[**end of screen**]

F.2 Experiment Part A

F.2.1 UD-S

Information for the current part

In the following, you will see a series of decision-making scenarios in which you can choose between Option A and Option B.

- **Option A**: A **smaller** monetary payment **to you** at an **earlier** date.
- **Option B**: A **larger** monetary payment **to you** at a **later** date.

Thus, you can make a decision about a payment to yourself. You have the choice between a monetary payment that is smaller and made earlier; and a monetary payment that is larger, but made later.

Please note:

- Each of the following decisions could be the one that is actually implemented.
- **All** monetary payments will be made by **bank transfer**.

[**end of screen**]

Information for the decision-making scenario on the next page

[Box that repeats the relevant information for the current part of the study]

On the next page, you will see a list of choices between

- **Option A**: A smaller monetary payment to you today.
- **Option B**: A larger monetary payment to you in 12 months.

You can thus decide whether you are willing to wait to receive a larger monetary payment.

[**end of screen**]

You can now make your decision

Please indicate in each row of this table whether you choose **Option A** or **Option B**.

Option A	Option B
50.00 € for you today ∘	∘ 50.00 € for you in 12 months
50.00 € for you today ∘	∘ 52.50 € for you in 12 months
50.00 € for you today ∘	∘ 55.00 € for you in 12 months
...∘	∘ ...
50.00 € for you today ∘	∘ 120.00 € for you in 12 months
50.00 € for you today ∘	∘ 122.50 € for you in 12 months
50.00 € for you today ∘	∘ 125.00 € for you in 12 months

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.2.2 UD-C

Information for the current part

In the following, you will see a series of decision-making scenarios in which you can choose between Option A and Option B.

- **Option A**: A **smaller** monetary payment **to *Operation ASHA*** at an **earlier** date.

  You are making a smaller contribution to saving lives and the contribution is made earlier.

- **Option B**: A **larger** monetary payment **to *Operation ASHA*** at a **later** date.

  You are making a larger contribution to saving lives. However, the contribution is made later, so there is a delay.

Thus, you can choose whether you want to make a smaller donation at an earlier date to save fewer human lives, or whether you want to wait to make a larger donation at a later date to save more human lives.

Please note:

- Each of the following decisions could be the one that is actually implemented.
- **All** monetary payments will be made by **bank transfer**.

[**end of screen**]

Information for the decision-making scenario on the next page

[Box that repeats the relevant information for the current part of the study]

On the next page, you will see a list of choices between

- **Option A**: A smaller monetary payment to *Operation ASHA* today.
- **Option B**: A larger monetary payment to *Operation ASHA* in 12 months.

100% of the donation amount will be used to save human lives.

You can thus decide whether you prefer to save fewer human lives at an earlier date in the immediate future, or whether you want to help save more human lives in the future, but with a greater delay.

[**end of screen**]

You can now make your decision

Please indicate in each row of this table whether you choose **Option A** or **Option B**.

Option A	Option B
50.00 € for Operation ASHA today ○	○ 50.00 € for Operation ASHA in 12 months
50.00 € for Operation ASHA today ○	○ 52.50 € for Operation ASHA in 12 months
50.00 € for Operation ASHA today ○	○ 55.00 € for Operation ASHA in 12 months
… ○	○ …
50.00 € for Operation ASHA today ○	○ 120.00 € for Operation ASHA in 12 months
50.00 € for Operation ASHA today ○	○ 122.50 € for Operation ASHA in 12 months
50.00 € for Operation ASHA today ○	○ 125.00 € for Operation ASHA in 12 months

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.2.3 ER

Information for the current part

In the following, you will see a series of decision-making scenarios in which you can choose between Option A and Option B.

- **Option A**: Monetary payment **to you** at a **given** date.
- **Option B**: Monetary payment **to Operation ASHA** on the **same** date.

  You are making a contribution to saving human lives on the same date that you would have received your monetary payment if you had chosen **Option A**.

Thus, you can choose whether you prefer making a monetary payment to yourself on a given date, or whether you prefer making a donation to help save human lives on the same date.

Please note:

- Each of the following decisions could be the one that is actually implemented.
- **All** monetary payments will be made by **bank transfer**.

[**end of screen**]

Information for the decision-making scenario on the next page

[Box that repeats the relevant information for the current part of the study]

On the next page, you will see a list of choices between

- **Option A**: A monetary payment to *you* in 12 months.
- **Option B**: A monetary payment to *Operation ASHA* in 12 months.

