

# APPENDIX - NOT FOR PUBLICATION

## A Simulation Appendix

This appendix focuses on two questions related to the estimation strategies laid out in section 3. First, we examine the extent to which the implemented estimators identify the true parameters of interest,  $\beta$ ,  $\delta$  and  $\gamma$  at the aggregate and individual level. As our individual estimates restrict  $\gamma$  to be constant across subjects, this exercise is conducted under various correlation structures for  $\beta$  and  $\gamma$  to understand the sensitivity of our parameter estimates to this restriction. Further, the correlation structure also helps to investigate the sensitivity of identifying  $\beta$  via a non-linear combination involving  $\gamma$  in the aggregate estimates.

Second, we investigate the sensitivity of aggregate and individual estimates to uncertainty. Subjects may make allocations in Week 1 that minimize their discounted *expected* cost in future weeks given the potential realizations of future parameters. This uncertainty may be subsequently resolved in Week 2, such that subjects minimize their discounted cost at specific realizations of key parameters. As the minimizer of the expectation need not be the expectation of the minimizer, such issues can lead to inconsistencies between initial allocations and subsequent reallocations. To explore the extent to which this issue hampers identification of present bias, we conduct simulations under several uncertainty structures.

Our procedure for conducting the first simulation exercise is straightforward. We draw 100 samples of 80 individuals with underlying true parameters drawn from distributions centered roughly around our aggregate estimates. That is, for each sample  $\beta$  is drawn from a normal distribution with mean 0.9 and standard deviation 0.2;  $\delta$  is drawn from a normal distribution with mean 0.99 and standard deviation 0.2; and  $\gamma$  is drawn from a normal distribution with mean 1.6 and standard deviation of 0.2. We introduce five correlation structures for the relationship between  $\beta$  and  $\gamma$ ,  $\rho(\beta, \gamma) \in \{-0.75, -0.25, 0, 0.25, 0.75\}$ . For simplicity and to focus attention on the sensitivity of present bias we assume  $\rho(\beta, \delta) = 0$  and  $\rho(\delta, \gamma) = 0$  when drawing

each sample.

For each of these correlation structures we conduct two key analyses. First, for every sample we estimate the aggregate parameters,  $\widehat{\beta}$ ,  $\widehat{\delta}$  and  $\widehat{\gamma}$ . The empirical distribution of  $\widehat{\beta}$  over the 100 samples is summarized by the empirical mean,  $\overline{\widehat{\beta}}$ , the empirical standard deviation,  $s(\widehat{\beta})$ . Similar values summarize the empirical distributions of  $\widehat{\delta}$  and  $\widehat{\gamma}$ . We investigate the extent to which the estimated values for  $\widehat{\beta}$  correspond to the underlying data generating process by comparing  $\overline{\widehat{\beta}}$  to the true mean  $\beta$  of 0.9. We also provide a measure of type I error in the form of the probability of rejecting  $\beta = 0.9$  from each of our 100 drawn samples,  $0.9 \notin CI(\beta)$ , and a measure of type II error in the form of the probability of rejecting  $\beta = 1$ ,  $1 \notin CI(\beta)$ . Table A1, Panel A provide these analyses. With zero correlation structure we precisely estimate all parameters close to the true underlying distribution. We reject the truth with probability around 0.10 and remain powered to reject  $\beta = 1$ . With extreme negative correlation of  $\rho(\beta, \gamma) = -0.75$ , this precision is largely unaffected, though with extreme positive correlation of  $\rho(\beta, \gamma) = 0.75$  the aggregate estimator falters. We begin to overestimate the extent of present bias and reject the truth with frequency. This exercise documents the sensitivity of our aggregate estimates to extreme correlation structures.

Next, we focus on individual estimates. Table A1, Panel A provides the results. In each sample of 80 observations, we estimate individual parameters based on the fixed effects regression described in section 3. We consider the median and mean level of the individual estimate  $\widehat{\beta}_i$ ,  $\overline{\widehat{\beta}_i}$  and  $\widehat{\beta}_i^{med}$ , and the correlation between the true draw of  $\beta_i$  and the estimated value  $\widehat{\beta}_i$ ,  $r(\beta_i, \widehat{\beta}_i)$ . For each of the 100 samples, we construct a correlation coefficient, and present the average value. Across correlation structures, we estimate broadly correct average and median values. Importantly, even when the accuracy of the level of behavior deteriorates due to extreme negative correlation between  $\beta$  and  $\gamma$ , we find the correlation between the true  $\beta_i$  and  $\widehat{\beta}_i$  remains above 0.9. This indicates that the individual estimates remain capable of identifying differences across individuals in present bias, providing a solid foundation for our individual analysis.

The remainder of Table A1 analyzes the effect of uncertainty. We focus on uncertainty in  $\gamma$  realized only in Week 2. Hence the Week 1 allocations are made under uncertainty that is resolved in Week 2. To operationalize this exercise we again have  $\beta$  and  $\delta$  drawn from the distributions above in advance. However, we assume that in Week 1, subjects do not know their true  $\gamma$  but optimize subject to the knowledge that  $\gamma$  is drawn from a normal distribution with mean 1.6 and standard deviation of  $\sigma$ . We consider five values of  $\sigma \in \{0, 0.05, 0.1, 0.2\}$ . In Panel B, we provide aggregate and individual analysis.. Though the aggregate estimates and error rates are unaffected for the lower value of uncertainty, as parametric uncertainty is increased, we begin to overestimate  $\beta$  and reject the truth with frequency. A similar pattern is observed in the individual estimates. Importantly, the presence of parametric uncertainty greatly reduces the correlation between between the true  $\beta_i$  and  $\hat{\beta}_i$  which drops below 0.3 in the more extreme case.

A natural question is why parametric uncertainty leads towards upward-biased estimates of  $\beta$ , pushing away from present bias. Intuitively, a subject with parametric uncertainty attempts to avoid situations of high work under extremely convex cost functions that are rarely realized. As this encourages subjects to spread their initial allocations, we estimate a more convex cost function. When the uncertainty is realized, they allocate less evenly over time on average, but the cost function is required by the estimator to remain constant. This change in behavior in Week 2 winds up being captured partially in the form of an increased  $\beta$  in our parameter space of interest.

Table A1: Simulation Exercises

	Aggregate Estimates						Individual Estimates			
<i>Panel A:</i>	Simulations: $\delta \sim N(0.99, 0.2^2)$ , $\beta \sim N(0.9, 0.2^2)$ , $\gamma \sim N(1.6, 0.2^2)$									
	Correlation Structure: $r(\beta, \gamma) \in \{-0.75, -0.25, 0, 0.25, 0.75\}$									
	N	$\bar{\hat{\beta}}$	$s(\hat{\beta})$	$0.9 \notin CI(\beta)$	$1 \notin CI(\beta)$	$\hat{\gamma}$	$\hat{\delta}$	$\bar{\hat{\beta}}_i$	$\hat{\beta}_i^{med}$	$r(\beta_i, \hat{\beta}_i)$
$r(\beta, \gamma)=0$	80x100	.8828	.0242	11%	95%	1.552	.9955	.9080	.9077	0.971
$r(\beta, \gamma)=-0.25$	80x100	.8884	.0235	11%	98%	1.552	.9960	.9113	.9029	0.965
$r(\beta, \gamma)=-0.75$	80x100	.9169	.0235	13%	86%	1.537	.9955	.9359	.9071	0.931
$r(\beta, \gamma)=+0.25$	80x100	.8712	.0228	19%	96%	1.556	.9957	.8997	.9116	0.971
$r(\beta, \gamma)=+0.75$	80x100	.8541	.0265	45%	96%	1.545	.9953	.8872	.9103	0.964
<i>Panel B:</i>	Simulations: $\delta \sim N(0.99, 0.2^2)$ , $\beta \sim N(0.9, 0.2^2)$ , $\gamma \sim N(1.6, \sigma^2)$									
	Uncertainty Structure: $\sigma \in \{0, 0.05, 0.1, 0.2\}$ , Unrealized at Initial Allocation									
	N	$\bar{\hat{\beta}}$	$s(\hat{\beta})$	$0.9 \notin CI(\beta)$	$1 \notin CI(\beta)$	$\hat{\gamma}$	$\hat{\delta}$	$\bar{\hat{\beta}}_i$	$\hat{\beta}_i^{med}$	$r(\beta_i, \hat{\beta}_i)$
$\sigma = 0$	80x100	.8800	.0202	13%	94%	1.601	.9957	.9044	.9017	0.995
$\sigma = 0.05$	80x100	.9001	.0287	7%	92%	1.608	.9949	.9336	.9122	0.824
$\sigma = 0.1$	80x100	.9593	.0369	26%	17%	1.632	.9952	1.022	.9539	0.590
$\sigma = 0.2$	80x100	1.186	.0823	98%	58%	1.736	.9957	1.367	1.164	0.325

