

# Time-Inconsistent Generosity: Present Bias across Individual and Social Contexts

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## Appendix for Online Publication

### A Additional Tables and Figures

	% non-monotonic choices	% blocks with monotonicity violations	% fully consistent subjects	Median (Mean) degree of monotonicity violation	
				if > 0	Total
SOONSOON	8.5	27.5	56.3	3 (3.4)	0 (0.9)
LATELATE	7.2	23.2	63.4	2 (2.8)	0 (0.7)
SOONLATE	8.5	27.5	60.6	2 (3.4)	0 (0.9)
LATESOON	10.1	32.4	54.9	2 (3.3)	0 (1.1)
SELF	8.0	27.5	60.0	2 (2.9)	0 (0.8)
<i>Selfish</i>	5.8	24.2	64.5	2 (2.7)	0 (0.7)
<i>Non-selfish</i>	9.0	29.0	58.0	1.5 (3.0)	0 (0.9)
OTHER	9.8	27.6	64.3	4 (18.9)	0 (5.2)
<i>Selfish</i>	15.5	41.4	51.7	5 (36.1)	0 (14.9)
<i>Non-selfish</i>	7.4	21.7	69.6	3 (5.0)	0 (1.1)

*Note:* The degree of monotonicity violation is measured as the absolute number of tasks that need to be reallocated to restore monotonicity within a block. We classify people as *selfish* if, in at least one week, they allocate zero tasks to themselves in all dictator game decisions, and as *non-selfish* otherwise.

Table A1: Monotonicity violations

	(1) FOC $\omega = 10$	(2) CFS $\omega = 10$	(3) CFS $\omega = 0$
$\sigma = \frac{1}{\rho-1}$	0.081 (0.086)	0.015 (0.075)	0.203 (0.124)
$A_2 = \left(\frac{1-a_2}{a_2}\right)^{\frac{1}{\rho-1}}$	0.491 (0.038)	0.514 (0.038)	0.369 (0.046)
$A_3 = \left(\frac{1-a_3}{a_3}\right)^{\frac{1}{\rho-1}}$	0.417 (0.041)	0.436 (0.042)	0.284 (0.045)
$\tilde{\delta}$	0.965 (0.039)	0.952 (0.036)	0.930 (0.046)
$\tilde{\beta}$	0.873 (0.046)	0.877 (0.046)	0.843 (0.058)
Observations	1704	1704	1704
Cluster	71	71	71
$H_o(\hat{\delta} = 1)$	$p = 0.366$	$p = 0.187$	$p = 0.134$
$H_o(\hat{\beta} = 1)$	$p = 0.006$	$p = 0.007$	$p = 0.007$

*Note:* The table reports the parameter estimates for the symmetric dictator games under the alternative assumption that the relative weight of own vs. other's effort,  $a$ , is allowed to differ across weeks.  $a_2$  ( $a_3$ ) refers to effort exerted in week 2 (3). Column (1) uses the log-linearized first order condition, while columns (2) and (3) use the closed form solution for the number of tasks allocated to oneself. Standard errors are clustered at the individual level and calculated via the delta method.

Table A2: Parameter estimates for blocks SOONSOON and LATELATE with varying  $A$  across weeks.

	(1) FOC $\omega = 10$	(2) CFS $\omega = 10$	(3) CFS $\omega = 0$
$\gamma$	2.555 (0.416)	3.078 (0.666)	2.369 (0.458)
$\delta_s$	1.052 (0.081)	1.063 (0.100)	1.036 (0.094)
$\beta_s$	0.850 (0.064)	0.813 (0.083)	0.819 (0.082)
$\delta_o$	0.956 (0.050)	0.946 (0.062)	0.925 (0.058)
$\beta_o$	0.982 (0.054)	0.977 (0.066)	0.983 (0.063)
Observations	1608	1608	1608
Cluster	67	67	67
$H_o(\hat{\beta}_s = 1)$	$p = 0.020$	$p = 0.024$	$p = 0.027$
$H_o(\hat{\beta}_o = 1)$	$p = 0.738$	$p = 0.724$	$p = 0.788$
$H_o(\hat{\beta}_s = \hat{\beta}_o)$	$p = 0.061$	$p = 0.072$	$p = 0.067$

*Note:* The table reports the parameter estimates for the choices made in blocks SELF and OTHER under the restriction that  $\gamma_s = \gamma_o = \gamma$ , using the subsample of subjects that are also included in the interpersonal choices. Column (1) uses the log-linearized first order condition, while the columns (2) and (3) use the closed form solution for the number of tasks allocated to the sooner date. Standard errors are clustered at the individual level and calculated via the delta method.

Table A3: Parameter estimates for blocks SELF and OTHER (combined), excluding types with too little variation in interpersonal choices.

## B Details of the Structural Estimation

### B.1 Interpersonal Decisions, FOC Approach

The first approach to structurally estimate the parameters of the agent's utility function for the symmetric dictator games is based on the log-linearized first-order condition (??), which can be re-written as:

$$\ln \left( \frac{s_{t,\tau} + \omega}{o_{t,\tau} + \omega} \right) = \ln(A) - \sigma \ln(R) - (\sigma + 1) \left[ \ln(\tilde{\beta}\tilde{\delta}) \mathbf{1}\{t - \tau > 0\} + \ln(\tilde{\delta}) \mathbf{1}\{t - \tau = 2\} \right]$$

We then set up the regression equation implied by this expression, assuming an additive error structure.

$$\ln \left( \frac{s_{t,\tau} + \omega}{o_{t,\tau} + \omega} \right)_i = \lambda_0 + \lambda_1 D1_i + \lambda_2 D2_i + \lambda_3 \ln(R)_i + \varepsilon_i \quad (\text{B.1})$$

where

$$D1_i = \begin{cases} 1 & \text{if } t - \tau > 0 \\ 0 & \text{otherwise} \end{cases} \quad D2_i = \begin{cases} 1 & \text{if } t - \tau = 2 \\ 0 & \text{otherwise} \end{cases}$$

We then estimate equation (B.1) via a two-limit tobit regression, in order to account for corner solutions at  $s_{t,\tau} = 0$  and  $o_{t,\tau} = 0$ . As discussed in the main text, we set the background consumption  $\omega = 10$ . The estimates for the parameters of interest can be recovered from the coefficients as:

$$\hat{A} = \exp(\hat{\lambda}_0) \quad \hat{\tilde{\delta}} = \exp\left(\frac{-\hat{\lambda}_2}{-\hat{\lambda}_3 + 1}\right) \quad \hat{\tilde{\beta}} = \frac{\exp\left(\frac{-\hat{\lambda}_1}{-\hat{\lambda}_3 + 1}\right)}{\exp\left(\frac{-\hat{\lambda}_2}{-\hat{\lambda}_3 + 1}\right)} \quad \hat{\sigma} = -\hat{\lambda}_3$$

We use the delta-method to calculate the appropriate standard errors. The discounting parameters are identified via the variation in the time of decision ( $\tau$ ) and the time when work needs to be completed ( $t$ ). When comparing decisions made one week in advance (block SOONSOON in week 1 and block LATELATE in week 2) with decisions made without delay (block SOONSOON in week 2), we identify  $\tilde{\beta}\tilde{\delta}$ . The additional variation from decisions made with a delay of two weeks (block LATELATE in week 1) identifies  $\tilde{\delta}$ . From this we obtain the values for  $\tilde{\beta}$  and  $\tilde{\delta}$  as shown above.