100% of the donation amount will be used to save human lives.

You can thus decide whether you are willing to forego a monetary payment to yourself in 12 months in order to save human lives.

[**end of screen**]

You can now make your decision

Please indicate in each row of this table whether you choose **Option A** or **Option B**.

Option A	Option B
50.00 € for you in 12 months ○	○ 0.00 € for Operation ASHA in 12 months
50.00 € for you in 12 months ○	○ 10.00 € for Operation ASHA in 12 months
50.00 € for you in 12 months ○	○ 20.00 € for Operation ASHA in 12 months
...○	○...
50.00 € for you in 12 months ○	○ 180.00 € for Operation ASHA in 12 months
50.00 € for you in 12 months ○	○ 190.00 € for Operation ASHA in 12 months
50.00 € for you in 12 months ○	○ 200.00 € for Operation ASHA in 12 months

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.2.4 MD-S

Information for the current part

In the following, you will see a series of decision-making scenarios in which you can choose between Option A and Option B.

- **Option A**: A monetary payment **to you** at an **earlier** date.
- **Option B**: A monetary payment **to Operation ASHA** at a **later** date.

  You are making a contribution to saving lives. However, the contribution is made later, so there is a delay.

Thus, you can choose whether you prefer a monetary payment to yourself at an earlier date, or whether you prefer to wait to make a larger donation to help save human lives at a later date.

Please note:

- Each of the following decisions could be the one that is actually implemented.
- **All** monetary payments will be made by **bank transfer**.

[**end of screen**]

Information for the decision-making scenario on the next page

[Box that repeats the relevant information for the current part of the study]

On the next page, you will see a list of choices between

- **Option A**: A monetary payment to *you* today.
- **Option B**: A monetary payment to *Operation ASHA* in 12 months.

100% of the donation amount will be used to save human lives.

You can thus decide whether you are willing to forego a monetary payment to yourself at an earlier date to save human lives at a later date.

[**end of screen**]

You can now make your decision

Please indicate in each row of this table whether you choose **Option A** or **Option B**.

Option A	Option B
50.00 € for you today ∘	∘ 0.00 € for Operation ASHA in 12 months
50.00 € for you today ∘	∘ 15.00 € for Operation ASHA in 12 months
50.00 € for you today ∘	∘ 30.00 € for Operation ASHA in 12 months
...∘	∘ ...
50.00 € for you today ∘	∘ 345.00 € for Operation ASHA in 12 months
50.00 € for you today ∘	∘ 360.00 € for Operation ASHA in 12 months
50.00 € for you today ∘	∘ 375.00 € for Operation ASHA in 12 months

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.2.5 MD-C

Information for the current part

In the following, you will see a series of decision-making scenarios in which you can choose between Option A and Option B.

- **Option A**: A monetary payment **to Operation ASHA** at an **earlier** date.

  You are making a contribution to saving lives at an earlier date.

- **Option B**: A monetary payment **to you** at a **later** date.

Thus, you can choose whether you prefer a donation to help save human lives at an earlier date, or whether you prefer to wait to receive a monetary payment for yourself at a later date.

Please note:

- Each of the following decisions could be the one that is actually implemented.
- **All** monetary payments will be made by **bank transfer**.

[**end of screen**]

Information for the decision-making scenario on the next page

[Box that repeats the relevant information for the current part of the study]

On the next page, you will see a list of choices between

- **Option A**: A monetary payment to *Operation ASHA* today.
- **Option B**: A monetary payment to *you* in 12 months.

100% of the donation amount will be used to save human lives.

You can thus decide whether you are willing to forego saving human lives at an earlier date to receive a monetary payment at a later date.

[**end of screen**]

You can now make your decision

Please indicate in each row of this table whether you choose **Option A** or **Option B**.

Option A	Option B
50.00 € for Operation ASHA today ○	○ 0.00 € for you in 12 months
50.00 € for Operation ASHA today ○	○ 5.00 € for you in 12 months
50.00 € for Operation ASHA today ○	○ 10.00 € for you in 12 months
...○	○...
50.00 € for Operation ASHA today ○	○ 115.00 € for you in 12 months
50.00 € for Operation ASHA today ○	○ 120.00 € for you in 12 months
50.00 € for Operation ASHA today ○	○ 125.00 € for you in 12 months

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.3 Experiment Part B

Task description

In the following part of the study, we ask you make a series of decisions involving a choice between two lotteries, **Lottery A** and **Lottery B**. Both lotteries will be determined by a fair coin toss. That means that there is a 50% chance that it lands on heads, and a 50% chance that it lands on tails.

