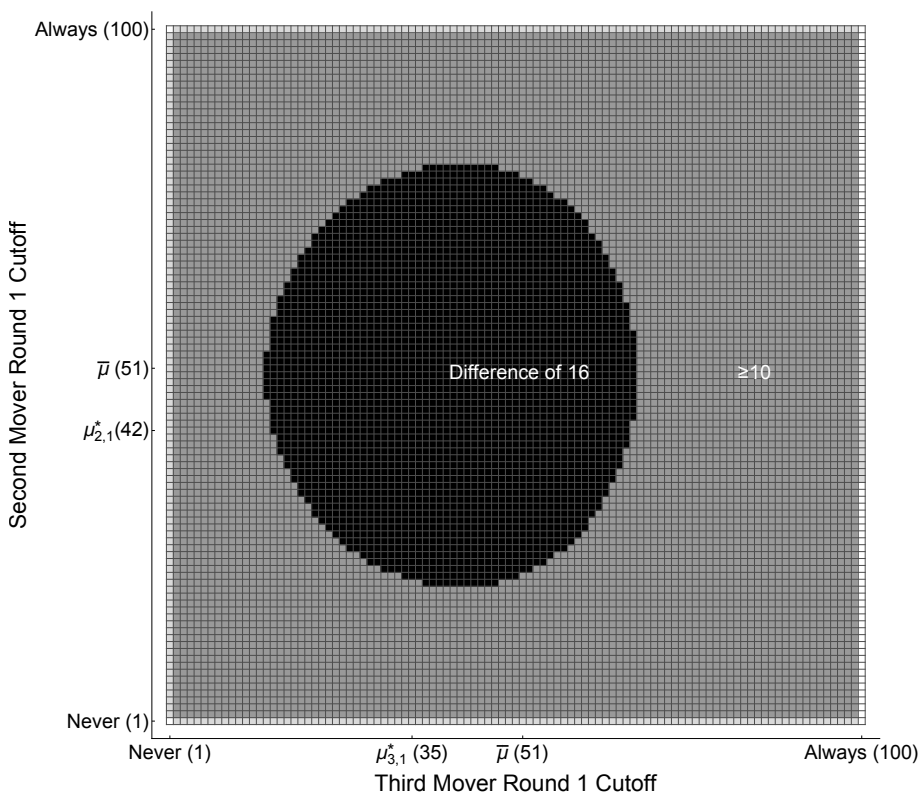
APPENDIX A. SUPPLEMENTARY TABLES AND FIGURES

A.1. **Invariance to quantitative beliefs.** Figure A1.1 shows the effect of the cutoffs in round one for the second and third mover on the best-response cutoffs for the first mover in round two. In particular the figure indicates the difference in best response between the first and second round, so $51 - \mu_{1,2}(\mu_{2,1}, \mu_{2,3})$. For most second- and third-mover responses close to the equilibrium the best response is identical. Even with substantially different beliefs about the cutoffs, the first mover should still have a difference in their first and second cutoffs of at least 10. The sole exceptions are those cases where the second and third movers are believed to use boundary cutoffs, either always or never switching.

FIGURE A1.1. Differences for First Mover Cutoffs (Round one to two) as a Function of Beliefs on Others' Cutoffs



A.2. **Experimental Design.** Overall allocation of subjects to session is given in Table A2.1.

Treatment	Type	Sessions	Subjects	Supergames
Selection	Game	4	66	1,386
No Selection	Decision	2	33	693
S-Across	Game	4	60	1,260
S-Within	Game	4	69	1,446
S-Explicit	Decision	2	36	756
S-Peer	Game	4	72	1,512
S-Simple-Random	Game	4	72	2,952
S-Simple-Fixed	Game	4	72	2,952
All		28	480	12,960

FIGURE A2.1. Experimental Design Table

A.3. **Robustness.** This appendix contains tables and figures that extend the analysis in the main text. Table A3.1 reports the same regressions as in Table 1 in the main text, but using data from supergames 6 to 20 instead of supergames 11 to 20. Table A3.2 extends the same analysis for players in the role of second- and third-movers, and finds very similar results. Table A3.3 replicates the analysis from Table 1 for the *S-Across* treatment, and Table A3.4 extends the analysis to include data from supergames 6 to 20. Tables A3.5 and A3.6 do the same for the *S-Explicit* treatment.

Table A3.7 report results from the *S-Within* treatment, in which subjects are informed about the actions taken by other players during the course of the supergame. In the *S-Within* treatment, the relevant conditioning variable should be the information that other people switched, and the passing of time per se does not convey direct actionable information. Table A3.8 extends the analysis to include data from supergames 6 to 20.

Tables A3.9 and A3.10 report results of supergame 21 behavior for subjects in the *S-Within* and *S-Peer* treatments, respectively. For both cases, we cannot reject the hypothesis that cutoffs are similar to the *Selection* treatment. We conclude that neither receiving strategic feedback during the path of play, nor discussing the optimal strategy with peers significantly affects behavior in supergame 21.