For the combined estimation using all dictator game data, it is helpful to first separately

write down the first-order condition for each block:

Block SOONSOON:

$$\ln \left( \frac{s_{2,\tau} + \omega}{o_{2,\tau} + \omega} \right) = \ln(A) - \sigma \ln(R) + (\sigma + 1) \left[ \ln \left( \frac{\beta_s \delta_s}{\beta_o \delta_o} \right) \mathbf{1}\{\tau = 1\} \right]$$

Block LATELATE:

$$\ln \left( \frac{s_{3,\tau} + \omega}{o_{3,\tau} + \omega} \right) = \ln(A) - \sigma \ln(R) + (\sigma + 1) \left[ \ln \left( \frac{\beta_s \delta_s^2}{\beta_o \delta_o^2} \right) \mathbf{1}\{\tau = 1\} + \ln \left( \frac{\beta_s \delta_s}{\beta_o \delta_o} \right) \mathbf{1}\{\tau = 2\} \right]$$

Block SOONLATE:

$$\ln \left( \frac{s_{2,\tau} + \omega}{o_{3,\tau} + \omega} \right) = \ln(A) - \sigma \ln(R) + (\sigma + 1) \left[ \ln \left( \frac{\beta_s \delta_s}{\beta_o \delta_o^2} \right) \mathbf{1}\{\tau = 1\} + \ln \left( \frac{1}{\beta_o \delta_o} \right) \mathbf{1}\{\tau = 2\} \right]$$

Block LATESOON:

$$\ln \left( \frac{s_{3,\tau} + \omega}{o_{2,\tau} + \omega} \right) = \ln(A) - \sigma \ln(R) + (\sigma + 1) \left[ \ln \left( \frac{\beta_s \delta_s^2}{\beta_o \delta_o} \right) \mathbf{1}\{\tau = 1\} + \ln \left( \frac{\beta_s \delta_s}{1} \right) \mathbf{1}\{\tau = 2\} \right]$$

We then set up the following regression equation:

$$\ln \left( \frac{s + \omega}{o + \omega} \right)_i = \lambda_0 + \lambda_1 D1_i + \lambda_2 D2_i + \lambda_3 D3_i + \lambda_4 D4_i + \lambda_5 D5_i + \lambda_6 D6_i + \lambda_7 \ln(R)_i + \varepsilon_i \quad (\text{B.2})$$

where

$$\begin{aligned} D1_i &= \begin{cases} 1 & \text{if } \tau = 1 \text{ \& Block SOONSOON} \\ 1 & \text{if } \tau = 2 \text{ \& Block LATELATE} \\ 0 & \text{otherwise} \end{cases} & D2_i &= \begin{cases} 1 & \text{if } \tau = 1 \text{ \& Block LATELATE} \\ 0 & \text{otherwise} \end{cases} \\ D3_i &= \begin{cases} 1 & \text{if } \tau = 1 \text{ \& Block SOONLATE} \\ 0 & \text{otherwise} \end{cases} & D4_i &= \begin{cases} 1 & \text{if } \tau = 1 \text{ \& Block LATESOON} \\ 0 & \text{otherwise} \end{cases} \\ D5_i &= \begin{cases} 1 & \text{if } \tau = 2 \text{ \& Block SOONLATE} \\ 0 & \text{otherwise} \end{cases} & D6_i &= \begin{cases} 1 & \text{if } \tau = 2 \text{ \& Block LATESOON} \\ 0 & \text{otherwise} \end{cases} \end{aligned}$$

If we were to estimate (B.2) like this, we would have 8 estimates to identify 6 parameters, and hence the model would be overidentified. We thus impose two linear constraints as to make the model just identified. These constraints can be written as:

$$\lambda_2 - \lambda_4 = \lambda_3 - \lambda_5 - \lambda_6 \quad \lambda_3 - \lambda_2 = \lambda_1 - \lambda_4$$

We then estimate equation (B.2) via a two-limit tobit regression in the same way as before, again setting  $\omega = 10$ . The estimates for the parameters of interest can be recovered from the coefficients as:

$$\begin{aligned}\hat{A} &= \exp(\hat{\lambda}_0) & \hat{\beta}_s &= \exp\left(\frac{\hat{\lambda}_2 - \hat{\lambda}_1 - \hat{\lambda}_3 + \hat{\lambda}_5}{-\hat{\lambda}_7 + 1}\right) & \hat{\delta}_s &= \exp\left(\frac{\hat{\lambda}_3 - \hat{\lambda}_2}{-\hat{\lambda}_7 + 1}\right) \\ \hat{\beta}_o &= \exp\left(\frac{\hat{\lambda}_1 - \hat{\lambda}_2 + \hat{\lambda}_4 - \hat{\lambda}_6}{-\hat{\lambda}_7 + 1}\right) & \hat{\delta}_o &= \exp\left(\frac{\hat{\lambda}_2 - \hat{\lambda}_4}{-\hat{\lambda}_7 + 1}\right) & \hat{\sigma} &= -\hat{\lambda}_3\end{aligned}$$

## B.2 Interpersonal Decisions, CFS Approach

The second approach to structurally estimate the parameters of the agent's utility function is based on the closed form solution for  $s_{t,\tau}$  as in (??), which we can also write as:

$$\tilde{s}(B, \tau) = \frac{R^{-\sigma-1}Z(B, \tau) + \omega(R^{-\sigma}Z(B, \tau) - A^{-1})}{A^{-1} + R^{-\sigma-1}Z(B, \tau)} \equiv g(\omega, R, B, \tau; A, \sigma, \beta_s, \delta_s, \beta_o, \delta_o) \quad (\text{B.3})$$

Here,  $\tilde{s}(B, \tau)$  denotes the number of tasks,  $s_{t,\tau}$ , divided by the total budget  $m$ . We use  $B \in \{1, 2, 3, 4\}$  to distinguish the four different blocks, as described in Table ???.  $Z(B, \tau)$  is a “discounting function” which takes on different values depending on the block  $B$  and the week  $\tau$  in which the decision was made. These values can be taken directly from the first-order conditions as presented in the text. When estimating  $\tilde{\beta}$  and  $\tilde{\delta}$  based on the symmetric dictator games,  $Z(B, \tau)$  is given by:

$$Z(B, \tau) = \begin{cases} 1 & \text{if } B = 1 \text{ and } \tau = 2 \\ \left(\tilde{\beta}\tilde{\delta}\right)^{\sigma+1} & \text{if } B = 1 \text{ and } \tau = 1 \\ \left(\tilde{\beta}\tilde{\delta}\right)^{\sigma+1} & \text{if } B = 2 \text{ and } \tau = 2 \\ \left(\tilde{\beta}\tilde{\delta}^2\right)^{\sigma+1} & \text{if } B = 2 \text{ and } \tau = 1 \end{cases}$$

When using all dictator games and estimating all four time preference parameters,  $Z(B, \tau)$  is given by:

$$Z(B, \tau) = \begin{cases} 1 & \text{if } B = 1 \text{ and } \tau = 2 \\ \left(\frac{\beta_o \delta_o}{\beta_s \delta_s}\right)^{-\sigma-1} & \text{if } B = 1 \text{ and } \tau = 1 \\ \left(\frac{\beta_o \delta_o}{\beta_s \delta_s}\right)^{-\sigma-1} & \text{if } B = 2 \text{ and } \tau = 2 \\ \left(\frac{\beta_o \delta_o^2}{\beta_s \delta_s^2}\right)^{-\sigma-1} & \text{if } B = 2 \text{ and } \tau = 1 \\ \left(\frac{\beta_o \delta_o^2}{\beta_s \delta_s}\right)^{-\sigma-1} & \text{if } B = 3 \text{ and } \tau = 1 \\ \left(\beta_o \delta_o\right)^{-\sigma-1} & \text{if } B = 3 \text{ and } \tau = 2 \\ \left(\frac{\beta_o \delta_o}{\beta_s \delta_s^2}\right)^{-\sigma-1} & \text{if } B = 4 \text{ and } \tau = 1 \\ \left(\frac{1}{\beta_s \delta_s}\right)^{-\sigma-1} & \text{if } B = 4 \text{ and } \tau = 2 \end{cases}$$

Assuming normally distributed decision errors,  $\varepsilon$ , i.e.,  $\tilde{s}^i(B, \tau) = g_i(\boldsymbol{\theta}) + \varepsilon_i$ , and taking into account the presence of corner solutions, we can define the likelihood contribution for decision  $i$  as

$$L_i = \left[ \Phi \left( \frac{0 - g_i(\boldsymbol{\theta})}{\sigma} \right) \right]^{1\{\tilde{s}^i=0\}} \left[ \phi \left( \frac{\tilde{s}_{t,\tau}^i - g_i(\boldsymbol{\theta})}{\sigma} \right) \right]^{1\{0 < \tilde{s}^i < 1\}} \left[ \Phi \left( \frac{1 - g_i(\boldsymbol{\theta})}{\sigma} \right) \right]^{1\{\tilde{s}^i=1\}} \quad (\text{B.4})$$

which we use for standard maximum-likelihood estimation via STATA. We present parameter estimates for two different values of background consumption,  $\omega = 0$  and  $\omega = 10$ .