Before each lottery choice, you will receive information about the initial endowment in this decision. This initial endowment consists of two parts:

- A monetary payment **to you**
- A monetary payment **to Operation ASHA**. 100% of this amount will be used to save human lives.

After you have received information about the initial endowment, you can make your choice between **Lottery A** and **Lottery B**.

Please note:

- The lotteries will change the monetary payments to you and/or the organization. You will learn exactly how the initial endowments will change if, for example, you choose Lottery A and the coin toss lands on heads.
- **Thus, how the monetary payments to you and the organization change depends both on which lottery you choose and the result of the coin toss.** The coin toss will be carried out by the computer.

Payments in this part of the study

All monetary payments in this part of the study will be made by bank transfer. In the following decision-making scenarios, monetary payments are made either to you or to the organization *Operation ASHA*. If you are the recipient, a bank transfer to your account will be made today. If *Operation ASHA* is the recipient of the monetary payment, a bank transfer to the organization's account will be made today. As previously explained, 100% of the amount that is transferred to the organization's account will be used to save people from dying of tuberculosis.

In what follows, you will face a series of decision-making scenarios. One of these decision-making scenarios will be randomly selected by the computer at the end of this study. Your decision in *this* decision-making scenario will be implemented by a bank transfer at the end of this study. Your decisions in this part of the study thus determine *which* lottery is played at the end of this study.

Remember:

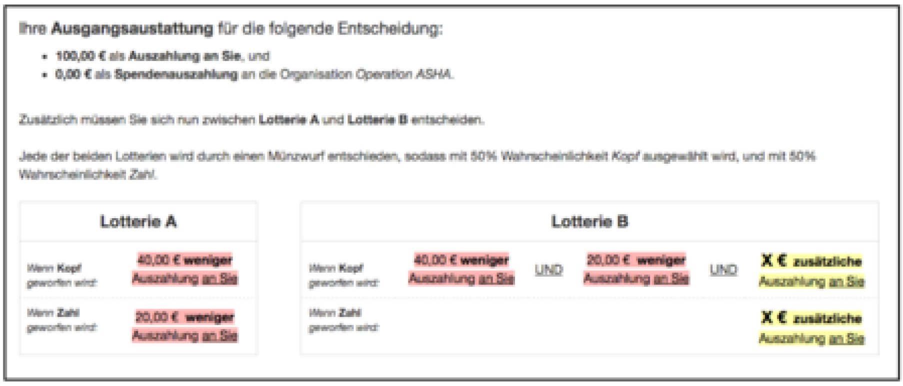
- Every decision-making scenario can be relevant for your monetary payment.
- Your decisions in this part determine both **to whom** the monetary payment will go and **at which date** the monetary payment will be made.
- All monetary payments will be made by bank transfer.

[**end of screen**]

Example

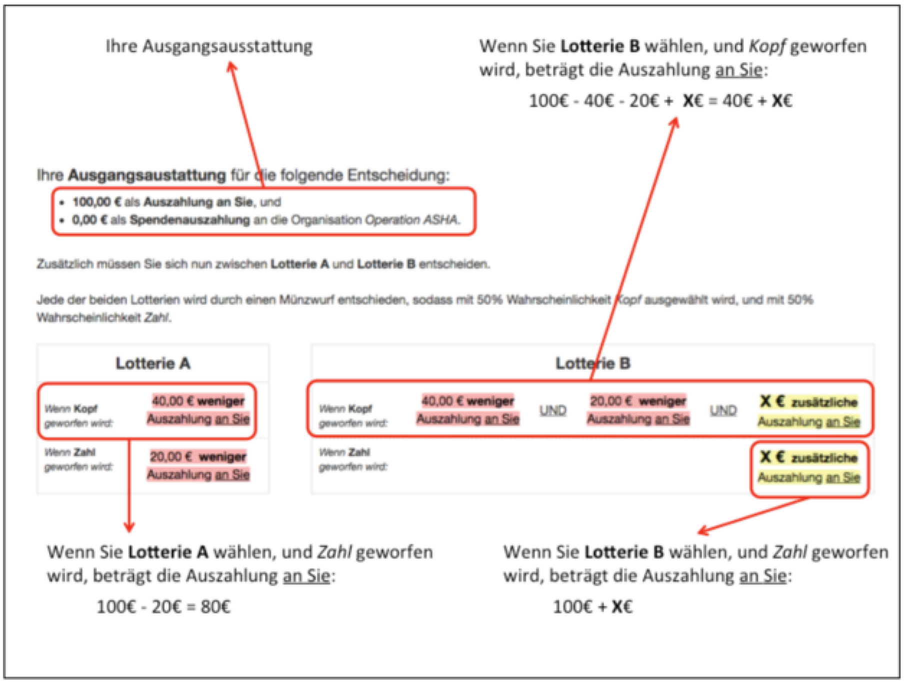
In the following decision-making scenarios, you can choose between **Lottery A** and **Lottery B**. On this page, we use an example to illustrate the choice between both lotteries.