TABLE A3.1. Average Cutoff per Round for *No Selection* and *Selection* Treatments, First-Movers Only

Treatment	**Game Round**	**Theory**	**Supergame 6 to 20**			**Supergame 21**		
			Estimate	**Test (*p*-Value)**		**Estimate**	**Test (*p*-Value)**	
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \mu_t^{\star j}$
No Selection (Control)	Round 1, $\hat{\mu}_1^{NS}$	[51]	54.13 (2.40)	–	0.192	52.76 (2.48)	–	0.479
	Round 2, $\hat{\mu}_2^{NS}$	[51]	53.53 (2.42)	0.249	0.295	52.88 (2.48)	0.907	0.449
	Round 3, $\hat{\mu}_3^{NS}$	[51]	53.01 (2.46)	0.100	0.414	53.27 (2.48)	0.620	0.360
	Joint Tests:		0.197‡		0.201§	0.875‡		0.817§
Selection (Treatment)	Round 1, $\hat{\mu}_1^{S}$	[51]	46.92 (1.20)	**0.007**	**0.001**	43.45 (3.04)	**0.018**	**0.013**
	Round 2, $\hat{\mu}_2^{S}$	[35]	43.28 (1.23)	**0.000**	**0.000**	39.91 (3.04)	**0.001**	0.107
	Round 3, $\hat{\mu}_3^{S}$	[28]	38.92 (1.30)	**0.000**	**0.000**	36.32 (3.04)	**0.000**	**0.006**
	Joint Tests:		**0.000**‡		**0.000**§	**0.000**‡		**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 171/138/33 Total/*Selection/No Selection* first-mover subjects across supergames 6-20, and 55/22/33 in supergame 21. *Selection* treatment exclude subjects in the second- and third-mover roles. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame (H_0 : $\hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.2. Average Cutoff per Round for *Selection* Treatments, Second- and Third-Movers

Treatment	Game Round	Theory	Supergame 11 to 20			Supergame 21		
			Estimate	Test (*p*-Value)		Estimate	Test (*p*-Value)	
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \mu_t^{\star j}$
Selection, Second-Movers	Round 1, $\hat{\mu}_1^S$	[42]	44.64	**0.000**	**0.000**	46.09	0.066	0.145
			(0.68)			(2.80)		
	Round 2, $\hat{\mu}_2^S$	[31]	41.32	**0.000**	**0.000**	40.36	**0.001**	**0.001**
			(0.98)			(2.80)		
	Round 3, $\hat{\mu}_3^S$	[25]	38.00	**0.000**	**0.000**	35.18	**0.000**	**0.000**
			(1.40)			(2.80)		
	Joint Tests:		**0.000**‡		**0.000**§	**0.024**‡		**0.000**§
Selection, Third-Movers	Round 1, $\hat{\mu}_1^S$	[35]	43.79	**0.000**	**0.000**	45.50	**0.030**	**0.000**
			(1.31)			(2.57)		
	Round 2, $\hat{\mu}_2^S$	[28]	40.57	**0.000**	**0.000**	41.95	**0.001**	**0.000**
			(1.34)			(2.57)		
	Round 3, $\hat{\mu}_3^S$	[23]	37.63	**0.000**	**0.000**	36.82	**0.000**	**0.000**
			(1.40)			(2.57)		
	Joint Tests:		**0.000**‡		**0.000**§	**0.059**‡		**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 133/138 second-/third-mover subjects across supergames 11-20, and 22 second- and third-movers in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.3. Average Cutoff per Round for *S-Across* Treatment, First-Movers Only

Treatment	Game Round	Theory	Supergame 11 to 20				Supergame 21			
			Estimate	Test (p-Value)			Estimate	Test (p-Value)		
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\mu_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\mu_t^j = \mu_t^{\star j}$
S-Across	Round 1, $\hat{\mu}_1^{S(A)}$	[51]	49.26	0.082	0.255	0.375	51.80	0.807	0.068	0.809
			(1.93)				(3.31)			
	Round 2, $\hat{\mu}_2^{S(A)}$	[35]	45.37	**0.034**	0.320	**0.000**	49.45	0.458	**0.037**	**0.000**
			(2.00)				(3.31)			
	Round 3, $\hat{\mu}_3^{S(A)}$	[28]	41.30	**0.000**	0.390	**0.000**	45.35	**0.097**	**0.048**	**0.000**
			(2.11)				(3.31)			
	Joint Tests:		**0.000**‡			**0.000**§	**0.001**‡			**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 60 first-mover subjects across supergames 11-20, and 20 first-movers in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment (H_0 :$\hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.4. Average Cutoff per Round for *S-Across* Treatment, First-Movers Only

Treatment	Game Round	Theory	Supergame 6 to 20				Supergame 21			
			Estimate	Test (p-Value)			Estimate	Test (p-Value)		
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\mu_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\mu_t^j = \mu_t^{\star j}$
S-Across	Round 1, $\hat{\mu}_1^{S(A)}$	[51]	49.59	0.150	0.239	0.459	51.80	0.807	0.068	0.809
			(1.90)				(3.31)			
	Round 2, $\hat{\mu}_2^{S(A)}$	[35]	46.40	**0.015**	0.182	**0.000**	49.45	0.458	**0.037**	**0.000**
			(1.94)				(3.31)			
	Round 3, $\hat{\mu}_3^{S(A)}$	[28]	41.66	**0.000**	0.261	**0.000**	45.35	**0.097**	**0.048**	**0.000**
			(2.02)				(3.31)			
	Joint Tests:		**0.000**‡			**0.000**§	**0.001**‡			**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 60 first-mover subjects across supergames 6-20, and 20 first-movers in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment (H_0 :$\hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.5. Average Cutoff per Round for *S-Explicit* Treatment

Treatment	Game Round	Theory	Supergame 11 to 20				Supergame 21			
			Estimate	Test (*p*-Value)			Estimate	Test (*p*-Value)		
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\mu_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\hat{\mu}_t^j = \mu_t^{\star j}$
S-Explicit	Round 1, $\hat{\mu}_1^{S(E)}$	[51]	55.52 (2.47)	0.844	**0.001**	0.067	59.58 (4.55)	0.199	**0.004**	0.059
	Round 2, $\hat{\mu}_2^{S(E)}$	[34]	48.46 (2.49)	0.076	**0.054**	**0.000**	53.58 (4.55)	0.877	**0.016**	**0.000**
	Round 3, $\hat{\mu}_3^{S(E)}$	[17]	42.57 (2.55)	**0.000**	0.238	**0.000**	50.08 (4.55)	0.615	**0.015**	**0.000**
	Joint Tests:		**0.000**‡			**0.000**§	**0.000**‡			**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 36 subjects in the *S-Explicit* treatment across supergames 11-20, and 12 first-movers in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment (H_0 :$\hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.6. Average Cutoff per Round for *S-Explicit* Treatment