## B Additional Tables and Figures

### B.1 Estimates Including Nine Subjects With Limited Effort Allocation Variation

We re-conduct the primary aggregate analysis including 9 subjects with limited variation in their effort allocation choices.

Table A2: Parameter Estimates Including 9 Additional Subjects

	Monetary Discounting		Effort Discounting		
	(1) All Delay Lengths	(2) Three Week Delay Lengths	(3) Job 1 Greek	(4) Job 2 Tetris	(5) Combined
Present Bias Parameter: $\hat{\beta}$	0.975 (0.008)	0.988 (0.008)	0.870 (0.045)	0.848 (0.042)	0.858 (0.040)
Daily Discount Factor: $\hat{\delta}$	0.998 (0.000)	0.997 (0.000)	0.999 (0.005)	1.002 (0.005)	1.000 (0.005)
Monetary Curvature Parameter: $\hat{\alpha}$	0.976 (0.006)	0.977 (0.005)			
Cost of Effort Parameter: $\hat{\gamma}$			1.666 (0.122)	1.580 (0.101)	1.621 (0.109)
# Observations	1680	1260	890	890	1780
# Clusters	84	84	89	89	89
Job Effects					Yes
$H_0 : \beta = 1$	$\chi_2(1) = 9.09$ ( $p < 0.01$ )	$\chi_2(1) = 2.12$ ( $p = 0.15$ )	$\chi_2(1) = 8.41$ ( $p < 0.01$ )	$\chi_2(1) = 13.39$ ( $p < 0.01$ )	$\chi_2(1) = 12.23$ ( $p < 0.01$ )
$H_0 : \beta(\text{Col. 1}) = \beta(\text{Col. 5})$	$\chi_2(1) = 11.45$ ( $p < 0.01$ )				
$H_0 : \beta(\text{Col. 2}) = \beta(\text{Col. 5})$		$\chi_2(1) = 13.79$ ( $p < 0.01$ )			

*Notes:* Parameters identified from two-limit Tobit regressions of equations (6) and (4) for monetary discounting and effort discounting, respectively. Parameters recovered via non-linear combinations of regression coefficients. Standard errors clustered at individual level reported in parentheses, recovered via the delta method. Effort regressions control for Job Effects (Task 1 vs. Task 2). Tested null hypotheses are zero present bias,  $H_0 : \beta = 1$ , and equality of present bias across effort and money,  $H_0 : \beta(\text{Col. 1}) = \beta(\text{Col. 5})$  and  $H_0 : \beta(\text{Col. 2}) = \beta(\text{Col. 5})$ .

## B.2 Estimates For Effort Discounting By Week

We re-estimate parameters by week and test the null hypothesis of equality of discount rates identified from initial allocations and subsequent reallocations.

Table A3: Parameter Estimates By Week

	Effort Discounting			
	(1)	(2)	(3)	(4)
	Week 1 Initial Allocations	Week 2 Reallocations	Week 3 Initial Allocations	Week 4 Reallocations
Daily Discount Factor: $\hat{\delta}$	1.000 (0.004)	0.985 (0.004)	0.991 (0.003)	0.984 (0.004)
Cost of Effort Parameter: $\hat{\gamma}$	1.668 (0.126)	1.521 (0.097)	1.463 (0.074)	1.528 (0.092)
# Observations	800	800	800	800
# Clusters	80	80	80	80
Job Effects	Yes	Yes	Yes	Yes
$H_0 : \delta(\text{Col. 1}) = \delta(\text{Col. 2})$	$\chi_2(1) = 7.09$ ( $p < 0.01$ )			
$H_0 : \delta(\text{Col. 3}) = \delta(\text{Col. 4})$			$\chi_2(1) = 4.01$ ( $p = 0.05$ )	

*Notes:* Parameters identified from two-limit Tobit regressions of equation (4) assuming  $\beta = 1$  for effort discounting, respectively. Parameters recovered via non-linear combinations of regression coefficients. Standard errors clustered at individual level reported in parentheses, recovered via the delta method. Effort regressions control for Job Effects (Task 1 vs. Task 2). Tested null hypotheses are equal discounting in Weeks 1 vs. 2 and Weeks 4 and 5,  $H_0 : \delta(\text{Col. 1}) = \delta(\text{Col. 2})$  and  $H_0 : \delta(\text{Col. 3}) = \delta(\text{Col. 4})$ .

### B.3 Full Effort Data Set Tables Figures

We reconduct all analyses using Block 1 and Block 2 data to identify effort discounting parameters.

Table A4: Parameter Estimates: Full Effort Data Set

	Monetary Discounting		Effort Discounting		
	(1) All Delay Lengths	(2) Three Week Delay Lengths	(3) Job 1 Greek	(4) Job 2 Tetris	(5) Combined
Present Bias Parameter: $\hat{\beta}$	0.974 (0.009)	0.988 (0.009)	0.927 (0.022)	0.927 (0.021)	0.927 (0.020)
Daily Discount Factor: $\hat{\delta}$	0.998 (0.000)	0.997 (0.000)	0.997 (0.003)	0.997 (0.003)	0.997 (0.003)
Monetary Curvature Parameter: $\hat{\alpha}$	0.975 (0.006)	0.976 (0.005)			
Cost of Effort Parameter: $\hat{\gamma}$			1.566 (0.090)	1.510 (0.081)	1.537 (0.084)
# Observations	1500	1125	1600	1600	3200
# Clusters	75	75	80	80	80
Block Effects			Yes	Yes	Yes
Job Effects					Yes
$H_0 : \beta = 1$	$\chi_2(1) = 8.77$ ( $p < 0.01$ )	$\chi_2(1) = 1.96$ ( $p = 0.16$ )	$\chi_2(1) = 11.1$ ( $p < 0.01$ )	$\chi_2(1) = 11.9$ ( $p < 0.01$ )	$\chi_2(1) = 13.94$ ( $p < 0.01$ )
$H_0 : \beta(\text{Col. 1}) = \beta(\text{Col. 5})$	$\chi_2(1) = 5.46$ ( $p < 0.01$ )				
$H_0 : \beta(\text{Col. 2}) = \beta(\text{Col. 5})$		$\chi_2(1) = 8.61$ ( $p < 0.01$ )			

*Notes:* Parameters identified from two-limit Tobit regressions of equations (6) and (4) for monetary discounting and effort discounting, respectively. Parameters recovered via non-linear combinations of regression coefficients. Standard errors clustered at individual level reported in parentheses, recovered via the delta method. Effort regressions control for Block Effects (Weeks 1,2,3 vs. 4,5,6) and Job Effects (Task 1 vs. Task 2). Tested null hypotheses are zero present bias,  $H_0 : \beta = 1$ , and equality of present bias across effort and money,  $H_0 : \beta(\text{Col. 1}) = \beta(\text{Col. 5})$  and  $H_0 : \beta(\text{Col. 2}) = \beta(\text{Col. 5})$ .