In the following decision-making scenarios, you will see a page that looks like this:



On such a page, you will see information about the initial endowment, and how these endowments change depending on which lottery you choose and what the result of the coin toss is.

In the picture below, we explain the elements of this page in more detail:



In each decision-making scenario where you have to choose between **Lottery A** and **Lottery B**, we will show you an amount **X** €. The picture below illustrates what your decision would look like if $X = 10.00$ €. By selecting the left or right circle, you can choose between **Lottery A** and **Lottery B**.

To proceed click "Next".

[**end of screen**]

Exercise 1

On this and the following page, you can check whether you have correctly understood all the necessary information for this part of the study. For the first exercise, take a look at the following initial endowment:

> The initial endowment for the following scenario:
>
> - 25.00 € for you, and
> - a donation of 25.00 € to the organization Operation ASHA.
>
> In addition, you also have to choose between **Lottery A** and **Lottery B**.

Imagine that, given the initial endowment above, you had to make a decision between the following two lotteries:

- Lottery A:
  - If the coin toss is heads: the donation amount is reduced by 10.00 €.
  - If the coin toss is tails: the monetary payment to you is reduced by 10.00 €.
- Lottery B:
  - If the coin toss is heads: both the donation amount and the monetary payment to you are reduced by 10.00 €. You receive an additional **X** € as well.
  - If the coin toss is tails: you receive an additional **X** €.
  - $X = 2.00$ €

To test whether you have understood how your choice between Lottery A and Lottery B as well as how the outcome of the coin toss affects the monetary payments, please provide answers to the following questions:

- If I choose **Lottery A** and the coin toss is *heads*, the monetary amount that I will receive, including the initial endowment, is: [blank field] (in €)
- If I choose **Lottery B** and the coin toss is *heads*, the monetary amount that I will receive, including the initial endowment, is: [blank field] (in €)
- If I choose **Lottery B** and the coin toss is *heads*, the size of the donation, including the initial endowment, is: [blank field] (in €)
- If I choose **Lottery B** and the coin toss is *tails*, the monetary amount that I will receive, including the initial endowment, is: [blank field] (in €)

[**end of screen**]

Exercise 2

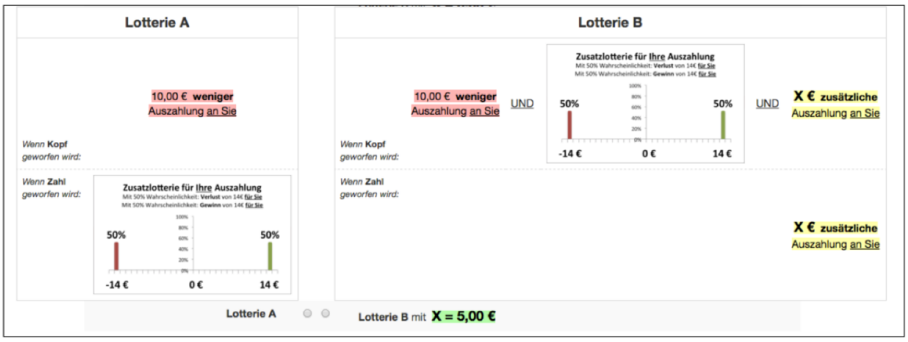
For the first exercise, take a look at the following initial endowment:

> The initial endowment for the following scenario:
>
> - 40.00 € for you, and
> - a donation of 0.00 € to the organization Operation ASHA.
>
> In addition, you also have to choose between **Lottery A** and **Lottery B**.