### B.3 Intrapersonal Decisions, FOC Approach

For blocks SELF and OTHER, the econometric specification proceeds along very similar lines as for the dictator games. The log-linearized version of the first-order condition for block SELF can be written as

$$\ln \left( \frac{s_{t,\tau} + \omega}{s_{t+1,\tau} + \omega} \right) = \frac{\ln(\delta_s)}{\gamma_s - 1} + \frac{\ln(\beta_s)}{\gamma_s - 1} \mathbf{1}\{t = \tau\} - \frac{1}{\gamma_s - 1} \ln(R) \quad (\text{B.5})$$

Again assuming that choices are made with an additive error  $\varepsilon$  which is normally distributed with mean zero, we can estimate the parameters of interest via a two-limit Tobit model using the following regression equation:

$$\ln \left( \frac{s_{2,\tau} + \omega}{s_{3,\tau} + \omega} \right)_i = \lambda_0 + \lambda_1 D_i + \lambda_2 \ln(R)_i + \varepsilon_i \quad (\text{B.6})$$

where

$$D = \begin{cases} 1 & \text{if } \tau = 2 \\ 0 & \text{otherwise} \end{cases}$$

Identification of the three parameters is obtained as follows: variation in the rate  $R$  which denotes how “costly” it is for oneself to complete a task later rather than sooner, identifies the curvature parameter  $\gamma_s$ . Since each subject faces the same decision problems in  $\tau = 1$  and  $\tau = 2$ , variation in  $\tau$  (captured via  $D$ ) identifies the present bias parameter  $\beta_s$ . The standard exponential discounting parameter  $\delta_s$  is then recovered via the constant. The estimates for the parameters of interest can then be calculated as follows:

$$\hat{\gamma}_s = -\frac{1}{\hat{\lambda}_2} + 1 \quad \hat{\delta}_s = \exp\left(\frac{-\hat{\lambda}_0}{\hat{\lambda}_2}\right) \quad \hat{\beta}_s = \exp\left(\frac{-\hat{\lambda}_1}{\hat{\lambda}_2}\right)$$

We use the delta-method to calculate the appropriate standard errors. For block OTHER, we follow the exact same procedures to obtain estimates for  $\gamma_o, \beta_o, \delta_o$ , and we thus refrain from repeating this here. In the case where we jointly estimate the time preference parameters using the data from both blocks (Table ??), the regression equation is given by:

$$\ln\left(\frac{c_{2,\tau} + \omega}{c_{3,\tau} + \omega}\right)_i = \lambda_{0,s}CS_i + \lambda_{0,o}CO_i + \lambda_{1,s}DS_i + \lambda_{1,o}DO_i + \lambda_2 \ln(R)_i + \varepsilon_i \quad (\text{B.7})$$

where

$$CS = \begin{cases} 1 & \text{if block SELF} \\ 0 & \text{otherwise} \end{cases} \quad CO = \begin{cases} 1 & \text{if block OTHER} \\ 0 & \text{otherwise} \end{cases}$$

$$DS = \begin{cases} 1 & \text{if block SELF and } \tau = 2 \\ 0 & \text{otherwise} \end{cases} \quad DO = \begin{cases} 1 & \text{if block OTHER and } \tau = 2 \\ 0 & \text{otherwise} \end{cases}$$

and  $c_{t,\tau} \in \{s_{t,\tau}, o_{t,\tau}\}$ . The parameters of interest can then be recovered as:

$$\hat{\gamma} = -\frac{1}{\hat{\lambda}_2} + 1 \quad \hat{\delta}_s = \exp\left(\frac{-\hat{\lambda}_{0,s}}{\hat{\lambda}_2}\right) \quad \hat{\beta}_s = \exp\left(\frac{-\hat{\lambda}_{1,s}}{\hat{\lambda}_2}\right) \quad \hat{\delta}_o = \exp\left(\frac{-\hat{\lambda}_{0,o}}{\hat{\lambda}_2}\right) \quad \hat{\beta}_o = \exp\left(\frac{-\hat{\lambda}_{1,o}}{\hat{\lambda}_2}\right)$$

#### B.4 Intrapersonal Decisions, CFS Approach

In this case, we use the closed form solution for  $\tilde{s}_{2,\tau}$ , the ratio of the number of tasks allocated to the sooner date (week 2) divided by  $m = 50$ :

$$\tilde{s}_{2,\tau} = \frac{R^{-\frac{\gamma_s}{\gamma_s-1}} \left[ \beta_s^{\mathbf{1}\{\tau=2\}} \delta_s \right]^{\frac{1}{\gamma_s-1}} + \omega \left( R^{-\frac{1}{\gamma_s-1}} \left[ \beta_s^{\mathbf{1}\{\tau=2\}} \delta_s \right]^{\frac{1}{\gamma_s-1}} - 1 \right)}{1 + R^{-\frac{\gamma_s}{\gamma_s-1}} \left[ \beta_s^{\mathbf{1}\{\tau=2\}} \delta_s \right]^{\frac{1}{\gamma_s-1}}} \equiv g(\omega, R, \tau; \gamma_s, \beta_s, \delta_s) \quad (\text{B.8})$$

and the corresponding likelihood contribution by observation  $i$ , assuming normally distributed decision errors, is given by:

$$L_i = \left[ \Phi \left( \frac{0 - g_i(\boldsymbol{\theta})}{\sigma} \right) \right]^{\mathbf{1}\{\tilde{s}^i=0\}} \left[ \phi \left( \frac{\tilde{s}_{t,\tau}^i - g_i(\boldsymbol{\theta})}{\sigma} \right) \right]^{\mathbf{1}\{0 < \tilde{s}^i < 1\}} \left[ \Phi \left( \frac{1 - g_i(\boldsymbol{\theta})}{\sigma} \right) \right]^{\mathbf{1}\{\tilde{s}^i=1\}}$$

For block OTHER, we proceed analogously. For the joint estimation using the data from both blocks, we base the maximum-likelihood estimation on the following expression for  $\tilde{c}_{2,\tau} \in \{\tilde{s}_{2,\tau}, \tilde{o}_{2,\tau}\}$ :

$$\tilde{c}_{2,\tau} = \frac{R^{-\frac{\gamma}{\gamma-1}} Z(B) + \omega \left( R^{-\frac{1}{\gamma-1}} Z(B) - 1 \right)}{1 + R^{-\frac{\gamma}{\gamma-1}} Z(B)} \equiv g(\omega, R, \tau; \gamma, \beta_s, \delta_s, \beta_o, \delta_o) \quad (\text{B.9})$$

where:

$$Z(B) = \begin{cases} \left( \beta_s^{\mathbf{1}\{t=\tau\}} \delta_s \right)^{\frac{1}{\gamma-1}} & \text{if } B = 5 \quad (\text{SELF}) \\ \left( \beta_o^{\mathbf{1}\{t=\tau\}} \delta_o \right)^{\frac{1}{\gamma-1}} & \text{if } B = 6 \quad (\text{OTHER}) \end{cases}$$

## C Individual-level Analysis

For the estimation of the parameters at an individual level, we use, as described in the main text, the approach based on the closed form solutions. More precisely, for the dictator game data, we estimate equation (B.3) separately for each individual, and for the data from the intrapersonal blocks we use equation (B.9). In both cases we set  $\omega = 10$ .

From the derivations of the first-order conditions, it becomes clear that for an interior solution to exist, the parameters  $\rho$  and  $\gamma$  cannot be less than one. While this poses no major problem for the aggregate analysis as these restrictions are almost always met (the one exception being the estimate for  $\sigma$  in Table ?? which is below, but not statistically different from, zero), we want to avoid this for the estimation at the individual level. Therefore, for the intrapersonal choices, we replace  $\gamma$  by  $\exp\{\tilde{\gamma}\} + 1$ . For the interpersonal choices, where the estimation is based on  $\sigma = \frac{1}{\rho-1}$ , the restriction  $\rho \geq 1$  corresponds to  $\sigma \geq 0$ , and hence we replace  $\sigma$  by  $\exp\{\tilde{\sigma}\}$ .