Table A5: Validation of Individual Parameter Estimates: Full Effort Data Set

Dependent Variable:	<i>Budget Share Distance</i>			
	Effort Discounting		Monetary Discounting	
	(1)	(2)	(3)	(4)
Real Effort Present Bias Parameter: $\hat{\beta}_e$	0.444*** (0.025)			
Present Biased <sub>e</sub> (=1)		-0.092*** (0.012)		
Monetary Present Bias Parameter: $\hat{\beta}_m$			2.393*** (0.052)	
Present Biased <sub>m</sub> (=1)				-0.201*** (0.026)
Constant	-0.430*** (0.021)	0.034*** (0.011)	-2.391*** (0.049)	0.044*** (0.015)
Block x Job Effects	Yes	Yes	-	-
Choice Set Effects	-	-	Yes	Yes
# Observations	1600	1600	750	750
# Uncensored Observations	1593	1593	731	731
# Clusters	80	80	75	75

*Notes:* Coefficients from tobit regressions of budget share distance  $\in [-1, 1]$  on identified individual discounting parameters. 20 reallocations per individual for effort decisions and 10 reallocations per individual for monetary decisions. Standard errors clustered on individual level in parentheses. Block x Job fixed effects for effort and choice set fixed effects for monetary discounting included but not reported. Discounting parameters identified from OLS regressions for monetary discounting and real effort discounting with individual specific effects for both  $\hat{\delta}$  and  $\hat{\beta}$ . Curvature parameter,  $\alpha$ , and cost parameter,  $\lambda$ , assumed constant across individuals. Effort regressions identifying parameters control for Block Effects (Weeks 1,2,3 vs. 4,5,6) and Job Effects (Job 1 vs. Job 2). Monetary Present Bias (=1) and Effort Present Bias (=1) calculated as individuals with estimated  $\hat{\beta} < 0.99$  in the relevant domain. Levels of significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .



Table A6: Monetary and Real Effort Discounting by Commitment: Full Effort Data Set

	Monetary Discounting		Effort Discounting	
	Commit (=0)	Commit (=1)	Commit (=0)	Commit (=1)
	(1)	(2)	(3)	(4)
	Tobit	Tobit	Tobit	Tobit
Present Bias Parameter: $\hat{\beta}$	0.999 (0.010)	0.981 (0.013)	0.989 (0.018)	0.880 (0.031)
Daily Discount Factor: $\hat{\delta}$	0.997 (0.000)	0.997 (0.001)	0.987 (0.005)	1.004 (0.004)
Monetary Curvature Parameter: $\hat{\alpha}$	0.981 (0.009)	0.973 (0.007)		
Cost of Effort Parameter: $\hat{\gamma}$			1.485 (0.123)	1.579 (0.116)
# Observations				
# Clusters	28	47	33	47
Block Effects			Yes	Yes
Job Effects			Yes	Yes
$H_0 : \beta = 1$	$\chi_2(1) = 0.01$ ( $p = 0.94$ )	$\chi_2(1) = 2.15$ ( $p = 0.14$ )	$\chi_2(1) = 0.34$ ( $p = 0.56$ )	$\chi_2(1) = 15.12$ ( $p < 0.01$ )
$H_0 : \beta(\text{Col. 1}) = \beta(\text{Col. 2})$	$\chi_2(1) = 1.29$ ( $p = 0.26$ )			
$H_0 : \beta(\text{Col. 3}) = \beta(\text{Col. 4})$			$\chi_2(1) = 9.35$ ( $p < 0.01$ )	

*Notes:* Parameters identified from OLS regressions of equations (1) and (2) for monetary discounting and real effort discounting. Parameters recovered via non-linear combinations of regression coefficients. Standard errors clustered at individual level reported in parentheses, recovered via the delta method. Commit (=1) or Commit (=0) separates individuals into those who did (1) or those who did not (0) choose to commit at a commitment price of zero dollars. Effort regressions control for Block Effects (Weeks 1,2,3 vs. 4,5,6) and Job Effects (Job 1 vs. Job 2). Tested null hypotheses are zero present bias,  $H_0 : \beta = 1$ , and equality of present bias across commitment and no commitment,  $H_0 : \beta(\text{Col. 1}) = \beta(\text{Col. 2})$  and  $H_0 : \beta(\text{Col. 3}) = \beta(\text{Col. 4})$ .

Table A7: Predicting Commitment Demand: Full Effort Data Set

	<i>Dependent Variable : Commit (=1)</i>					
	(1)	(2)	(3)	(4)	(5)	(6)
$\hat{\beta}_e$	-4.932** [-1.184] (1.915)				-5.634** [-1.283] (2.346)	
Present Biased <sub>e</sub> (=1)		1.417*** [0.333] (0.485)				1.728*** [0.384] (0.554)
$\hat{\beta}_m$			-3.146 [-0.735] (4.140)		-1.685 [-0.384] (3.672)	
Present Biased <sub>m</sub> (=1)				0.622 [0.140] (0.533)		0.215 [0.048] (0.567)
Constant	5.019*** (1.809)	-0.405 (0.347)	3.635 (4.092)	0.323 (0.288)	7.541* (3.909)	-0.402 (0.377)
# Observations	80	80	75	75	75	75
Log-Likelihood	-49.718	-49.652	-49.280	-48.838	-44.649	-43.203
Pseudo $R^2$	0.083	0.084	0.006	0.014	0.099	0.128
Mean of Dependent Variable	0.59	0.59	0.63	0.63	0.63	0.63

*Notes:* Coefficients from logistic regression of demand for commitment on identified individual discounting parameters. Marginal effects in brackets. Robust standard errors in parentheses. Commit (=1) or Commit (=0) separates individuals into those who did (1) or those who did not (0) choose to commit at a commitment price of zero dollars. Discounting parameters identified from OLS regressions of equations (1) and (2) for monetary discounting and real effort discounting with individual specific effects for both  $\hat{\delta}$  and  $\hat{\beta}$ . Curvature parameter,  $\alpha$ , and cost parameter,  $\lambda$ , assumed constant across individuals. Effort regressions identifying parameters control for Block Effects (Weeks 1,2,3 vs. 4,5,6) and Job Effects (Job 1 vs. Job 2). Present Biased<sub>m</sub> (=1) and Present Biased<sub>e</sub> (=1) calculated as individuals with estimated  $\hat{\beta} < 0.99$  in the relevant domain. Levels of significance: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Figure A1: Real Effort Discounting Behavior: Full Effort Data Set