Treatment	Game Round	Theory	Supergame 6 to 20				Supergame 21			
			Estimate	Test (*p*-Value)			Estimate	Test (*p*-Value)		
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\mu_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\hat{\mu}_t^j = \mu_t^{\star j}$
S-Explicit	Round 1, $\hat{\mu}_1^{S(E)}$	[51]	55.49 (2.42)	0.698	**0.002**	0.063	59.58 (4.55)	0.199	**0.004**	0.059
	Round 2, $\hat{\mu}_2^{S(E)}$	[34]	48.88 (2.44)	0.134	**0.043**	**0.000**	53.58 (4.55)	0.877	**0.016**	**0.000**
	Round 3, $\hat{\mu}_3^{S(E)}$	[17]	43.84 (2.48)	**0.004**	0.083	**0.000**	50.08 (4.55)	0.615	**0.015**	**0.000**
	Joint Tests:		**0.000**‡			**0.000**§	**0.000**‡			**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 36 subjects in the *S-Explicit* treatment across supergames 6-20, and 12 first-movers in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment (H_0 :$\hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.7. Average Cutoff per Round and Number of In-Group Switches, *S-Within* Treatment

Treatment	**In-Group Switches**	**Theory**	**Supergame 11 to 20**			
			Estimates			
		$\mu^\star$	Round 1, $\hat{\mu}_{1s}^{S(W)}$	Round 2, $\hat{\mu}_{2s}^{S(W)}$	Round 3, $\hat{\mu}_{3s}^{S(W)}$	**Joint Te**
S-Within	Zero	[51]	42.91 **[0.000]**†	41.51 **[0.000]**†	39.35 **[0.000]**†	**0.001**
			(1.80)	(1.87)	(2.03)	
	One	[14]	35.66 **[0.000]**†	34.44 **[0.000]**†	34.09 **[0.000]**†	0.206
			(1.88)	(1.87)	(1.95)	
	Two	[3]	30.77 **[0.000]**†	29.95 **[0.000]**†	31.18 **[0.000]**†	0.813
			(2.76)	(2.25)	(2.26)	
	Joint Tests:		**0.000**‡	**0.000**‡	**0.000**‡	

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 69 subjects across supergames 11-20. †−P-Value of univariate significance tests of the theoretical predictions (H_0 :$\hat{\mu}_{ts}^{j} = \mu_{ts}^{\star j}$). ‡–Join test: Cutoffs are stationary across the treatment ($H_0 : \hat{\mu}_{1s}^{S(W)} = \hat{\mu}_{2s}^{S(W)} = \hat{\mu}_{3s}^{S(W)}$ across rounds, and $H_0 : \hat{\mu}_{t1}^{S(W)} = \hat{\mu}_{t2}^{S(W)} = \hat{\mu}_{t3}^{S(W)}$ across number of in-group switches).

TABLE A3.8. Average Cutoff per Round and Number of In-Group Switches, *S-Within* Treatment

Treatment	**In-Group Switches**	**Theory**	**Supergame 6 to 20**			
			Estimates			
		$\mu^\star$	Round 1, $\hat{\mu}_{1s}^{S(W)}$	Round 2, $\hat{\mu}_{2s}^{S(W)}$	Round 3, $\hat{\mu}_{3s}^{S(W)}$	**Joint Te**
S-Within	Zero	[51]	43.42 **[0.000]**†	42.15 **[0.000]**†	40.93 **[0.000]**†	**0.006**
			(1.68)	(1.72)	(1.86)	
	One	[14]	37.04 **[0.000]**†	37.04 **[0.000]**†	35.60 **[0.000]**†	0.192
			(1.73)	(1.72)	(1.79)	
	Two	[3]	34.67 **[0.000]**†	31.26 **[0.000]**†	32.53 **[0.000]**†	0.291
			(2.45)	(2.05)	(2.06)	
	Joint Tests:		**0.000**‡	**0.000**‡	**0.000**‡	

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 69 subjects across supergames 6-20. †−P-Value of univariate significance tests of the theoretical predictions (H_0 :$\hat{\mu}_{ts}^{j} = \mu_{ts}^{\star j}$). ‡–Join test: Cutoffs are stationary across the treatment ($H_0 : \hat{\mu}_{1s}^{S(W)} = \hat{\mu}_{2s}^{S(W)} = \hat{\mu}_{3s}^{S(W)}$ across rounds, and $H_0 : \hat{\mu}_{t1}^{S(W)} = \hat{\mu}_{t2}^{S(W)} = \hat{\mu}_{t3}^{S(W)}$ across number of in-group switches).

TABLE A3.9. Average Cutoff per Round in Supergame 21 for *S-Within* Treatment, First-Movers Only

Treatment	**Game Round**	**Theory**	**Supergame 21**			
			Estimate	**Test (*p*-Value)**		
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\hat{\mu}_t^j = \mu_t^{\star j}$
S-Within	Round 1, $\hat{\mu}_1^{S(W)}$	[51]	39.57 (3.32)	**0.001**	0.413	**0.001**
	Round 2, $\hat{\mu}_2^{S(W)}$	[35]	37.00 (3.32)	**0.004**	0.540	0.547
	Round 3, $\hat{\mu}_3^{S(W)}$	[28]	34.09 (3.32)	**0.001**	0.639	0.067
	Joint Tests:		**0.005**‡			**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 23 first-mover subjects in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment (H_0 :$\hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

TABLE A3.10. Average Cutoff per Round for *S-Peer* Treatment on Supergame 21, First-Movers Only