For the individual-level estimation, it is necessary to specify different sets of initial values for different subjects in order to obtain parametric estimates for as many subjects as possible. We always re-estimate the parameters for all individuals when using a different set of starting values to ensure that the estimates are not driven by the specific values chosen. In all but four cases (all in the interpersonal decisions), conditional on the estimation converging, we obtain exactly the same estimates. In the remaining cases, we choose the estimates for which the log-likelihood is largest.

In addition, we “manually” check the data for all subjects where we do not obtain convergence. With one exception, the behavior can be rationalized with our model. As mentioned in the main text in footnote ??, for one subject in the interpersonal decisions and two subjects in the intrapersonal decisions, we can directly determine that  $\beta_s = \beta_o = 1$ . This is because there is no variation across weeks, hence behavior shows neither a future nor a present bias. The estimation does not converge because these subjects always choose the cheaper account to allocate the tasks to, i.e.,  $X = 0$  if  $R < 1$  and  $X = 50$  if  $R > 1$  and  $X = 25$  if  $R = 1$ . We include these subjects in our individual-level analysis in the main text. One subject in the intrapersonal choices shows behavior that cannot be rationalized with our model, due to a combination of insufficient variation in some blocks and too many monotonicity violations in the other. For the remaining subjects, we can obtain bounds on  $\beta_s$  and  $\beta_o$ , i.e., whether they are (weakly) larger or smaller than one, but no point identification is possible. Therefore, these subjects do not appear in our individual-level analysis.

In Tables C1 to C4, we report the estimated parameters for each subject. These tables also contain entries for those subjects for whom we only obtain bounds on  $\beta_s$  and  $\beta_o$ .

id	$A$	$\sigma$	$\delta_s$	$\beta_s$	$\delta_o$	$\beta_o$
101	0.456	$3.60 \times 10^{-8}$	1.023	1.028	1.141	0.854
103	0.144	1.618063	0.967	0.959	1.021	0.958
105	0.767	$7.43 \times 10^{-9}$	0.982	0.875	1.049	0.908
108	0.604	$1.33 \times 10^{-12}$	0.929	1.018	1.019	1.142
111	0.992	0.298	1.083	0.943	1.074	0.912
113	0.403	$1.33 \times 10^{-9}$	0.778	1.132	0.825	1.446
114	0.756	$5.58 \times 10^{-8}$	0.831	1.365	0.971	1.118
115	0.736	$3.71 \times 10^{-28}$	1.002	0.99	0.873	1.155
117	0.928	0	1.327	0.748	1.022	1.167
119	0.333	$3.17 \times 10^{-8}$	0.945	0.997	1.058	1.004
122	0.336	0.574	1	1	1	1
125	0.792	$2.10 \times 10^{-9}$	0.996	0.899	0.944	0.994
126	1.016	0.136	1.065	0.944	1.018	0.971
127	1.009	$7.18 \times 10^{-9}$	1.001	1.001	0.979	1.019
129	0.315	$1.14 \times 10^{-8}$	1.163	0.8	0.86	0.931
130	0.257	$6.29 \times 10^{-9}$	1.026	0.847	1.173	0.945
202 <sup>+</sup>	0.597	0.161	12.627	0.072	0.079	13.452
203	1.006	0.093	1.686	0.674	1.425	0.742
205	0.974	0.004	1.006	0.995	1.004	0.995
208	0.987	0	0.954	0.987	1.082	0.963
209	0.658	$5.28 \times 10^{-10}$	1.263	0.857	1.204	0.873
210	0.507	0.220	0.999	0.989	1.165	0.87
211 <sup>+</sup>	0.558	$1.94 \times 10^{-9}$	1.786	0.628	0.532	2.429
214*				j1		
212	0.983	0.123	1.014	0.964	1.023	1
215	0.998	0.007	0.999	1	0.993	1.008
216	0.992	$2.32 \times 10^{-8}$	1.002	0.995	0.998	1.005
217	0.39	$2.86 \times 10^{-10}$	1.046	0.998	0.956	1.002
221	0.382	$7.63 \times 10^{-8}$	0.95	0.739	0.995	1.176
222	0.964	$1.70 \times 10^{-5}$	1	0.991	1	1
223	0.94	0.016	1.025	0.875	1.015	0.936
224	0.97	$3.72 \times 10^{-9}$	1.018	0.94	0.962	1.077
228	0.437	$1.34 \times 10^{-8}$	0.903	1.012	0.985	1.055

*Note:* The table reports the individual parameter estimates from the intrapersonal choices. IDs with (\*) denote cases where we infer (bounds on) the values directly from the data without estimation. IDs with + denote cases which are excluded based on a Grubb's outlier test. See footnote ??.

Table C1: Individual parameter estimates from interpersonal choices (id 101-230)

id	$A$	$\sigma$	$\delta_s$	$\beta_s$	$\delta_o$	$\beta_o$
301	0.152	$6.54 \times 10^{-21}$	0.687	0.952	1.42	1.362
304	0.257	0.175	0.983	0.979	1.08	0.867
305	0.687	0.520	0.982	1.02	1.077	0.983
306	0.919	0	0.811	1.065	1.06	0.923
308	0.382	0.191	1.041	0.845	0.998	1.263
309	1.032	0.044	0.955	1.075	0.975	0.99
312	0.234	$2.23 \times 10^{-8}$	1.025	0.917	1.033	1.061
315	1.062	$5.51 \times 10^{-9}$	1.787	0.849	2.303	0.244
316	0.369	$9.66 \times 10^{-9}$	0.733	1.145	0.858	1.552
317 <sup>+</sup>	0.248	0.299	5803.466	0	0	10468.75
320	0.107	1.856	0.979	0.916	0.971	1.094
323	0.322	$4.59 \times 10^{-8}$	0.966	1.049	1.005	1.008
324	0.217	$1.46 \times 10^{-8}$	0.985	1.011	1.154	0.879
326	0.382	1.170	0.962	1.032	0.933	1.08
327	0.337	0.665	0.897	1.052	1.069	1.039
329	0.909	$3.70 \times 10^{-9}$	0.957	1.133	0.964	1.018
330	0.239	$1.39 \times 10^{-18}$	0.761	1.028	1.293	1.009
403	0.098	1.014	0.943	1.113	1.06	1.125
404*		1	1	1	1	1
405	1.12	$1.21 \times 10^{-19}$	1.096	0.802	1.077	0.858
406	0.358	$2.48 \times 10^{-8}$	1.967	0.612	0.928	1.06
408	0.469	$4.37 \times 10^{-9}$	0.879	0.743	1.068	0.984
410	1.009	$1.93 \times 10^{-12}$	0.97	1.042	1	0.987
411	0.359	$2.22 \times 10^{-9}$	0.837	1.136	0.716	1.444
413	0.273	0.537	0.885	1.031	1.074	1.021
415	0.729	$2.33 \times 10^{-9}$	0.963	0.946	0.99	1.177
417	0.55	$1.80 \times 10^{-9}$	1.133	0.8	1.083	1.025
418	0.581	$3.33 \times 10^{-18}$	0.893	1.247	1.263	0.834
419	0.181	0.058	0.909	0.658	1.422	0.507
420	0.197	0.407	1.377	0.859	0.726	1.164
421	0.995	$5.67 \times 10^{-11}$	1.005	0.991	1.005	0.991
422	0.907	$1.34 \times 10^{-7}$	1.967	0.641	1.032	1.171
423	0.392	1.096	1.023	0.816	0.996	1.089
424	0.523	0.488	1.244	0.85	1.084	0.918
425	0.184	0.668	0.941	1.293	1.062	0.773
426	0.191	$2.78 \times 10^{-15}$	0.979	0.997	0.943	1.045
427	0.497	0.410	1.051	0.913	0.997	0.997

*Note:* The table reports the individual parameter estimates from the intrapersonal choices. IDs with (\*) denote cases where we infer (bounds on) the values directly from the data without estimation. IDs with + denote cases which are excluded based on a Grubb's outlier test. See footnote ??.