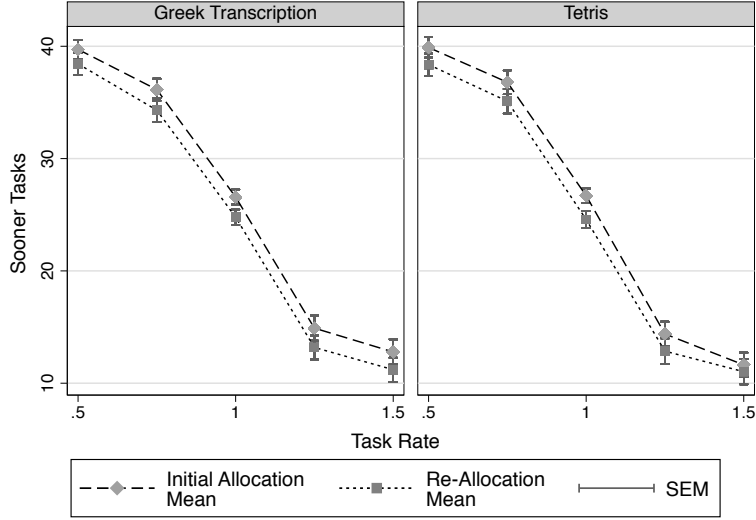


Figure A2: Individual Estimates of Present Bias: Full Effort Data Set

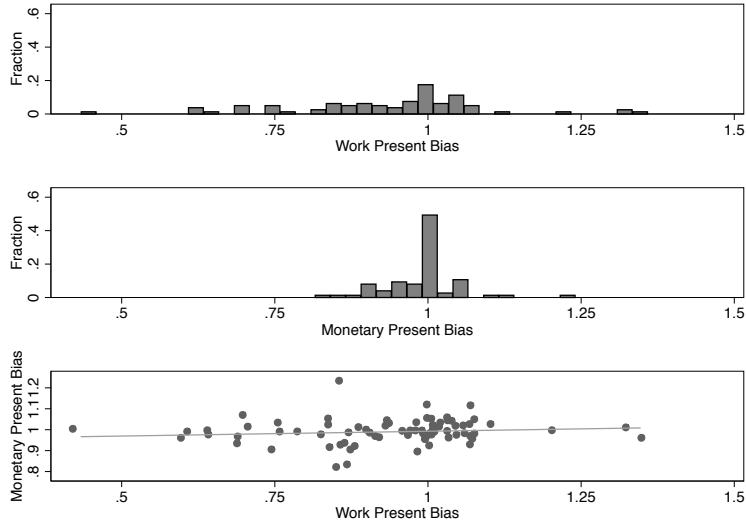
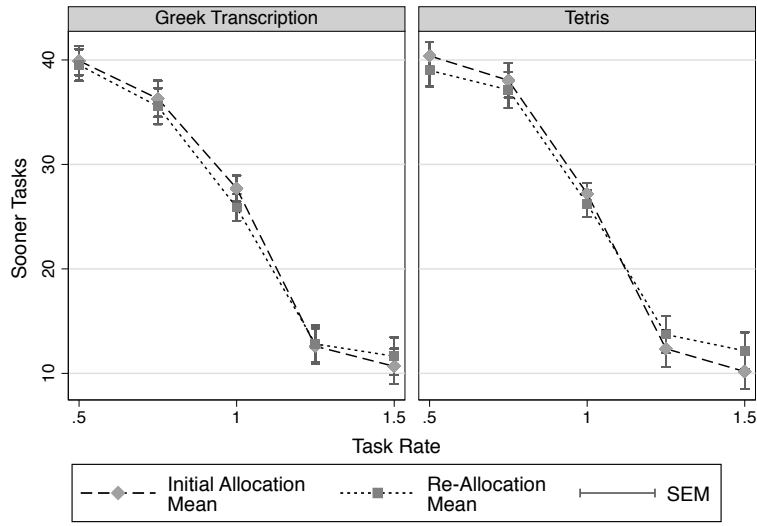
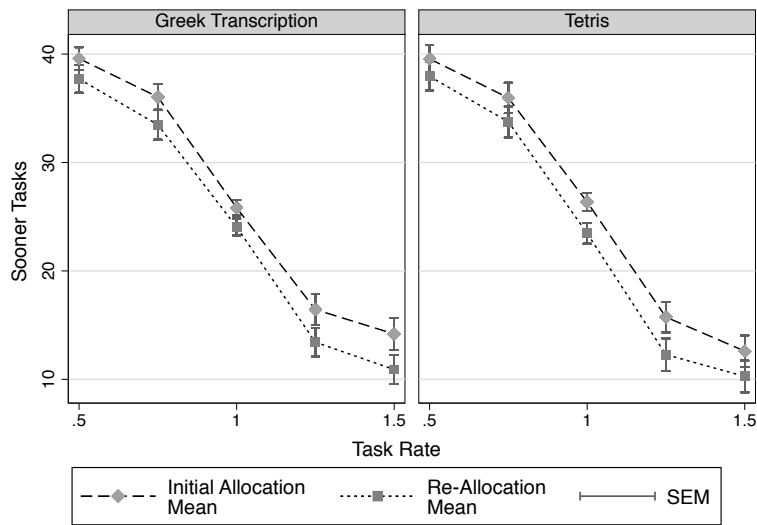


Figure A3: Commitment Demand: Full Effort Data Set

Panel A: Commit (=0)



Panel B: Commit (=1)



## **C Instructions**

### **C.1 Week 1 Effort Instructions**

#### **Welcome:**

Thank you for participating in our experiment. We will begin shortly.

#### **Eligibility for this study:**

To be in this study, you need to meet these criteria: You must be willing to participate for six consecutive weeks. Participation will require your presence on six consecutive Thursdays for at least 10 minutes per week for an average of 60 minutes. Weeks 1 (today) and 4 will occur in the xlab. Weeks 2,3,5, and 6 will occur at any computer that has access to the Internet.

You must be willing to receive your payment from this experiment as one single completion payment at the end of the study. Payments will be made one week after the final session, on Thursday, March 22. You will return to the xlab to receive this payment.

If you do not meet these criteria, please inform us of this now.

#### **Informed Consent**

Placed in front of you is an informed consent form to protect your rights as a subject. Please read it. If you would like to choose not to participate in the study you are free to leave at this point. If you have any questions, we can address those now. We will pick up the forms after the main points of the study are discussed.

#### **Anonymity**

Your anonymity in this study is assured. Your name will never be recorded or connected to any decision you make here today. Your email will be collected in order to send reminder emails. After the study, your email information will be destroyed and will not be connected to your responses in the experiment.

## Rules

Please turn your cell phones off. If you have a question at any point, just raise your hand. Please put away any books, papers, computers, etc. There will be a quiz once we have finished with the instructions. If it is clear that you do not understand the instructions when we review your answers, you will be emailed and removed from the study.

## Your Earnings

If you complete all six weeks of participation, a completion payment of \$100 will be provided. You may receive additional earnings during the experiment. If you choose to end your participation before the six weeks are complete, please report this to study administrators, and you will receive a minimum payment of \$10.

All payments will be made one week after the final session, on Thursday March 22. You will return to the xlab to receive this payment.

## Jobs

In this study there are two types of jobs, Job 1 and Job 2. These jobs will be completed over time. Some portion of the jobs may be completed sooner, and some portion of the jobs may be completed later depending on your choices and chance. Importantly, some tasks for each job must be completed in each week. That is, as mentioned before, your participation is required in each of the six consecutive weeks of the study.

### Job 1:

In Job 1 you are asked to transcribe letters from a greek text. Greek text will appear in the Transcription Box on your screen. For each letter you will need to find and select the corresponding letter and enter it into the Completion Box on your screen. One task is one row of greek text. For the task to be complete your accuracy must be 80% or better.

## **Job 2:**

In Job 2 you are asked to play a tetris game. Blocks of different shapes drop from the top of the task screen into a box. Each block is made up of four small squares arranged to make a larger square, an L-shape or a column. As the blocks fall they can be rotated (by pressing the up arrow key), moved horizontally (by pressing the left and right arrow keys), or moved down more quickly (by pressing the down arrow key). Your goal is to fill a entire horizontal line with parts of the blocks. When a horizontal line is filled, that line is "destroyed," moving the rest of the placed pieces down by one square. If a line remains incomplete, another line must be finished above it. The more lines that stand incomplete, the higher the blocks above them stack, reducing the space in which falling shapes can be manipulated. Eventually the blocks reach the top of the screen and the game ends. One task will be 4 lines of blocks completed. If a game ends before a task is complete, the completed lines will be counted in the subsequent game.