Some decisions involve a so-called **additional lottery**. Every additional lottery has a possible positive outcome (the monetary payment increases) and a possible negative outcome (the monetary payment decreases). The outcome of the **additional lottery** will also be randomly determined by the computer.

Note: Pay attention to the probabilities in the **additional lottery**.

Imagine that, given the initial endowment above, you had to make a decision between the following two lotteries:



- Lottery A:
  - If the coin toss is heads: the donation amount is reduced by 10.00 €.
  - If the coin toss is tails: There is an additional lottery for **your** monetary payment.
    * With a probability of 50%: You lose 14 €.
    * With a probability of 50%: You win 14 €.

- Lottery B:
  - If the coin toss is heads: the donation amount is reduced by 10.00 € AND you will receive an additional **X** € AND have an additional lottery for **your** monetary payment:
    * With a probability of 50%: You lose 14 €.
    * With a probability of 50%: You win 14 €.
  - If the coin toss is tails: you receive an additional **X** €.
  - $X = 5.00$ €

The additional lottery thus has a possible negative outcome of -14.00 € and a possible positive outcome of +14.00 €. Both outcomes are equally likely, that is, they both have a probability of 50%.

To test whether you have understood how your choice between Lottery A and Lottery B as well as how the outcome of the coin toss affects the monetary payments, please provide answers to the following questions:

- If I choose **Lottery A** and the coin toss is tails, then the outcome of the additional lottery is +14 €, and I will receive a monetary payment, including the initial endowment, of: [blank field] (in €)
- If I choose **Lottery B** and the coin toss is heads, then the outcome of the additional lottery is -14 €, and I will receive a monetary payment, including the initial endowment, of: [blank field] (in €)

[**end of screen**]

Your task begins on the next page

On the next page you will see the first decision-making scenario. From now on, the decisions you make are no longer an exercise, meaning that any of your following decisions and all related consequences could be implemented.

Remember:

- Every decision-making scenario can be relevant for your monetary payment.
- Your decisions in this part determine both **to whom** the monetary payment will go and **at which date** the monetary payment will be made.
- All monetary payments will be made by bank transfer.

To proceed click "Next".

F.3.1 RA–Self

The initial endowment for this decision is:

- 25.00 € for you, and
- a donation of 0.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

Both lotteries will be decided by a coin toss, which means that there is a 50% chance of heads and a 50% chance of tails.

[Description of the lotteries]

On the next page you will see a list where each row represents a different decision-making scenario between Lottery A and Lottery B. Each row indicates the value of **X** in that particular decision-making scenario. To proceed click "Next".

[end of screen]

Decision

The initial endowment for this decision is:

- 25.00 € for you, and
- a donation of 0.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

[Description of the lotteries]

Note: **X** € will be paid to you whenever you choose **Lottery B**, independently of whether the coin toss is heads or tails. Whether **X** is positive (a gain) or negative (a loss) depends on the decision-making scenario.

Lottery A ○	○ **Lottery B** with **X = -5.00** €
Lottery A ○	○ **Lottery B** with **X = -4.50** €
Lottery A ○	○ **Lottery B** with **X = -4.00** €
... ○	○ ...
Lottery A ○	○ **Lottery B** with **X = 4.00** €
Lottery A ○	○ **Lottery B** with **X = 4.50** €
Lottery A ○	○ **Lottery B** with **X = 5.00** €

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.3.2 RA–Charity

The initial endowment for this decision is:

- 0.00 € for you, and
- a donation of 25.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

Both lotteries will be decided by a coin toss, which means that there is a 50% chance of heads and a 50% chance of tails.

[Description of the lotteries]

On the next page you will see a list where each row represents a different decision-making scenario between Lottery A and Lottery B. Each row indicates the value of **X** in that particular decision-making scenario. To proceed click "Next".

[end of screen]

Decision

The initial endowment for this decision is:

- 0.00 € for you, and
- a donation of 25.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

[Description of the lotteries]

Note: **X** € will be paid to you whenever you choose **Lottery B**, independently of whether the coin toss is heads or tails. Whether **X** is positive (a gain) or negative (a loss) depends on the decision-making scenario.

Lottery A ○ ○ **Lottery B** with **X = -5.00** €
Lottery A ○ ○ **Lottery B** with **X = -4.50** €
Lottery A ○ ○ **Lottery B** with **X = -4.00** €
... ○ ○ ...
Lottery A ○ ○ **Lottery B** with **X = 4.00** €
Lottery A ○ ○ **Lottery B** with **X = 4.50** €
Lottery A ○ ○ **Lottery B** with **X = 5.00** €

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.3.3 X–RA

The initial endowment for this decision is:

- 25.00 € for you, and
- a donation of 25.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

Both lotteries will be decided by a coin toss, which means that there is a 50% chance of heads and a 50% chance of tails.