Table C2: Individual parameter estimates from interpersonal choices (id 301-430)

id	$\gamma$	$\delta_s$	$\beta_s$	$\delta_o$	$\beta_o$
101	3.075	1.112	0.884	1.19	0.952
102	18.809	1.212	1.46	0.873	0.911
104	1.022	1	0.498	1	0.493
105	$5.89 \times 10^8$	1.035	1.04	1.014	1
106	$1.10 \times 10^8$	0.556	0.75	0.407	0.8
107	1.152	1	0.996	1	0.992
108	247.909	0.807	0.613	0.825	0.668
110	2.09	0.936	0.825	1.101	1.034
111	1.221	1	0.95	1.029	0.996
112	$7.53 \times 10^7$	1.08	0.949	0.878	0.861
113	$1.41 \times 10^{14}$	0.828	0.782	0.727	0.752
114	$1.35 \times 10^8$	1.443	1.301	1.799	1.761
115	$2.91 \times 10^8$	1.007	1.02	0.976	0.979
116	$1.68 \times 10^7$	0.997	0.99	0.998	1
117	$2.76 \times 10^7$	0.631	0.842	0.971	1
119	1.358	0.888	0.841	0.888	0.841
121	1.837	1.34	0.885	0.959	0.892
122	17.054	1.003	1	1.003	1
123	$1.20 \times 10^{10}$	0.974	0.881	1.016	0.979
125	16.091	0.897	1.02	0.789	0.947
126	22.405	1.002	1	0.956	0.955
127	$4.73 \times 10^8$	1.049	1.073	1.028	1.052
129	1.269	0.995	0.853	0.956	0.879
130	1.264	0.989	1.077	0.997	1.009
202	$1.52 \times 10^8$	0.911	0.943	0.975	1.334
203	$1.19 \times 10^8$	0.637	1.103	0.632	1.083
204	1.57	1.081	0.964	0.908	1.031
205	196.712	1.027	1	1.027	1
206	$5.67 \times 10^7$	0.987	1.007	0.976	0.988
208	15.604	0.778	0.799	0.783	0.813
209	$1.02 \times 10^8$	0.647	0.867	0.98	0.993
210	$8.46 \times 10^8$	0.518	0.849	0.568	0.581
211 <sup>+</sup>	$1.83 \times 10^7$	1.326	1.914	5.812	5.191
212*			1		1
213	1.183	1.017	1.021	1.017	0.956
215	$3.52 \times 10^8$	1.007	1.01	0.987	0.989
216	3.461	1.058	1.09	1.097	0.848
217	$2.94 \times 10^9$	1.049	0.401	0.998	0.915
218*			$\leq 1$		1
220*			$\geq 1$		$\geq 1$
221	1.552	0.838	0.786	0.981	1.133
222	$2.22 \times 10^8$	0.967	0.989	0.986	0.979
223	19.119	0.901	0.784	0.992	0.991
224	$3.52 \times 10^8$	0.987	0.997	0.988	0.999
226	2.225	0.855	0.912	1.07	1.251
227	122.265	1.006	1.009	0.997	1
228	$1.42 \times 10^8$	1.12	1.09	1.007	0.99
229	$1.45 \times 10^8$	0.987	0.99	1.016	1.007
230	$2.47 \times 10^8$	1.031	1.079	0.189	0.2

*Note:* The table reports the individual parameter estimates from the intrapersonal choices. IDs with (\*) denote cases where we infer (bounds on) the values directly from the data without estimation. IDs with + denote cases which are excluded based on a Grubb's outlier test. See footnote ??.

Table C3: Individual parameter estimates from intrapersonal choices (id 101-230)

id	$\gamma$	$\delta_s$	$\beta_s$	$\delta_o$	$\beta_o$
304	4.91	1.092	0.892	1.093	0.82
305	2.065	1.285	1.097	1.219	1.063
306	7.996	0.886	0.923	0.992	1.016
308	1.137	1.016	1.013	1.016	1.013
309	$1.98 \times 10^7$	0.955	1.19	1.063	1.065
310	5.546	1.127	1.116	0.992	0.987
311*			$\geq 1$		1
312	1.353	0.902	0.855	0.869	0.821
314	$9.11 \times 10^8$	0.836	0.859	1.83	1.742
315	$2.41 \times 10^8$	0.506	0.162	1.38	0.991
316 <sup>+</sup>	264.788	2.474	2.439	1.026	0.981
317	$2.64 \times 10^9$	0.243	0.66	1.006	1.896
319	1.02	1.328	1.336	1	1
320*			$\geq 1$		$\leq 1$
321	6689878	1.432	0.964	0.67	0.634
323	1.716	1.016	0.921	1.066	0.895
324	1.201	1.016	0.99	1.013	1.018
326	1.149	1.004	1.001	1.004	1.001
327	53.483	0.975	1.001	1.007	1.019
328	$2.42 \times 10^7$	0.599	0.601	0.861	1.081
329	$1.38 \times 10^9$	1.269	1.054	0.999	0.856
330	$4.11 \times 10^8$	0.851	1	0.955	1.028
401	$7.91 \times 10^7$	0.988	1.029	0.88	0.982
402	1.917	1.002	0.804	1.105	1.155
403*			$\leq 1$		$\leq 1$
404*			1		1
405	$3.15 \times 10^8$	0.875	0.867	0.963	1.245
406	$8.53 \times 10^7$	0.986	0.993	0.891	1.313
408	$4.53 \times 10^8$	0.987	0.807	0.979	1.113
409	$1.24 \times 10^7$	0.817	0.472	0.901	1.037
410	$2.31 \times 10^9$	0.961	0.982	0.873	0.885
411	$1.49 \times 10^9$	1.017	1.002	1.003	1.1
413	1.311	0.993	1.009	1.025	1.003
414	1.125	1.007	1	0.939	0.932
415	$6.56 \times 10^8$	0.987	0.99	0.977	0.971
417	$5.30 \times 10^7$	0.961	0.734	0.857	0.961
418	$2.69 \times 10^9$	1.024	1.117	1.004	0.984
419	$6.40 \times 10^7$	1.058	0.587	0.905	0.88
420	1.173	0.981	0.964	1.129	1.111
421	75.328	0.996	1	0.996	1
422	13.179	0.491	0.949	0.998	1.009
423	1.499	1.208	0.732	0.919	0.815
424	1.541	0.831	0.871	0.886	0.885
425	328.411	1.007	1.009	0.997	0.991
426	$6.18 \times 10^7$	0.993	1.055	0.941	0.996
427	1.714	0.961	0.993	0.996	0.985

*Note:* The table reports the individual parameter estimates from the intrapersonal choices. IDs with (\*) denote cases where we infer (bounds on) the values directly from the data without estimation. IDs with + denote cases which are excluded based on a Grubb's outlier test. See footnote ??.

Table C4: Individual parameter estimates from intrapersonal choices (id 301-430)

## D Additional Robustness Checks

	(1) FOC $\omega = 10$	(2) CFS $\omega = 10$	(3) CFS $\omega = 0$
$\sigma = \frac{1}{\rho-1}$	0.042 (0.084)	-0.000 (0.077)	0.263 (0.139)
$A = \left(\frac{1-a}{a}\right)^{\frac{1}{\rho-1}}$	0.421 (0.037)	0.448 (0.039)	0.296 (0.045)
$\tilde{\delta}$	1.056 (0.049)	1.051 (0.048)	1.062 (0.063)
$\tilde{\beta}$	0.900 (0.050)	0.898 (0.052)	0.875 (0.067)
Observations	2016	2016	2016
Cluster	84	84	84
$H_o(\hat{\delta} = 1)$	$p = 0.249$	$p = 0.291$	$p = 0.330$
$H_o(\hat{\beta} = 1)$	$p = 0.047$	$p = 0.049$	$p = 0.064$

*Note:* The table reports the parameter estimates for the symmetric dictator games, using the data from all subjects who at least once allocate at least one task to themselves. Column (1) uses the log-linearized first order condition, while columns (2) and (3) use the closed form solution for the number of tasks allocated to oneself. Standard errors are clustered at the individual level and calculated via the delta method.