**Practice:** We will now spend a few minutes practicing both jobs on the computer. Before we continue, you will be asked to register using your email by clicking "register" once you open the experiment. Make sure that you enter a valid email address.

## The Experiment Timeline

Now that you've tried Job 1 and Job 2, let's consider the timeline of the study. Along the way we will discuss a few important details of how the study works.

*Note: Minimum Work for each week*

In each week (including today), you are required to complete a minimum number of tasks of both Job 1 and Job 2.

### Today (Week 1):

Once your minimum work is complete, you will be asked to make a series of 5 decisions for each job. In these decisions you are asked to allocate tasks between one week from today (Week 2) and two weeks from today (Week 3). You will make 5 decisions for both Job 1 and Job 2.

In each decision you are free to allocate your tasks as you choose. Note that this allocation decision does not include the minimum work for each week, which you must also complete. You will choose by moving a slider to your desired allocation. We will now practice on the computer.



3

Please use the slider to allocate tasks between Week 2 and Week 3.



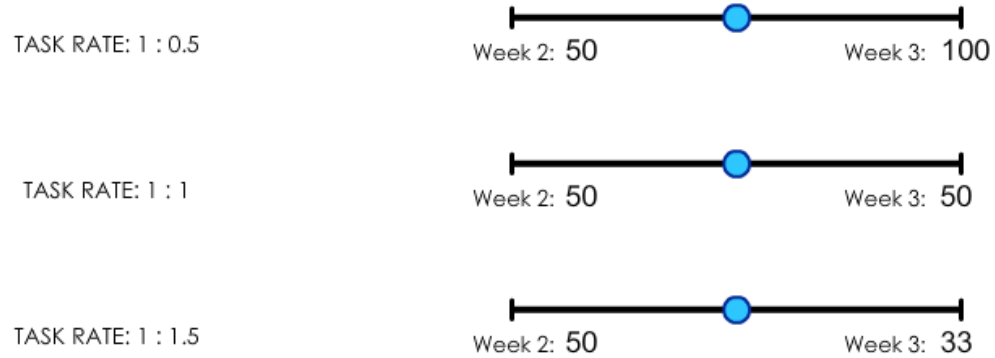
Submit

## Task Rates:

In the example decision above every task you allocate to Week 2 reduces the number of tasks allocated to Week 3 by one. This is what we will refer to as a 1:1 task rate. The task rate will vary across your decisions. For example, the task rate may be 1:1.5, such that every task you allocate to Week 2 reduces the number of tasks allocated to Week 3 by 1.5. Or, the task rate may be 1:0.5, such that every task you allocate to Week 2 reduces the number of tasks allocated to Week 3 by 0.5. For simplicity, the task rates will always be represented as 1:X, and you will be fully informed of the value of X when making your decisions. Please practice with the different allocations using the computer.

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Please use the sliders to allocate tasks between Week 2 and Week 3.



Submit

## Week 2 (One Week From Today):

Week 2, one week from today, will occur online. You will receive an email with instructions on how to access the website with the jobs. You will again complete your minimum work. You will be asked again to make 5 allocation decisions for each job. Exactly one of your 20 total allocation decisions will be implemented. That is, we will implement one decision from Week 1 for Job 1, or one decision from Week 2 for Job 1, or one decision from Week 1 for Job 2, or one decision from Week 2 for Job 2.

We will discuss how this allocation decision is chosen shortly. We refer to this allocation decision as the "**decision-that-counts.**" The tasks you allocated to Week 2 in the decision-that-counts must be completed. If you do not return or do not complete the tasks in Week 2, you cannot complete the study, and you will receive only the minimum payment of \$10. In order for your tasks in Week 2 to be counted, they must be submitted by midnight on February 16th, 2012.

## **Week 3, Two Weeks From Today:**

Week 3, two weeks from today, will occur online. You will receive an email with instructions on how to access the website with the jobs. You will again complete your minimum work. Then, you must complete the tasks you allocated in the decision-that-counts. If you do not return or do not complete the tasks in Week 3, you cannot complete the study, and you will receive only the minimum payment of \$10. In order for your tasks in Week 3 to be counted, they must be submitted by midnight on February 23rd, 2012.

## **Choosing the Decision-That-Counts:**

To summarize: In Week 1 (today), you will make 5 allocation decisions for both Job 1 and Job 2 for different task rates. In Week 2, you will also make 5 allocation decisions for both Job 1 and Job 2 for different task rates.

Therefore, you will make 20 total allocation decisions. As stated above, we will choose only one of these decisions as the decisions-that-counts. That is, we will either implement one decision from Job 1 or one decision from Job 2, but not both.

### **There are three stages to determine the decision-that-counts.**

1. First, we will choose if the decision-that-counts will come from Week 1 or Week 2. To do this, we will pick a random number from 1 to 10. If the number is 1, then the decision-that-counts will come from your Week 1 allocations. If the number is 2,3,4,5,6,7,8,9 or 10, then the decision-that-counts will come from your Week 2 allocations. Therefore, the decision-that-counts will come from Week 1 with a 10 percent chance and the decision-that-counts will come from Week 2 with a 90 percent chance.
2. Second, we will choose if the decision-that-counts will come from Job 1 or Job 2. To do this we will pick a second random number from 1 to 2. If the number is 1 then the decision-that-counts will come from Job 1. If the number is 2, then the decision-that-counts will come from Job 2. Therefore, the decision-that-counts is equally likely to come

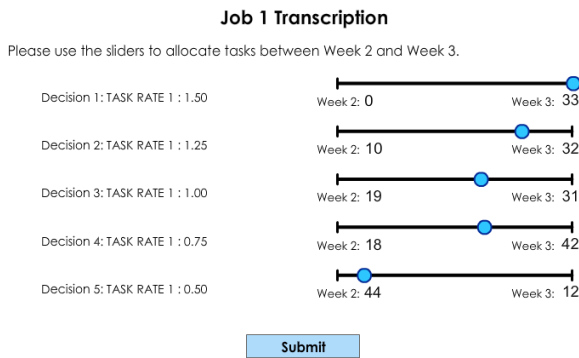
from Job 1 and Job 2.

- Third, we will choose the decision-that-counts from the 5 allocations you made in the chosen week and the chosen job. To do this, we will pick a third random number from 1 to 5. Therefore, within the chosen week and chosen job, every allocation is equally likely to be chosen as the decision-that-counts.

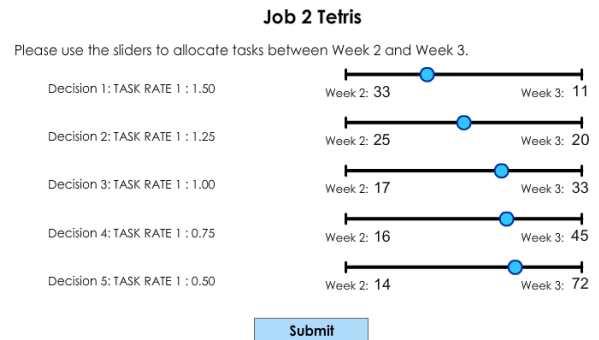
For example, consider the following allocation examples. Imagine that your allocations were shown in the following diagram for Weeks 1 and 2. Now, imagine that we determine the decision-that-counts.