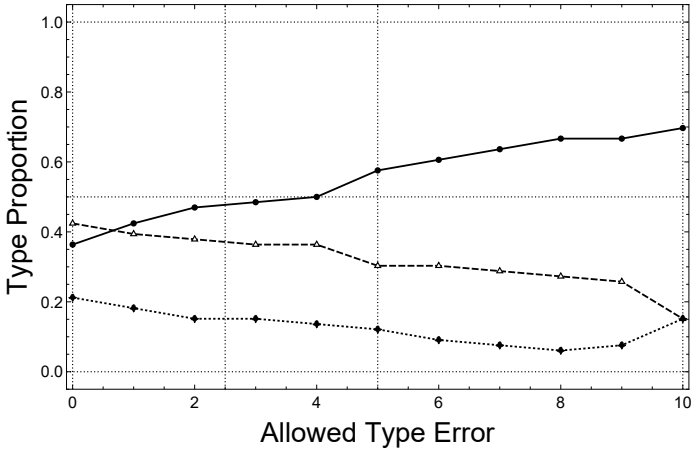
Treatment	**Game Round**	**Theory**	**Supergame 21**			
			Estimate	**Test (*p*-Value)**		
		$\mu^\star$	$\hat{\mu}$	$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$\hat{\mu}_t^j = \hat{\mu}_t^S$	$\hat{\mu}_t^j = \mu_t^{\star j}$
S-Peer	Round 1, $\hat{\mu}_1^{S(A)}$	[51]	46.13 (3.31)	0.187	0.577	0.140
	Round 2, $\hat{\mu}_2^{S(A)}$	[35]	41.5 (3.31)	**0.035**	0.739	**0.049**
	Round 3, $\hat{\mu}_3^{S(A)}$	[28]	37.17 (3.31)	**0.005**	0.859	**0.001**
	Joint Tests:		**0.000**‡			**0.000**§

Note: Figures derived from a single random-effects least-squares regression for all chosen cutoffs against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). There are 24 first-mover subjects in supergame 21. †−Univariate significance tests columns examine differences from either the first-round coefficient from the control (H_0 :$\hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment (H_0 :$\hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction (H_0 :$\hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).

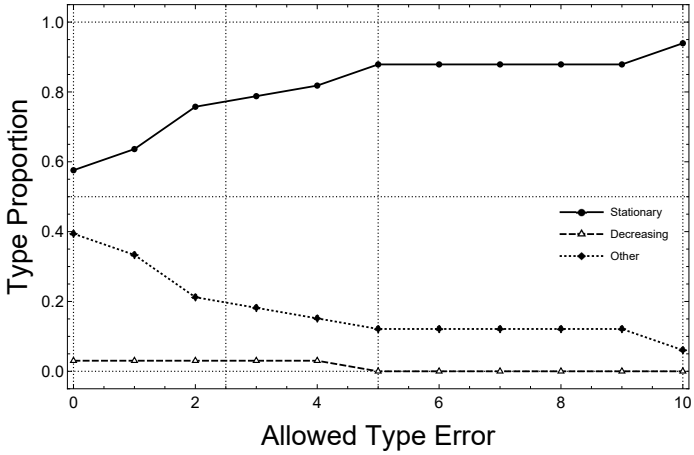
TABLE A3.11. Average Cutoff in Last Round for *Within* and *Between* Treatments (Supergame 40)

Treatment	Game Round	Theory	Between			Within		
			Estimate	*p*-values		Estimate	*p*-values	
		$\mu^\star$	$\hat{\mu}$	$H_0 : \hat{\mu}_j^W = \hat{\mu}_1^W$	$H_0 : \hat{\mu}_t^j = \mu_t^{\star j}$	$\hat{\mu}$	$H_0 : \hat{\mu}_t^j = \hat{\mu}_1^{NS}$	$H_0 : \hat{\mu}_t^j = \mu_t^{\star j}$
Within	Round 1, $\hat{\mu}_1^{NS}$	[51]	44.88	–	**0.033**	50.20	–	0.770
			(2.85)			(2.85)		
	Round 2, $\hat{\mu}_2^{NS}$	[32]	41.62	0.421	**0.001**	43.00	**0.077**	**0.000**
			(2.85)			(2.85)		
	Round 3, $\hat{\mu}_3^{NS}$	[22]	38.00	**0.090**	**0.000**	30.67	**0.000**	**0.003**
			(2.85)			(2.85)		
	Joint Tests:		**0.000**‡		**0.000**§	**0.000**‡		**0.000**§

Note: Figures derived from a single OLS regression ($N = 144$ subjects each making a single choice) against treatment-round dummies. Standard errors in parentheses, risk-neutral predicted cutoffs in square brackets (switch ball if value is lower than cutoff). †−Univariate significance tests columns examine differences from either the first-round coefficient from the control ($H_0 : \hat{\mu}_t^j = \hat{\mu}_1^{NS}$ for treatment j, round t), the first-mover coefficients from the *Selection* treatment ($H_0 : \hat{\mu}_t^j = \hat{\mu}_t^S$ for treatment j, round t) and the theoretical prediction ($H_0 : \hat{\mu}_t^j = \mu_t^{\star j}$). ‡–Joint test of stationary cutoffs across the supergame ($H_0 : \hat{\mu}_1^j = \hat{\mu}_2^j = \hat{\mu}_3^j$ for treatment j); §–Joint test of PBE cutoffs in supergame ($H_0 : 0 = \hat{\mu}_1^j - \mu_1^{\star j} = \hat{\mu}_2^j - \mu_2^{\star j} = \hat{\mu}_3^j - \mu_3^{\star j}$).



(A) Selection



(B) No Selection

FIGURE A4.1. Type Robustness to ϵ

A.4. **Type Classification Robustness.** In Figure A4.1 we indicate the three type categories as we vary the bandwidth parameter ϵ from 0 to 10.

Table A4.1 reports on the proportion of types as classified in the last five partial strategy supergames for each treatment. Rather than the full strategy method final supergames, we here take averages across supergames to assess the strategy cutoffs.