Table D1: Parameter estimates for blocks SOONSOON and LATELATE (excluding only purely selfish subjects)

	(1) FOC $\omega = 10$	(2) CFS $\omega = 10$	(3) CFS $\omega = 0$
$\sigma = \frac{1}{\rho-1}$	0.024 (0.085)	-0.015 (0.078)	0.252 (0.140)
$A = \left(\frac{1-a}{a}\right)^{\frac{1}{\rho-1}}$	0.417 (0.038)	0.444 (0.039)	0.291 (0.045)
$\delta_s$	1.062 (0.034)	1.060 (0.034)	1.073 (0.045)
$\beta_s$	0.920 (0.028)	0.919 (0.029)	0.899 (0.040)
$\delta_o$	0.989 (0.030)	0.992 (0.030)	0.989 (0.039)
$\beta_o$	1.025 (0.040)	1.026 (0.041)	1.034 (0.053)
Observations	4032	4032	4032
Cluster	84	84	84
$H_o(\hat{\beta}_s = 1)$	$p = 0.005$	$p = 0.005$	$p = 0.011$
$H_o(\hat{\beta}_o = 1)$	$p = 0.524$	$p = 0.522$	$p = 0.527$
$H_o(\hat{\beta}_s = \hat{\beta}_o)$	$p = 0.063$	$p = 0.066$	$p = 0.089$

*Note:* The table reports the parameter estimates from all dictator games, using the data from all subjects who at least once allocate at least one task to themselves. Column (1) uses the log-linearized first order condition, while columns (2) and (3) use the closed form solution for the number of tasks allocated to oneself. Standard errors are clustered at the individual level and calculated via the delta method.

Table D2: Parameter estimates from all dictator games (excluding only purely selfish subjects)

	SELF ( $j = s$ )			OTHER ( $j = o$ )		
	(1) FOC	(2) CFS	(3) CFS	(4) FOC	(5) CFS	(6) CFS
	$\omega = 10$	$\omega = 10$	$\omega = 0$	$\omega = 10$	$\omega = 10$	$\omega = 0$
$\gamma_j$	2.269 (0.252)	2.659 (0.404)	2.067 (0.273)	2.866 (0.610)	3.828 (1.260)	2.887 (0.867)
$\delta_j$	0.983 (0.061)	0.974 (0.070)	0.958 (0.065)	0.983 (0.078)	0.982 (0.104)	0.957 (0.098)
$\beta_j$	0.862 (0.063)	0.846 (0.074)	0.846 (0.072)	0.932 (0.097)	0.905 (0.126)	0.915 (0.124)
Observations	1248	1248	1248	1248	1248	1248
Cluster	104	104	104	104	104	104
$H_o(\hat{\delta}_j = 1)$	$p = 0.775$	$p = 0.713$	$p = 0.518$	$p = 0.825$	$p = 0.864$	$p = 0.662$
$H_o(\hat{\beta}_j = 1)$	$p = 0.029$	$p = 0.037$	$p = 0.031$	$p = 0.482$	$p = 0.453$	$p = 0.492$

*Note:* The table reports the parameter estimates for the choices made in blocks SELF (left panel) and OTHER (right panel), respectively, using the full sample. Columns (1) and (4) use the log-linearized first order condition, while the other columns use the closed form solution for the number of tasks allocated to the sooner date. Standard errors are clustered at the individual level and calculated via the delta method.

Table D3: Parameter estimates for blocks SELF and OTHER (full sample)

	(1) FOC $\omega = 10$	(2) CFS $\omega = 10$	(3) CFS $\omega = 0$
$\gamma$	2.507 (0.341)	3.092 (0.600)	2.369 (0.409)
$\delta_s$	0.967 (0.070)	0.939 (0.082)	0.931 (0.076)
$\beta_s$	0.837 (0.076)	0.813 (0.092)	0.813 (0.089)
$\delta_o$	0.998 (0.065)	1.018 (0.086)	0.986 (0.080)
$\beta_o$	0.945 (0.078)	0.928 (0.094)	0.935 (0.093)
Observations	2496	2496	2496
Cluster	104	104	104
$H_o(\hat{\beta}_s = 1)$	$p = 0.032$	$p = 0.042$	$p = 0.037$
$H_o(\hat{\beta}_o = 1)$	$p = 0.477$	$p = 0.442$	$p = 0.485$
$H_o(\hat{\beta}_s = \hat{\beta}_o)$	$p = 0.286$	$p = 0.337$	$p = 0.298$

*Note:* The table reports the parameter estimates for the choices made in blocks SELF and OTHER under the restriction that  $\gamma_s = \gamma_o = \gamma$  using the full sample. Column (1) uses the log-linearized first order condition, while the columns (2) and (3) use the closed form solution for the number of tasks allocated to the sooner date. Standard errors are clustered at the individual level and calculated via the delta method.

Table D4: Parameter estimates for blocks SELF and OTHER combined (full sample)

## **E Experimental Instructions**

### *E.1 Experimental Instructions (Week 1)*

#### **Welcome to our Experiment!**

##### **Prerequisites for participation**

In order to participate in this study, you must be able to attend three laboratory sessions in three consecutive weeks. These sessions always take place at the same day of the week and the same time of the day. In the following, we refer to these three sessions as week 1 (today), week 2 (next week) and week 3 (the week after next). The average duration of the sessions is about one hour but may vary between 15 and 90 minutes. You also have to be willing to receive your total payment as a one-time payment at the end of the third experimental session. If you are not able to meet one or more of these requirements, please raise your hand now. In that case, you unfortunately cannot participate in our study.

##### **Anonymity**

Your anonymity in this study is guaranteed, i.e., no participant will learn about the identity of those who made a certain decision. Also, the experimenters will never connect your name with your decisions.

##### **Rules of conduct**

The results of this experiment will be used for a research project. It is therefore important that all participants follow certain rules of conduct. During the experiment, you are not allowed to communicate with other participants of the experiment or other people outside the laboratory. All mobile devices need to be switched off. In case you have any questions about the instructions or the study, please raise your hand at any time we will answer your question individually at your desk. Non-compliance with these rules will lead to exclusion from the experiment and all payments.

##### **Payment**

If you show up at all three experimental sessions, you will receive a completion payment of € 40. The payments will be made in cash at the end of the third session. If you drop out earlier or fail to show up to one or more sessions, you will receive a compensation payment of € 4. You have to collect this payment in cash at the end of the third session.

##### **General description**

Your task in this study is to solve a series of encryption tasks. You have to work on these

encryption tasks in each of the three sessions. How many tasks you have to solve in each session depends on your decisions and chance. Yet, in each of the three laboratory sessions you have to solve a minimum requirement of tasks. It is therefore necessary that you show up for all three laboratory sessions.

### Encryption task

The encryption task consists of a combination of eight letters (a "word"), which need to be converted into a number. For this, you will be shown a table with all letters of the alphabet, where each letter is assigned a three-digit number. Your task is to find for each letter of the displayed "word" the corresponding numeric code and to type it into the corresponding blue textbox. This becomes immediately clear by looking at the following screenshot:

WORT:	R	G	U	S	L	V	Z	K
CODE:	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
B K O L I Y S Z C U N D A T X M J V Q W R E P G F H	297 777 678 268 424 931 954 195 753 722 496 329 644 394 936 416 651 590 886 760 748 908 212 327 362 416							

In this example, you would have to type in the number 748 into the first textbox for "R". For the next textbox you would have to type the number 327 for "G", and for the third number 722 for "U", and so on. As soon as you enter the numbers for all letters correctly, a new word appears, again consisting of eight randomly generated letters. You will also see a new table in which the position of the letters is reshuffled. Furthermore, in this new table each letter is assigned a new randomly generated three-digit number.

Incorrect Entries: In case you make a mistake in one of the entries and press the "submit" button, a note will be shown on your screen. In this case, you have to encrypt the whole world again. However, the table of the letters and numbers stays the same in this case.

*Information: To switch between the textboxes you may use the "Tab key" on the keyboard.*

### What you have to do in the three laboratory sessions

After you have become familiar with the encryption task, in the following we explain the details of the study.