### Week 1 Allocations

8

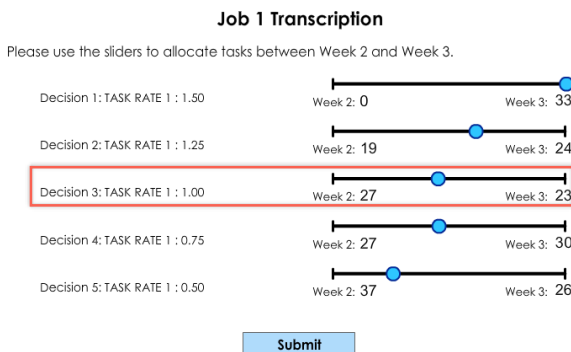


9

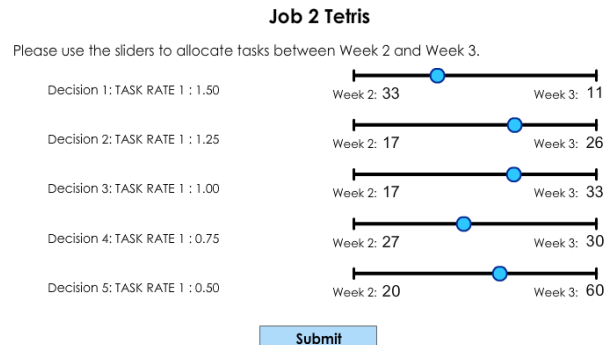


### Week 2 Allocations

8



9



- Following the first step above, we would first generate a random number from 1 to 10 to determine whether the Week 1 or the Week 2 allocations will be implemented. If the

number is 1, then the decision-that-counts will come from your Week 1 allocations. If the number is 2,3,4,5,6,7,8,9 or 10, then the decision-that-counts will come from your Week 2 allocations. Imagine the number is 7, such that your Week 2 allocations will be implemented.

2. Following the second step above, we would generate a random number from 1 to 2 to determine the job of the decision-that-counts. If the number is 1 then the decision that counts will come from Job 1. If the number is 2, then the decision that counts will come from Job 2. Imagine the number is 1, such that the your Job 1 allocations will be implemented.
3. Following the third step above, we would generate a random number from 1 to 5 to determine the decision-that-counts from your Week 2 allocations for Job 1. Imagine this number is 3 such that **the decision-that-counts would then be third allocation decision from your Week 2 allocations for Job 1**

**In Week 2, you would be required to complete 27 tasks of Job 1 and in Week 3 you would be required to complete 23 tasks of Job 1.**

*Note that these tasks will be in addition to the minimum work that you will be required to complete for both jobs in both weeks.*

**REMEMBER: EACH DECISION COULD BE THE  
DECISION-THAT-COUNTS SO TREAT EACH DECISION AS IF IT WAS  
THE ONE DETERMINING YOUR TASKS.**

## Recap:

- You will be participating in a six week study that requires participation one day per week on six consecutive weeks.
- You will receive a completion payment of \$100 at the end of the study by check one week after Week 6. You will return to the xlab on March 22, 2012 to receive this payment.
- If you choose to no longer participate, or do not complete the jobs you chose, you will receive only a minimum payment of \$10 by check one week after Week 6. You will return to the xlab on March 22, 2012 to receive this payment.
- There are two possible jobs in the study. Job 1 is transcription of greek letters. Job 2 is a tetris game.
- In each week, you will be asked to complete minimum work for each job.
- In Week 1, today, you will be asked to make a series of allocation decisions for both Job 1 and Job 2. You will allocate tasks to Weeks 2 and 3 at various task rates.
- In Week 2, you will again make allocation decisions.
- One of your allocation decisions will be chosen at random as the decision-that-counts and your allocation will determine the tasks that you complete in Weeks 2 and 3.
- One of your Week 1 allocations will be implemented with 10 percent chance while one of your Week 2 allocations will be implemented with 90 percent chance.
- Weeks 4, 5, and 6 will mirror Weeks 1, 2, and 3. In Week 4 you will make allocation decisions. In Week 5, you will again make allocation decisions and one of your allocation decisions will be chosen at random as the decision-that-counts. Your allocation will determine the jobs that you complete in Weeks 5 and 6.

- One week after week 6, you will receive your completion payment of \$100. You will return to the xlab on March 22, 2012 to receive this payment.

## **Consent**

Now that we have explained the study, you are free to leave if you would like to choose not to participate in the study. Otherwise, please sign the consent form and we will pick these up now.

## **Minimum Work**

Now you will complete your minimum work for each job for this week. For each job, we ask that you complete 10 tasks.

## **Reminder of Timeline**

Today you will be asked to make a series of 5 allocation decisions for both Job 1 and Job 2. In these decisions you are asked to allocate tasks between one week from today (Week 2) and two weeks from today (Week 3).

In each decision you are free to allocate your tasks as you choose. The allocations do not include the minimum amount of work for each job. You will choose by moving a slider to your desired allocation.

## **Allocations**

In the sliders on the screen, you will be asked to make 5 allocations for Job 1. Then, you will be asked to make 5 allocation decisions for Job 2.

Remember each decision could be the decision-that-counts, so please make each decision as if it were the one that determines your tasks.



## C.2 Week 1 Money Instructions

Thank you for completing your allocations. On the following screens we would like to ask you several additional questions allocating money over time. Your decisions in this portion of the study are completely unrelated to your allocations over Job 1 and Job 2 and will be paid separately.

You must be willing to receive your payment for this study by cash provided to you in the xlab by Professor Ned Augenblick of the Haas School of Business. You will be required to return to the xlab on the dates indicated to complete the study and so your choice of payments will not require you to arrive any extra times.

### Earning Money

To begin, you will be given a \$10 thank-you payment, just for participating in this study! You will receive this thank-you payment in two equally sized payments of \$5 each. The two \$5 payments will come to you at two different times. These times will be determined in the way described below.

In this portion of the study, you will make 15 choices over how to allocate money between three possible dates:

- 1) February 9th (today - week 1),
- 2) March 1st (three weeks from today - week 4)
- 3) March 22nd (six weeks from today - week 7).

Note that these are all days that you will be in the xlab. In each decision, you will allocate money between two of these dates. In the first set of five decisions, you will allocate money between week 1 (today) and week 4. In the second set, you will allocate money between week 1 (today) and week 7. In the third set, you will allocate money between week 4 and week 7. This means you could be receiving payments as early as today, and as late as the week 7.

Once all 15 decisions have been made, we will randomly select one of the 15 decisions as the decision-that-counts. We will use the decision-that-counts to determine your actual earnings.

Note, since all decisions are equally likely to be chosen, you should make each decision as if it will be the decision-that-counts.

When calculating your earnings from the decision-that-counts, we will add to your earnings the two \$5 thank you payments. Thus, you will always get paid at least \$5 at the chosen earlier time, and at least \$5 at the chosen later time.

**IMPORTANT:** All payments you receive will be paid in cash in the xlab. On the scheduled day of payment, you will come to the xlab for the regular schedule of the study. Hence, you will not be asked to make any special arrangements to receive payment from this portion of the study. You will receive your payment from Professor Ned Augenblick.

On your desk are two envelopes: one for the sooner payment and one for the later payment. Please take the time now to write your participant ID on them.

## How It Works:

In the following three screens you are asked to make 15 decisions involving payments over time. Each row is a decision and is numbered from 1 to 15.

Each row will feature a series of options. Each option consists of a sooner payment AND a later payment. You are asked to pick your favorite option in each row by moving the slider to your desired location. You should pick the combination of sooner payment AND later payment that you prefer the most.

Note that there is a trade-off between the sooner payment and the later payment. As the sooner payment goes down, the later payment goes up. All you have to do for each decision is choose which combination of sooner and later payment you prefer the most by moving the slider to that location.

Once all 15 of your decisions are complete, we will choose one at random to be the decision-that-counts. Your chosen allocation will be implemented.