Following the paper we focus on the type specifications with an error bandwidth $\epsilon = 2.5$ (though we also provide data on $\epsilon = 0$ and $\epsilon = 5$).

For treatment *S-Simple-Random* a subject is *decreasing* if the difference in average cutoffs for *all* pairwise comparisons (first minus second-mover, first minus third-mover, and

second minus third-mover) are strictly positive; likewise, subject is ϵ-*decreasing* if all such differences are (weakly) greater than ϵ. For treatment *S-Within* subject is *decreasing* if the difference in average cutoffs for *all* pairwise comparisons (no switches minus 1 switch, no switches minus 2 switches, and 1 switch minus 2 switches) are strictly positive; and subject is ϵ-*decreasing* if all such differences are (weakly) greater than ϵ. For all other treatments subject is *decreasing* if minimum of (round 1 - round 2) cutoffs, irrespective of type, is strictly positive, and is ϵ-*decreasing* if minimum is larger than ϵ. Treatment *Selection* includes data from *S-Deliberation* as both treatment are identical up until cycle 21.

TABLE A4.1. Type Classifications on Last Five Cycles

	N_S	**Decreasing**			**Non-Decreasing**					
					Total			**Stationary**		
		Exact	$\epsilon = 2.5$	$\epsilon = 5$	Exact	$\epsilon = 2.5$	$\epsilon = 5$	Exact	$\epsilon = 2.5$	$\epsilon = 5$
No Selection	33	51.5%	**30.3%**	15.2%	48.5%	**69.7%**	84.8%	48.5%	**69.7%**	72.7%
Selection	138	30.4%	**26.1%**	24.6%	69.6%	**73.9%**	75.4%	34.8%	**47.8%**	53.6%
S-Across	60	61.7%	**50%**	36.7%	38.3%	**50%**	63.3%	38.3%	**45%**	51.7%
S-Explicit	36	80.5%	**61.1%**	41.7%	19.5%	**38.9%**	58.3%	19.5%	**30.6%**	36.1%
S-Within	69	69.6%	**55.1%**	50.7%	30.4%	**44.9%**	49.3%	24.6%	**42%**	46.4%
S-Simple-Random	72	48.6%	**40.3%**	34.7%	51.4%	**59.7%**	65.3%	26.4%	**43.1%**	55.6%

Note: Type classification based on cutoffs chosen in cycles 36-40 for *S-Simple-Random* and cycles 16-20 for all other treatments.

TABLE A5.1. Individual Regressions

Explanatory Variables		**(I) Sel. Only**		**(II) Sel.+NoSel.**		**(III) Sel.+NoSel.**	
Experienced Rematching	$\hat{\nu}^G_{1,10}$	0.037		0.063			
	$\hat{\nu}^G_{11,20}$	0.055		0.051			
Experienced Outcomes	$\hat{\nu}^H_{1,10}$	**0.363**	$^{\star\star}_{0.030}$	**0.277**	$^{\star\star}_{0.049}$	**0.341**	$^{\star\star\star}_{0.003}$
	$\hat{\nu}^H_{11,20}$	0.015		0.018			
Risk Aversion	$\hat{\rho}$	**-2.24**	$^{\star\star}_{0.046}$	**-2.12**	$^{\star\star}_{0.021}$	**-2.11**	$^{\star\star}_{0.017}$
No Selection	δ_{NoSel}	–		5.52		**7.23**	$^{\star\star}_{0.020}$
Constant		21.6		25.8		26.9	
N		66		91		91	
$\overline{R}^2$		0.141		0.198		0.214	

Note: Statistically significant variables indicated by stars ($\star$–10%;$\star\star$–5%; $\star\star\star$–1%) with p-values beneath them. $\overline{R}^2$ is the adjusted R-squared measure of fit.

A.5. **Effects from Experience and Risk Aversion.** For each ϵ-stationary subject we generate their experienced rematching ($\hat{\nu}^G_i$) and final ($\hat{\nu}^H_i$) outcomes, averaging across supergames 1–10 and supergames 11–20. Despite facing the same generating process in each treatment there is substantial subject variation in rematching and final outcomes in these blocks of ten supergames. For each individual subject variation in the average experiences can be used to validate the mechanic in the hypothesized learning model. In Table A5.1, we regress each stationary subject's supergame-21 cutoff choice on the observed experiences ($\hat{\nu}^G_i$ and $\hat{\nu}^H_i$) and elicited risk preference ($\hat{\rho}_i$). In the first regression (Column I), we present results for the 66 stationary-type subjects in our *Selection* treatments (the baseline and *S-Across*). In the second (Column II) we pool in the additional 25 stationary subjects from the *No Selection* treatment (including a treatment dummy). In the third regression, we remove the experienced rematching (both) and late-session experienced final outcomes as independent variables (which can be motivated by the adjusted *R*-squared measures provided in the last row).

Across specifications we find that variation in final *outcomes* in the early-session supergames, $\hat{\nu}^H_{1,10}$, has a strong effect in the predicted direction. However, subjects' learning seems to occur quite quickly, as we do not find a significant final cutoff response to final-outcome variation in the second block of ten supergames. While the signs on both rematching variables and the late-session final-outcome variable are positive, the size of the estimated effects are far smaller than for the early-session final outcomes. Separate from experience, subject-variation in elicited risk preferences is a significant predictor for

subjects' final supergame cutoffs in all of the regressions, reflecting the other requirement for the aggregate match made by the behavioral model.