*Important: At the beginning of each of the three laboratory sessions, every participant has to correctly solve a minimum number of 10 encryption tasks.*

## **Week 1 (today)**

After all participants have correctly solved the minimum requirement of encryption tasks, the task of today's laboratory session is to make a **series of allocation decisions** for different situations. In each decision, you have to decide about the **allocation of a certain number of encryption tasks**. There are **six different situations** in total. They differ in terms of who is affected by the allocation of the tasks. Some decisions affect **only you**, other decisions affect **only another person**, and in some decisions both you and the other person are affected. In week 2 one of these situations will be randomly selected (more on this see below). This choice determines how many tasks you and the other person have to solve in week 2 and week 3. The different situations are classified into six blocks. The blocks are as follows:

**Block 1:** In block 1 you have to decide how many tasks **you** want to solve in **week 2** and how many tasks **you** want to solve in **week 3**.

**Block 2:** In block 2 you have to decide how many tasks **another randomly selected participant** needs to solve in **week 2** and how many tasks **this person** needs to solve in **week 3**.

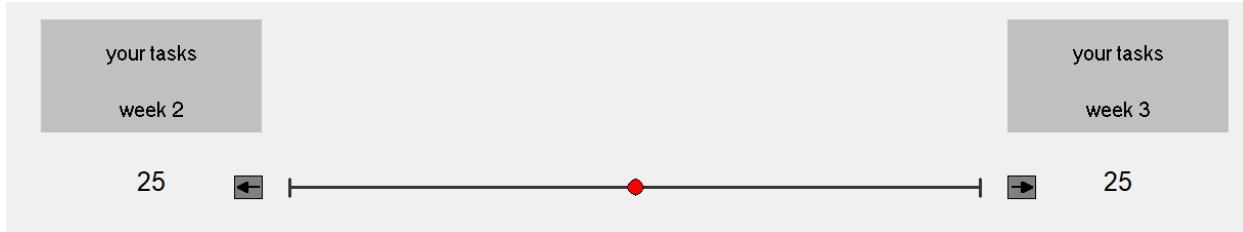
**Block 3:** In block 3 you have to decide how many tasks **you** want to solve in **week 2** and how many tasks **another randomly selected participant** needs to solve in **week 2**.

**Block 4:** In block 4 you have to decide how many tasks **you** want to solve in **week 3** and how many tasks **another randomly selected participant** needs to solve in **week 3**.

**Block 5:** In block 5 you have to decide how many tasks **you** want to solve in **week 2** and how many tasks **another randomly selected participant** needs to solve in **week 3**.

**Block 6:** In block 6 you have to decide how many tasks **you** want to solve in **week 3** and how many tasks **another randomly selected participant** needs to solve in **week 2**.

For each decision there will be shown a slider on the screen, which you can use to allocate the tasks. For example, in block 1 the screen looks as follows:



You can move the slider along the black line to the left or to the right, either by a mouse click or by clicking on the arrow keys next to it. In this example, the left and right numbers next to the slider show how many tasks you want to solve in week 2 and how many you want to solve in week 3. Please note that these numbers do not include the 10 tasks every participant needs to complete at the beginning of each laboratory session.

### Decisions within a block

Within each block, you have to make a total of six decisions. The decisions differ in terms of **the rate by which you can allocate tasks between week 2 and week 3 or between yourself and another randomly selected participant**. There are six rates in total: 1:0.5; 1:0.75; 1:1; 1:1.25; 1:1.5 and 1:2.

To illustrate these task rates, we stick to the example of block 1. As shown in the screenshot above, you can place the slider further to the left to complete more tasks in week 2, or further to the right to complete more tasks in week 3. The task rate defines by how much the number of tasks you need to solve in week 2 is reduced when you move the slider further to the right:

- A rate of 1:1 means that every task you solve in week 3 reduces the number of tasks you need to solve in week 2 by 1.
- A rate of 1:2 means, that every task you solve in week 3 reduces the number of tasks you need to solve in week 2 by 2.

Now take as an example block 5, in which you have to decide how many tasks **you** want to solve in **week 2** and how many tasks **one other randomly selected participant** needs to solve in **week 3**. In this case the task rate defines by how much the number of tasks you need to solve in week 2 is reduced when you move the slider further to the right:

- A rate of 1:1 then means that every task another person needs to solve in week 3 reduces the number of the tasks you need to solve in week 2 by 1.
- A rate of 1:0.5 then means that every task another person needs to solve in week 3 reduces the number of the tasks you need to solve in week 2 by 0.5.

The same logic applies for the other blocks and rates. You have the opportunity to familiarize yourself with the slider and the different task rates at the beginning of the experiment. We will also ask you some control questions to ensure that the procedure is clear for everybody. After that, you will make your decisions. The six blocks will be shown to you in a random order. After all participants have made their decisions, a brief questionnaire will follow. After that, the laboratory session for week 1 is over.

### **Week 2 (one week from today)**

The second laboratory session will take place in exactly one week at the same weekday and at the same time of the day, here in the laboratory. We will send you an email reminder about the dates beforehand. Please bring along the card you drew at the beginning of today's session. On the back of the card you will see once more the dates of the second and third laboratory session. The procedure of week 2 is as follows:

- At the beginning of the second laboratory session, you first have to correctly solve the minimum requirement of 10 encryption tasks.
- After that you will be again asked to make a series of allocation decisions, as in week 1.
- Then, one decision, either from week 1 or week 2, will be randomly implemented. In the following, we will refer to the randomly chosen decision as the "allocation that counts". Below, we will explain how exactly the "allocation that counts" is chosen.
- After that, you will be informed on screen how many tasks you need to solve based on the "allocation that counts". Subsequently, you have to correctly solve the number of tasks allocated to you for week 2.
- Once you have solved all tasks correctly, you may leave your desk and the laboratory. That is, you do not have to wait until all participants have finished solving their allocated tasks. If you leave the laboratory before you have solved all tasks correctly, this will count as dropping out of the study and you only receive a compensation payment of €4.

### **Week 3 (two weeks from today)**

The third (and last) laboratory session will take place exactly in two weeks at the same week day at the same time of the day, here in the laboratory. We will send you an email reminder about the dates beforehand. Please bring along the card you drew at the beginning of today's session. The procedure of week 2 is as follows:

- At the beginning of the third laboratory session you first have to correctly solve the minimum requirement of 10 encryption tasks.
- Then, you have to correctly solve the number of tasks that have been allocated to you based on the "allocation that counts" for week 3.
- Once you have solved all the tasks correctly, we will come to your desk and you will receive your completion payment of €40. Then, you may leave your desk and the laboratory. That is, you do not have to wait until all participants have finished solving their allocated tasks. If you leave the laboratory before you have solved all tasks, this will count as dropping out of the study and you only receive a compensation of €4.

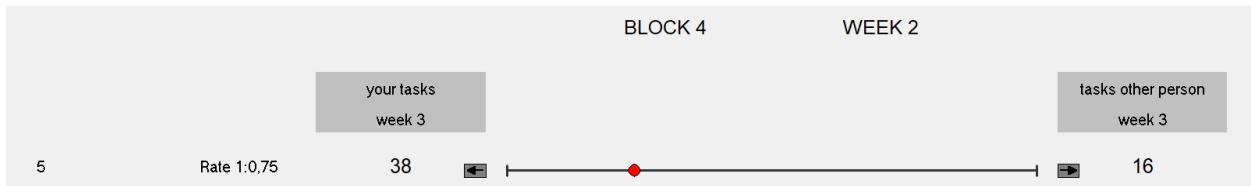
### **Determination of the "Allocation That Counts"**

In week 1 and week 2 you will make a total of 36 allocation decisions, respectively. After having made all decisions, one decision will be randomly chosen in week 2. This "allocation that counts" defines how many tasks you and one other person need to solve in week 2 and week 3. The determination of the "allocation that counts" is as follows:

1. First, we divide all participants into two groups, red and blue. To do this, each participant has to draw a colored card from a bag. The bag contains the same number of red and blue cards.
2. Then, each blue participant will be randomly allocated to a red participant. The decisions of the red participants determine how many tasks the red and the blue participant need to solve in week 2 and week 3.
3. First, it will be randomly and with equal probability determined, whether red's decisions from week 1 or from week 2 will be relevant.
4. After that, it will be determined which decision within the randomly chosen week will be relevant. To this end, first one of the six blocks will be randomly selected with equal probabilities. Then, one of the 6 decisions within the selected block will be chosen randomly and with equal probabilities.