Consider if the decision-that-counts was the third decision, and in that decision, you allocated \$11 on February 9th and \$10.50 on March 1st. Then, on February 9th, we would place \$11 along with your \$5 minimum payment, making \$16.00, into your first envelope. This envelope will be given to you on February 9th (today) in the xlab. On March 1st, we would place \$10.50 along with your \$5 minimum payment, making \$15.50, into your second envelope. This envelope will be given to you on March 1st when you return to the xlab. Recall that this will not require you to make any special arrangements to receive payment as you will be returning to the laboratory as part of the regular schedule of the study.

Once your payments have been determined, you will write the amounts and dates on the inside of the two envelopes. When you receive your payments you can guarantee there have been no clerical errors by checking against the amounts and dates you wrote.

Remember that each decision could be the decision-that-counts! It is in your interest to treat each decision as if it could be the one that determines your payment.

## C.3 Week 1 Quiz

### Quiz

Please complete the quiz in order to make sure that you understand the allocation decisions and the timeline of the study.

Participant #

1. How many weeks are you required to participate?
2. In which weeks are you asked to come to the xlab to participate?
3. In which weeks are you asked to participate online and not come to the xlab?
4. Will you have to complete minimum work for each job in each week?
5. You will make allocation decisions for Weeks 2 and 3 both today and in Week 2. What is the percent chance that one of your Week 2 allocations will be implemented?
6. If you face a 1:2 task rate for allocations between Weeks 2 and 3, every task you allocate to Week 2 decreases by how many the number of tasks you allocate to Week 3?
7. You will make allocations for each job. Apart from your minimum work, will you complete any tetris tasks if a transcription job allocation is chosen as the decision-that-counts.

## **C.4 Week 4 Effort Instructions**

### **Welcome:**

Thank you for returning to the experiment. We will begin shortly.

### **Eligibility for this study:**

To continue in this study, you need to meet these criteria: You must be willing to participate for three consecutive weeks. Participation will require your presence on three consecutive Fridays for at least 10 minutes per week for an average of 60 minutes. Week 4 (today) will occur in the xlab. Weeks 5 and 6 will occur at any computer that has access to the Internet.

You must be willing to receive your payment from this experiment as one single completion payment at the end of the study. Payments will be made one week after the final session, on Friday, March 23. You will return to the xlab to receive this payment.

If you do not meet these criteria, please inform us of this now.

### **Your Earnings**

If you complete all six weeks of participation, a completion payment of \$100 will be provided. You may receive additional earnings during the experiment. If you choose to end your participation before the six weeks are complete, please report this to study administrators, and you will receive a minimum payment of \$10.

All payments will be made one week after the final session, on Friday March 23. You will return to the xlab to receive this payment.

### **Jobs**

In this study there are two types of jobs, Job 1 and Job 2. These jobs will be completed over time. Some portion of the jobs may be completed sooner, and some portion of the jobs may be completed later depending on your choices and chance. Importantly, some tasks for each job must be completed in each week. That is, as mentioned before, your participation is required

in each of the six consecutive weeks of the study.

### **Job 1:**

In Job 1 you are asked to transcribe letters from a greek text.

### **Job 2:**

In Job 2 you are asked to play a tetris game.

## **The Experiment Timeline**

*Note: Minimum Work for each week*

In each week (including today), you are required to complete a minimum number of tasks of both Job 1 and Job 2.

### **Today (Week 4):**

Once your minimum work is complete, you will be asked to make a series of 5 decisions for each job. In these decisions you are asked to allocate tasks between one week from today (Week 5) and two weeks from today (Week 6). You will make 5 decisions for both Job 1 and Job 2.

In each decision you are free to allocate your tasks as you choose. Note that this allocation decision does not include the minimum work for each week, which you must also complete.

### **Task Rates:**

For one example task rate, every task you allocate to Week 6 reduces the number of tasks allocated to Week 5 by one. This is what we will refer to as a 1:1 task rate. The task rate will vary across your decisions. For example, the task rate may be 1:1.5, such that every task you allocate to Week 6 reduces the number of tasks allocated to Week 5 by 1.5. Or, the task rate may be 1:0.5, such that every task you allocate to Week 6 reduces the number of tasks allocated to Week 5 by 0.5. For simplicity, the task rates will always be represented as 1:X, and you will be fully informed of the value of X when making your decisions.

### **Week 5 (One Week From Today):**

Week 5, one week from today, will occur online and follows week 2 of the experiment. You will receive an email with instructions on how to access the website with the jobs. You will again complete your minimum work. You will be asked again to make 5 allocation decisions for each job. Exactly one of your 20 total allocation decisions will be implemented. That is, we will implement one decision from Week 4 for Job 1, or one decision from Week 5 for Job 1, or one decision from Week 4 for Job 2, or one decision from Week 5 for Job 2.

We will discuss how this allocation decision is chosen shortly. We refer to this allocation



decision as the "**decision-that-counts.**" The tasks you allocated to Week 5 in the decision-that-counts must be completed. If you do not return or do not complete the tasks in Week 5, you cannot complete the study, and you will receive only the minimum payment of \$10. In order for your tasks in Week 5 to be counted, they must be submitted by midnight on March 9th, 2012.

## **Week 6, Two Weeks From Today:**

Week 6, two weeks from today, will occur online and follows week 3 of the experiment. You will receive an email with instructions on how to access the website with the jobs. You will again complete your minimum work. Then, you must complete the tasks you allocated in the decision-that-counts. If you do not return or do not complete the tasks in Week 6, you cannot complete the study, and you will receive only the minimum payment of \$10. In order for your tasks in Week 6 to be counted, they must be submitted by midnight on March 16th, 2012.

## **Choosing the Decision-That-Counts:**

To summarize: In Week 4 (today), you will make 5 allocation decisions for both Job 1 and Job 2 for different task rates. In Week 5, you will also make 5 allocation decisions for both Job 1 and Job 2 for different task rates.

Therefore, you will make 20 total allocation decisions. As stated above, we will choose only one of these decisions as the decisions-that-counts. That is, we will either implement one decision from Job 1 or one decision from Job 2, but not both.

The decision-that-counts will be chosen using a similar method to the one used in Week 2. **However, this week, you will make a set of new decisions that affect the precise way that the decision-that-counts is chosen.** To understand these new decisions, please recall how the decision-that-counts was chosen in Week 2:

## **How the decision-that-counts was chosen in Week 2**

We used 3 steps to choose the decision-that-counts in Week 2.

1. First, we chose if the decision-that-counts came from the sooner week (Week 1) or the later week (Week 2) allocations. To do this, we picked a random number from 1 to 10. If the number was 1, then the decision-that-counts came from the allocations from the sooner week (Week 1). If the number is 2,3,4,5,6,7,8,9 or 10, then the decision-that-counts came from the allocations from the later week (Week 2). Therefore, the decision-that-counts came from the sooner week with a 10 percent chance and the decision-that-counts came from the later week with a 90 percent chance. **This is the part of the choosing the decision-that-counts that you will be able to affect in the new set of decisions this week.**
2. Second, we chose if the decision-that-counts came from Job 1 or Job 2. To do this, we picked a second random number from 1 to 2. If the number was 1 then the decision-that-counts came from Job 1. If the number was 2, then the decision-that-counts came from Job 2. Therefore, the decision-that-counts was equally likely to come from Job 1 and Job 2.
3. Third, we chose the decision-that-counts from the 5 allocations you made in the chosen week and the chosen job. To do this, we picked a third random number from 1 to 5. Therefore, within the chosen week and chosen job, every allocation was equally likely to be chosen as the decision-that-counts.