Appendix B. Theoretical Model

We model a dynamic setting with adverse selection occurring over time. To do this we set up a finite population of objects $\mathcal{O} = \{o_1, \ldots, o_M\}$ (with the interpretation of long-side participants or durable goods, etc.). Each object has a common value, an iid draw over $V \subset \mathbb{R}$ according to a commonly known distribution F so that the average value is $\bar{v}$. These objects are initially matched to a group of individuals $\mathcal{I} = \{1, \ldots, N\}$ (with the interpretation of short-side participants, consumers, etc.). Each individual is randomly assigned to one of the objects at the beginning of the game through a one-to-one matching function, so that individual i has the initial object μ_0^i. In our setting there are more objects than individuals ($N < M$) and so some of the objects $\hat{\mathcal{O}}_0 \subset \mathcal{O}$ are initially unassigned. The set of unassigned objects will function here as a rematching population, and it is adverse selection over this population that is our main focus.

Choices take place over a time variable $t \in \{1, 2, \ldots, T \cdot N\}$, where individuals take turns receiving an opportunity to see their object's value. In particular each individual sees their object's value in period $t_i^\star = i + \tau_i N$, where τ_i is an iid random variable from 1 to T.[1] At the exogenously determined time τ_i the individual i faces a choice: keep the initially assigned object μ_0^i which has a known value v_0, or instead rematch to an object μ_t^i from the unmatched population $\hat{\mathcal{O}}_t$. Importantly, rather than the rematching population being some fixed outcome or a draw from a stationary distribution, the rematching population after agent i's choice is given by $\hat{\mathcal{O}}_{t+1} = \{\mu_0^i\} \cup \hat{\mathcal{O}}_t \setminus \{\mu_t^i\}$.

To see that there is adverse-selection in our environment it suffices to solve the first few periods of the model. Define the event that the participant who moves in period t observes their value that period as $\mathcal{I}_t$ and the event that they observe their value and switch as $\mathcal{S}_t$, with complementary event $\overline{\mathcal{S}}_t$.

- $t = 1$**:** Suppose individual 1 observes their object's value in period 1 (the event $\mathcal{I}_1 = \{t_1^\star = 1\}$). Because no-one else can have moved yet, each object in the rematching pool is an iid draw from the distribution $G_1(v \,|\mathcal{I}_1) = F(v)$. The optimal choice is therefore to rematch if $\mu_0^1 < \bar{v} =: v_1^\star$, which happens with probability $p_1^\star = \Pr\{t_1^\star = 1\} \cdot \Pr\{\mu_0^1 < v_1^\star\}$.
- $t = 2$**:** Suppose 2 observes their object's value. A draw from the rematching pool is therefore distributed as $G_2(v \,|\mathcal{I}_2) = G_2(v) = \lambda \Pr\{\mathcal{S}_1 \,|\mathcal{I}_2\} \cdot F(v \,|v < v_1^\star) + (1 - \lambda p_1^\star) \cdot G_1(v)$ where $\lambda = \frac{1}{M-N}$ is the probability of drawing any particular object from the rematching pool. The distribution $G_2(v)$ therefore has an expected value $v_2^\star < v_1^\star$, and the optimal choice by 2 is therefore to rematch if $\mu_0^2 < v_2^\star$, which happens with probability $p_2^\star = \Pr\{t_2^\star = 2\} \cdot \Pr\{\mu_0^2 < v_2^\star\}$

[1] The interpretation given is that there are T periods, but agents move in turns within the period, so 1 is the first-mover, 2 the second-mover, etc. An alternative interpretation is that draws where two agents choose at the same time are resolved in preference to the first-mover, then the second-mover, and so on.

$\vdots$

t: Were i to see their value at t, the distribution of the rematching population is $G_t(v\,|\mathcal{I}_t) = \lambda p^\star_{t-1} \cdot F(v\,\big|v < v^\star_{t-1}) + (1-\lambda p^\star_{t-1}) \cdot G_{t-1}(v\,\big|\overline{\mathcal{S}}_{t-1}, \mathcal{I}_t)$ which has expectation $v^\star_i$. Individual i therefore switches with probability $p^\star_t = \Pr\{\mathcal{I}_t\} \cdot \Pr\{\mu^i_0 < v^\star_t\}$.

The optimal solution proceeds inductively, with the additional complication that after period N agents must condition their choices on their own information, and that of other agents .[2]

Define the two sets of time periods

$$\mathcal{X}_t(s,s') = \{s, s+1, \ldots s'-1, s'\} \cap \{r\,|J(r) = J(t)\}\,,$$
$$\mathcal{Y}_t(s,s') = \{s, s+1, \ldots s'-1, s'\} \cap \{r\,|J(r) \neq J(t)\}\,,$$

the time periods between s and s' where the player who moves at t is or is not the relevant decision maker, respectively. The optimal decision rules:

Proposition 1. *The optimal decision rules can be calculated inductively according to*

$$v^\star_t := \sum_{s\in\mathcal{Y}_t(1,t-1)} \frac{q_s \cdot F(v^\star_s) \cdot \prod_{r\in\mathcal{Y}_t(s+1,t-1)} (1 - q_r \cdot F(v^\star_r))}{1 - \sum_{r\in\mathcal{X}_s(s+1,t-1)} q_r F(v^\star_r)} \mathbb{E}\left[v\,|v < v^\star_s\right] + \prod_{s\in\mathcal{Y}_t(1,t-1)} (1 - q_s \cdot F(v^\star_s))\,\mathbb{E}\left[v\right].$$

This forms a decreasing sequence $\{v^\star_t\}^{(j+1)N}_{t=jN+1}$ across each sequence of player turns $j \in \{1,\ldots,T\}$, while for any individual i the optimal decision rule $\left\{v^\star_{jN+i}\right\}^T_{j=1}$ is decreasing.