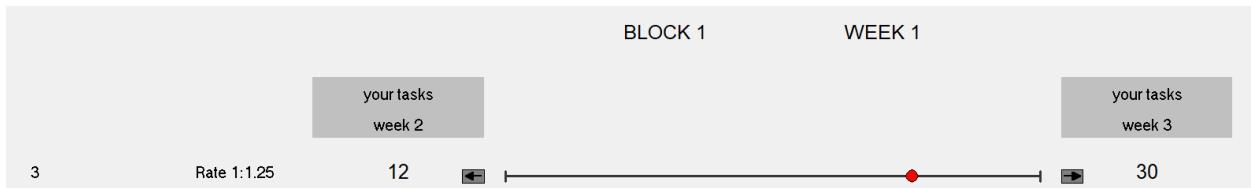
This decision will then be the "allocation that counts". The allocation of encryption tasks from this decision then determines how many tasks you and the other person need to solve in week 2 and week 3. This procedure ensures that every decision has the same probability to be chosen. Furthermore, it means, that the "allocation that counts" may be different from participant to participant.

**Example:** For a red participant decision 5 from week 2 and block 4 is chosen:



This means that the red participant needs to solve 38 tasks in week 3 and the blue participant (the "other person") needs to solve 16 tasks in week 3, in addition to the minimum requirement of 10 tasks each. This further means that in week 2 the red and the blue participant only need to solve the minimum requirement of 10 tasks.

For another red participant decision 3 from week 1 and block 1 is chosen:



This means, that the red participant needs to solve 12 tasks in week 2 and 30 tasks in week 2, in addition to the minimum requirement of 10 tasks each. This further means that the blue participant only needs to solve the minimum requirement of 10 tasks in weeks 2 and 3.

**Information:** Please note that every decision you make may be the "allocation that counts". So please take every decision as if it would be the one determining your task.

## Summary

- You are participating in a two-week study with a total of three laboratory sessions.
- If you show up to all sessions and solve all your tasks, you will receive a completion payment of €40 in cash at the end of the third session.
- If you miss one or more laboratory sessions and/or fail to solve all your tasks, you will receive a compensation payment of €4, which you have to collect in cash at the end of the third session.
- You make various allocation decisions in week 1 and week 2. In week 2, one decision will be randomly chosen and implemented. This "allocation that counts" determines how many tasks you and one other person need to solve in week 2 and week 3.

- All participants need to solve a minimum requirement of 10 tasks independently from "the allocation that counts" in each of the three weeks.
- As soon as you solved your tasks in week 2 and week 3, you may leave the laboratory. You do not have to wait for the other participants.

In case you have any question please raise your hand. We will answer your question in private at your desk. After that, the experiment starts with the test screen and the control questions.

## *E.2 Experimental Instructions (Week 2)*

### **Welcome to our experiment!**

#### **Reminder:**

Today's laboratory session is the second ("week 2") of three sessions in total. The third session takes place in exactly one week ("week 3"), at the same week day and at the same time of the day. If you also show up then and finish the study, you receive your full payment of € 40.

#### **What you have to do today**

Today's session consists of three parts:

- First, you need to solve the minimum requirement of 10 encryption tasks, which you already know from the previous week.
- Afterwards, you again need to make a series of allocation decisions for different situations. In each decision, you have to decide about the allocation of a certain number of encryption tasks. There are six different situations, exactly like in week 1. They differ in terms of who is affected by the allocation of the tasks. Some decisions affect only you, other decisions affect only another person, and in some decisions both you and the other person are affected.
- Then, one decision, either from last week ("week 1") or from today ("week 2"), will be randomly chosen as the "allocation that counts". This decision then determines how many tasks you need to solve today and next week. As a reminder, we will again explain below how exactly the "allocation that counts" is chosen.

Once you have solved all tasks correctly, you may leave your desk and the laboratory. **That is, you do not have to wait until all participants have finished solving their allocated tasks.** If you leave the laboratory before you have solved all tasks, this will count as dropping out of the study and you only receive a compensation payment of € 4.

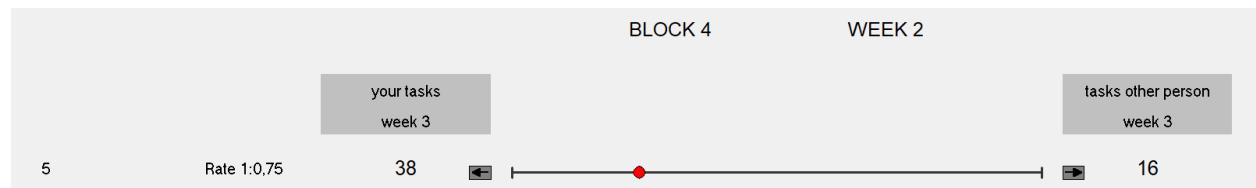
You have the opportunity to familiarize yourself with the slider and the different task rates at the beginning of the experiment. We will also ask you again some control questions to ensure that the procedure is clear for everybody.

## Determination of the "Allocation That Counts"

1. First, we divide all participants into two groups, red and blue. To do this, each participant has to draw a colored card from a bag. The bag contains the same number of red and blue cards.
2. Then, each blue participant will be randomly allocated to a red participant. The decisions of the red participants determine how many tasks the red and the blue participant need to solve in week 2 and week 3.
3. First, it will be randomly and with equal probability determined, whether red's decisions from week 1 or from week 2 will be relevant.
4. After that, it will be determined which decision within the randomly chosen week will be relevant. To this end, first one of the six blocks will be randomly selected with equal probabilities. Then, one of the 6 decisions within the selected block will be chosen randomly and with equal probabilities.

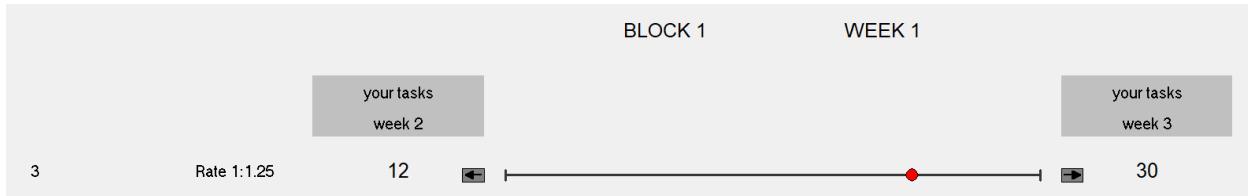
This decision will then be the "allocation that counts". The allocation of encryption tasks from this decision then determines how many tasks you and the other person need to solve today (week 2) and next week (week 3). This procedure ensures that every decision has the same probability to be chosen. Furthermore, it means, that the "allocation that counts" may be different from participant to participant.

**Example 1:** For a red participant decision 5 from week 2 and block 4 is chosen:



This means that the red participant needs to solve 38 tasks in week 3 and the blue participant (the "other person") needs to solve 16 tasks in week 3, in addition to the minimum requirement of 10 tasks each. This further means that today the red and the blue participant only need to solve the minimum requirement of 10 tasks.

**Example 2:** For another red participant decision 3 from week 1 and block 1 is chosen:



This means, that the red participant needs to solve 12 tasks today and 30 tasks in week 2, in addition to the minimum requirement of 10 tasks each. This further means that the blue participant only needs to solve the minimum requirement of 10 tasks today and in week 3.

**Information:** Please note that every decision you make may be the "allocation that counts". So please take every decision as if it would be the one determining your task.

### *E.3 Experimental Instructions (Week 3)*

#### **Welcome to our experiment!**

##### **Reminder:**

Today's laboratory session is the third ("week 3") of three sessions in total.

##### **What you have to do today**

Today's session consists of two parts:

- First, you need to solve the minimum requirement of 10 encryption tasks, which you already know from the previous two weeks.
- Afterwards you need to solve the numbers of tasks that have been allocated to you based on the "**allocation that counts**".

Once you have solved all the tasks, we will come to your desk and you will receive your completion payment of €40. Then, you may leave your desk and the laboratory. **That is, you do not have to wait until all participants have finished solving their allocated tasks.** If you leave the laboratory before you have solved all tasks, this will count as dropping out of the study. In this case you will only receive a compensation payment of €4.