## **How the decision-that-counts will be chosen in Week 5**

In Week 5, the decision that counts will be chosen in a similar way to Week 2 with one important difference. Today, you will make a set of 15 decisions that can affect the **first step of the process**. In Week 2, there was a 10 percent chance that the decision-that-counts would come from your sooner (Week 1) allocations. In Week 5, based on your decisions, there will either be a 10 percent chance or a 90 percent chance that decision-that-counts will come from your sooner (Week 4) allocations. *That is, your decisions will change the likelihood that one of your Week 4 allocations is chosen as the decision-that-counts.*

For example, in one of the decisions, you will simply be asked to choose which option you prefer:

1) a 10 percent chance that decision-that-counts will come from your Week 4 allocations (and 90 percent chance that it comes from Week 5).

2) a 90 percent chance that decision-that-counts will come from your Week 4 allocations (and 10 percent chance that it comes from Week 5)

This decision measures your preference about which choices will be allocated. For example, if you would prefer that one of your week 5 allocations were chosen rather than a week 4 allocation, you should choose the first option. Please take a second to think about this decision.

The other decisions measure *the strength* of your preference about which choices will be allocated. In these decisions, you will make this same decision but with additional payments added to one of the two options. So, for example, you will be asked to choose which option you prefer:

1) a 10 percent chance that decision-that-counts will come from your Week 4 allocations (and 90 percent chance that it comes from Week 5).

2) a 90 percent chance that decision-that-counts will come from your Week 4 allocations (and 10 percent chance that it comes from Week 5) **plus \$3**.

For example, if you would very strongly prefer that one of your Week 5 allocations were chosen rather than a Week 4 allocation, you might still choose the first option, even though you could get an extra \$3 for choosing the second option. We will choose one of your 15 percentage decisions to be implemented **at random**. This implemented decision will be used to determine the percentage chance that the decision-that-counts comes from your Week 4 allocations. Furthermore, if your implemented decision includes an additional payment, this additional payment will be added to your final \$100 completion check.

**REMEMBER: EACH DECISION COULD BE IMPLEMENTED SO TREAT  
EACH DECISION AS IF IT WAS GOING TO BE IMPLEMENTED.**

## Recap:

- You will be continuing in a study that requires participation one day per week on three consecutive weeks.
- You will receive a completion payment of \$100 at the end of the study by check one week after Week 6. You will return to the xlab on March 23, 2012 to receive this payment.
- If you choose to no longer participate, or do not complete the jobs you chose, you will receive only a minimum payment of \$10 by check one week after Week 6. You will return to the xlab on March 23, 2012 to receive this payment.
- There are two possible jobs in the study. Job 1 is transcription of greek letters. Job 2 is a tetris game.
- In each week, you will be asked to complete minimum work for each job.
- In Week 4, today, you will be asked to make a series of allocation decisions for both Job 1 and Job 2. You will allocate tasks to Weeks 5 and 6 at various task rates.
- In Week 5, you will again make allocation decisions.
- One of your allocation decisions will be chosen at random as the decision-that-counts and your allocation will determine the tasks that you complete in Weeks 5 and 6.
- You will be asked to make decisions about the percentage chance that the decision-that-counts will come from your Week 4 allocations. You will make a series of 15 decisions between (10% Week 4) and (90% Week 4) with additional payments potentially added to the options. One of these decisions will be implemented. If the decision that is implemented includes an additional payment, this will be added to your completion payment.
- One week after Week 6, you will receive your completion payment. You will return to the xlab on March 23, 2012 to receive this payment.

## Minimum Work

Now you will complete your minimum work for each job for this week. For each job, we ask that you complete 10 tasks.

## Allocations

Today you will be asked to make a series of 5 allocation decisions for both Job 1 and Job 2. In these decisions you are asked to allocate tasks between one week from today (Week 5) and two weeks from today (Week 6).

In each decision you are free to allocate your tasks as you choose. The allocations do not include the minimum amount of work for each job. You will choose by moving a slider to your desired allocation.

In the sliders on the screen, you will be asked to make 5 allocations for Job 1. Then, you will be asked to make 5 allocation decisions for Job. Remember each decision could be the decision-that-counts, so please make each decision as if it were the one that determines your tasks.

## Determining how the decision-that-counts will be chosen in Week 5

On the screen you will be asked to choose between a 10% or a 90% chance that the decision-that-counts comes from today's allocations (Week 4) rather than the allocations you will make next week (Week 5). In each decision, you are also given an additional payment for choosing one of the two options. Remember each decision could be implemented, so please make the decision as if it was determining the percent chance and your additional payment.

## C.5 Week 4 Money Instructions

Thank you for completing your allocations. On the following screen we would like to ask you several additional questions allocating money over time. Your decisions in this portion of the study are completely unrelated to your allocations over Job 1 and Job 2 and will be paid separately.

You must be willing to receive your payment for this study by cash provided to you in the xlab by Professor Ned Augenblick of the Haas School of Business. You will be required to return to the xlab on the dates indicated to complete the study and so your choice of payments will not require you to arrive any extra times.

### Earning Money

To begin, you will be given a \$10 thank-you payment, just for participating in this study! You will receive this thank-you payment in two equally sized payments of \$5 each. The two \$5 payments will come to you at two different times. These times will be determined in the way described below.

In this portion of the study, you will make 5 choices over how to allocate money between two points in time:

- 1) March 2nd
- 2) March 23rd

Note that these are days that you will be in the xlab.

In each decision, you will allocate money between these dates. Once all 5 decisions have been made, we will randomly select one of the 5 decisions as the decision-that-counts. We will use the decision-that-counts to determine your actual earnings. Note, since all decisions are equally likely to be chosen, you should make each decision as if it will be the decision-that-counts.

When calculating your earnings from the decision-that-counts, we will add to your earnings the two \$5 thank you payments. Thus, you will always get paid at least \$5 on March 2st, and

at least \$5 on March 23nd.

**IMPORTANT:** All payments you receive will be paid in cash in the xlab. On the scheduled day of payment, you will come to the xlab for the regular schedule of the study. Hence, you will not be asked to make any special arrangements to receive payment from this portion of the study. You will receive your payment from Professor Ned Augenblick.

On your desk are two envelopes: one for the sooner payment and one for the later payment. Please take the time now to write your participant ID on them and study time/date on them.



## How It Works:

In the following screen you are asked to make 5 decisions involving payments over time. Each row is a decision and is numbered from 1 to 5.

Each row will feature a series of options. Each option consists of a sooner payment AND a later payment. You are asked to pick your favorite option in each row by moving the slider to your desired location. You should pick the combination of sooner payment AND later payment that you prefer the most.

Note that there is a trade-off between the sooner payment and the later payment. As the sooner payment goes down, the later payment goes up. All you have to do for each decision is choose which combination of sooner and later payment you prefer the most by moving the slider to that location.

Once all 5 of your decisions are complete, we will choose one at random to be the decision-that-counts. Your chosen allocation will be implemented.

Consider for example the first decision. If this was chosen as the decision that counts and your preferred allocation was \$11 on March 2st and \$10.50 on March 23nd, this would then be implemented. On March 2st, we would place \$11 along with your \$5 minimum payment, making \$16.00, into your first envelope. This envelope will be given to you on March 2st in the xlab. On March 23nd, we would place \$10.50 along with your \$5 minimum payment, making \$15.50, into your second envelope. This envelope will be given to you on March 23nd when you return to the xlab. Recall that this will not require you to make any special arrangements to receive payment as you will be returning to the laboratory as part of the regular schedule of the study.

Once your payments have been determined, you will write the amounts and dates on the inside of the two envelopes. When you receive your payments you can guarantee there have been no clerical errors by checking against the amounts and dates you wrote.

Remember that each decision could be the decision-that-counts! It is in your interest to treat each decision as if it could be the one that determines your payment.