That the first sequence of turns has a decreasing optimal decision rule is illustrated above, as each participant faces a rematching pool that is a convex combination of the previous participant's distribution F_{t-1}, but with a positive probability of $F(v\,|v < \mathbb{E}\nu_{t-1})$ mixed in. For the first result we need to nest information. Define the event that a participant i observes the object at time $t = j \cdot N + i$ and switches as $\mathcal{S}_t$ and its complement of not switching as $\mathcal{N}_t$. Essentially this event encodes information that j did not switch in periods $(j-1)N+i$, $(j-2)N+i$, etc. The rematching distribution of a participant who is thinking about switching at time t is given by:

$$G_t(v) = \lambda \cdot \Pr\{\mathrm{S}_{t-1}\} \cdot F(v\,|v < v^\star_1) + (1 - \lambda \cdot \Pr\{\mathrm{S}_t\}) \cdot G_{t-1}(v\,|\mathcal{N}_{t-1}).$$

For the recursive calculation, the event $\mathcal{N}_{jN+i}$ only contains information that is relevant to the probability that person i saw their object in a previous period, and so for any fixed sequence of turns $\{v^\star_t\}^{(j+1)N}_{t=jN+1}$ the same reasoning as before holds, given any distribution at the start of the sequence $G_{jN}(v)$.

[2]For instance, agent i observing the value of μ^1_o in period $N+i$ knows that they did not see their value in period i. Similarly, the inductive step must incorporate the nested condition that player $i-1$ did not switch when working backwards.

APPENDIX C. INSTRUCTIONS

C.1. **Instructions to Part 1 [Supergames 1-5]**[3]**.**

C.1.1. *No Selection (Control) and S-Explicit*[4].

Introduction. Thank you for participating in our study. Please turn off mobile phones and other electronic devices. These must remain turned off for the duration of the session.

This is an experiment on decision making. The money you earn will depend on both your decisions and chance. The session will be conducted only through your computer terminal; please do not talk to or attempt to communicate with any other participants during the experiment. If you have a question during this instruction phase please raise your hand and one of the experimenters will come to where you are sitting to answer your question in private.

During the experiment, you will have the opportunity to earn a considerable amount of money depending on your decisions. At the end of the experiment, you will be paid in private and in cash. On top of what you earn through your decisions during the experiment, you will also receive a $6 participation fee.

Outline. Your interactions in this experiment will be divided into "Cycles".

- In each cycle you will be holding one of four balls, called Balls A to D.
- Each ball has a value between 1 and 100, and your payoff in each cycle will be determined by the value of the ball you are holding at the cycle's end.
- Initially you will not know any of the four ball's values, and will only know which of the four balls you are holding. Each cycle is divided into three rounds, and in one of these rounds you will see the value of your ball.
- At the point when you see your ball's value you will be asked to make your only choice for the cycle:
  - either keep the ball you are holding.
  - or instead let go of your current ball and take hold of one of the other three balls.

Main Task. In more detail, a cycle proceeds as follows:

- In each new cycle and for each participant, the computer randomly draws four balls. Each ball's value is chosen in an identical manner:
  - With 50% probability the computer rolls a fair hundred-sided die: so the ball has an equal probability of being any number between 1 and 100.
  - With 25% probability the ball has value 1.

[3]Instructions were distributed at the beginning of the experiment and read aloud.

[4]Some passages are different depending on treatment, and are indicated by highlighted text and the name of the treatment in brackets. Everything else is the same.

  - With 25% probability the ball has value 100.
- After drawing the values for the four balls, the computer randomly shuffles them into positions A to D. Once in place, the four balls' positions are fixed for the entire cycle. So whatever the value on Ball A, this is its value for the entire cycle. Only at the end of each cycle are four new balls drawn for your next cycle.
- Once the balls are in position, the computer randomly matches you to a ball, so you start out holding one of the balls A to D. There are therefore three leftover balls which are held by the Computer.
  - For example, one possible initial match might be that you hold Ball B. So because Ball B is held in this example, the Computer starts the cycle holding Balls A, C and D.
- Your outcome each cycle will depend only on the ball you are holding at the end of the cycle.
  - In each cycle you will know which of the four balls you start out holding.
  - You will not know any of the four balls' values to start with.
  - Every cycle you will make just one decision. At some random point in the cycle you will be told your ball's value. You will then be asked to make a choice after learning your ball's value: either keep holding your ball or give your ball to the computer, and instead take one of the three balls the computer is holding.
- The point in the cycle when you see your ball's value is random. Each cycle is divided into three rounds where you are given a chance to see your ball.
- The round in which you will see your held ball's value and make your choice for the cycle is random:
  - In round one, the computer flips a fair coin. If the coin lands Heads, you will see your ball's value. So you have a 50% chance of seeing your ball's value in the first round.
  - In round two, if you did not see you ball in round one you get another 50% chance of seeing its value: another coin flip.
  - Finally, in round three, if you did not see your ball's value in either round one or round two you will see its value for sure in round three and make your choice.
- Whenever you do see your held ball's value—either in round one, two or three—you will make your only decision for the cycle. The two options you have are:
  (1) Keep hold of your ball until the end of the cycle.
  (2) Switch balls: Give your ball to the computer to hold, and instead take one of the balls it is currently holding.

[S-Explicit]

- ***If you do choose to switch balls with the computer, the procedure the computer uses to select a ball to give you in exchange varies with the round:***
  - ***In round one, the computer will randomly select one of the three available balls, choosing between each of the three balls it is holding with equal probability.***
  - ***In round two, the computer will randomly select a ball from the two lowest value balls of the three it is holding, choosing each of the two lowest-value balls with equal probability. So, in round two the computer will never offer you the highest-value ball of the three.***
  - ***In round three, the computer will only offer you the lowest-value ball of the three it is holding.***
- Your cycle payoff is $0.10 multiplied by the number on the ball you are holding at the end of the cycle. So a ball with value 1 at the end of a cycle has a payoff of $0.10, a ball with value 50 has a payoff of $5.00, while a ball with value 100 has a payoff of $10.00.

Cycle Summary.