[Description of the lotteries]

On the next page you will see a list where each row represents a different decision-making scenario between Lottery A and Lottery B. Each row indicates the value of **X** in that particular decision-making scenario. To proceed click "Next".

[end of screen]

Decision

The initial endowment for this decision is:

- 25.00 € for you, and
- a donation of 25.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

[Description of the lotteries]

Note: **X** € will be paid to you whenever you choose **Lottery B**, independently of whether the coin toss is heads or tails. Whether **X** is positive (a gain) or negative (a loss) depends on the decision-making scenario.

Lottery A ○ ○ **Lottery B** with **X = -5.00** €
Lottery A ○ ○ **Lottery B** with **X = -4.50** €
Lottery A ○ ○ **Lottery B** with **X = -4.00** €
. . . ○ ○ . . .
Lottery A ○ ○ **Lottery B** with **X = 4.00** €
Lottery A ○ ○ **Lottery B** with **X = 4.50** €
Lottery A ○ ○ **Lottery B** with **X = 5.00** €

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.3.4 PR–Self

The initial endowment for this decision is:

- 40.00 € for you, and
- a donation of 0.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

Both lotteries will be decided by a coin toss, which means that there is a 50% chance of heads and a 50% chance of tails.

[Description of the lotteries]

This decision entails the possibility of an **additional lottery**. For example, if you choose Lottery A and the coin toss is tails, the additional lottery will be played. The outcome of the additional lottery will be determined by the computer.

On the next page you will see a list where each row represents a different decision-making scenario between Lottery A and Lottery B. Each row indicates the value of **X** in that particular decision-making scenario. To proceed click "Next".

[end of screen]

Decision

The initial endowment for this decision is:

- 40.00 € for you, and
- a donation of 0.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

[Description of the lotteries]

Note: **X** € will be paid to you whenever you choose **Lottery B**, independently of whether the coin toss is heads or tails. Whether **X** is positive (a gain) or negative (a loss) depends on the decision-making scenario.

Lottery A ○ ○ **Lottery B** with **X = -5.00** €
Lottery A ○ ○ **Lottery B** with **X = -4.50** €
Lottery A ○ ○ **Lottery B** with **X = -4.00** €
. . . ○ ○ . . .
Lottery A ○ ○ **Lottery B** with **X = 4.00** €
Lottery A ○ ○ **Lottery B** with **X = 4.50** €
Lottery A ○ ○ **Lottery B** with **X = 5.00** €

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]

F.3.5 PR–Charity

The initial endowment for this decision is:

- 0.00 € for you, and
- a donation of 40.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

Both lotteries will be decided by a coin toss, which means that there is a 50% chance of heads and a 50% chance of tails.

[Description of the lotteries]

This decision entails the possibility of an **additional lottery**. For example, if you choose Lottery A and the coin toss is tails, the additional lottery will be played. The outcome of the additional lottery will be determined by the computer.

On the next page you will see a list where each row represents a different decision-making scenario between Lottery A and Lottery B. Each row indicates the value of **X** in that particular decision-making scenario. To proceed click "Next".

[end of screen]

Decision

The initial endowment for this decision is:

- 0.00 € for you, and
- a donation of 40.00 € to the organization Operation ASHA.

In addition, you also have to choose between **Lottery A** and **Lottery B**.

[Description of the lotteries]

Note: **X** € will be paid to you whenever you choose **Lottery B**, independently of whether the coin toss is heads or tails. Whether **X** is positive (a gain) or negative (a loss) depends on the decision-making scenario.

Lottery A ○ ○ **Lottery B** with **X = -5.00** €
Lottery A ○ ○ **Lottery B** with **X = -4.50** €
Lottery A ○ ○ **Lottery B** with **X = -4.00** €
... ○ ○ ...
Lottery A ○ ○ **Lottery B** with **X = 4.00** €
Lottery A ○ ○ **Lottery B** with **X = 4.50** €
Lottery A ○ ○ **Lottery B** with **X = 5.00** €

Automatic completion: We have activated a fill-in aid that automatically fills out the remaining rows so you don't have to click as much.

[**end of screen**]