(1) Each participant is given four balls A to D, where each ball has a random value between 1 and 100.
(2) Each participant is then assigned one of the four balls to hold, with the leftover balls held by the computer.
(3) Across three rounds the participants are given the chance to see the value of the balls they are holding.
   - Whenever you see the value of the ball you are holding you must decide whether to keep holding it, or trade it with the computer.
   - In rounds one and two you have a 50% probability of seeing the held ball's values. Any participant that reaches round three without seeing their ball's value will always see its value in round three, and are then given the option to trade it for one of the computer balls.

   [S-Explicit]
   - ***The procedure the computer uses to choose the ball it is willing to exchange with you changes across the cycle. In round one it will randomize across all three balls. In round two, it randomizes over the two lowest-value balls. In round three, it will offer the lowest-value ball with certainty.***

Experiment Organization. There will be three parts to this experiment. The first part will last for 5 cycles. After this you will get instructions for the second part which will last for another 15 cycles, where the task is very similar. Part 3 will last for a single cycle.

Following part 3, we will conclude the experiment with a number of survey questions for which there is the chance for further payment.

Payment.

- Monetary payment for Parts 1 and 2 will be made on two randomly chosen cycles, where each of the 20 cycles in the first two parts are equally likely to be selected for payment.
- You will be given the opportunity for further earnings in Part 3 and the survey at the end of the experiment (which we will explain once the preceding parts end).
- All participants will receive a $6 participation fee added to total earnings from the other parts of the experiment.

C.1.2. *Selection, S-Across, S-Within, and S-Peer*[5].

Introduction. Thank you for participating in our study. Please turn off mobile phones and other electronic devices. These must remain turned off for the duration of the session.

This is an experiment on decision making. The money you earn will depend on both your decisions and chance. The session will be conducted only through your computer terminal; please do not talk to or attempt to communicate with any other participants during the experiment. If you have a question during this instruction phase please raise your hand and one of the experimenters will come to where you are sitting to answer your question in private.

During the experiment, you will have the opportunity to earn a considerable amount of money depending on your decisions. At the end of the experiment, you will be paid in private and in cash. On top of what you earn through your decisions during the experiment, you will also receive a $6 participation fee.

Outline. Your interactions in this experiment will be divided into "Cycles".

- In each cycle you will be in a group of three, with each participant holding one of four balls, called Balls A to D.
- Each ball has a value between 1 and 100, and your payoff in each cycle will be determined by the value of the ball you are holding at the cycle's end.
- At the start of each cycle you will see which ball each of the three participants are holding. However, you will NOT know any of the four ball's values. Each cycle is divided into three rounds, and in one of these rounds you will see the value of your ball.
- At the point when you see your ball's value you will be asked to make your only choice for the cycle:
  - either keep the ball you are holding.

[5]Some passages are different depending on treatment, and are indicated by highlighted text and the name of the treatment in brackets. Everything else is the same.

  - or instead let go of your current ball and take hold of whichever ball is not being held by another group member.

Main Task. In more detail, a cycle proceeds as follows:

- At the start of each cycle the computer randomly divides all of the participants in the room into groups of three. Each player will randomly be given one of three roles: either First Mover, Second Mover or Third Mover.
  - The groups of three and specific roles assigned are fixed for each cycle.
  - In each new cycle you will be randomly matched into a new group of three.
  - In each new cycle you will be randomly assigned to either be the First, Second or Third Mover.
- In each new cycle and for each separate group of three, the computer randomly draws four balls. Each ball's value is chosen in an identical manner:
  - With 50% probability the computer rolls a fair hundred-sided die: so the ball has an equal probability of being any number between 1 and 100.
  - With 25% probability the ball has value 1.
  - With 25% probability the ball has value 100.
- After drawing the values for the four balls, the computer randomly shuffles them into positions A to D. Once in place, the four balls' positions are fixed for the entire cycle. So whatever the value on Ball A, this is its value for the entire cycle. Only at the end of each cycle are four new balls drawn for your next cycle and next group of three.
- Once the balls are in position, the computer randomly gives a different ball to each of the three group members. Each group member therefore starts out holding one of the balls A to D. But because the three group members are each holding one of the four balls there is one leftover ball. This leftover ball is held by the Computer.
  - For example, one possible initial match might be that Ball A is held by the Third Mover; Ball B by the First Mover; and Ball D by the Second Mover. So because Balls A, B and D are all held in this example, the Computer starts the cycle holding the leftover Ball C.

[Selection, S-Across, and S-Peer]

- ***Your outcome each cycle will depend only on the ball you are holding at the end of the cycle.***
  - ***In each cycle you will know which of the four balls you start out holding***
  - ***You will not know any of the four balls' values to start with, nor which balls the other two group members are holding.***

[S-Within]

- ***Your outcome each cycle will depend only on the ball you are holding at the end of the cycle.***

- ***You will not know any of the four ball's values to start with.***
- ***You will know which ball is being held by each participant, and will also know if a ball was previously held by another participant.***
- Every cycle you will make just one decision. At some random point in the cycle you will be told your ball's value. You will then be asked to make a choice after learning your ball's value: either keep holding your ball or give your ball to the computer, and instead take whichever ball the computer is holding.

- The point in the cycle when you see your ball's value is random. Each cycle is divided into three rounds where each group member is given a chance to see their ball. Each round is further divided into a sequence of turns, dictated by your role:
  (1) The first mover gets the first opportunity to see their ball's value. If they see it, they make their one choice for the cycle, if not they must wait until the next round for another opportunity to see their ball's value.
  (2) After the first mover, the second mover gets an opportunity to see their ball. Again, if they see it, they make their one choice for the cycle, otherwise they must wait until the next round.
  (3) Finally, after both the first and second mover, the third mover gets an opportunity to see their ball. As before, if they see their ball they make their one choice for the cycle, otherwise they must wait until the next round.
- The round in which you will see your held ball's value and make your choice for the cycle is random:
  - In round one, the computer flips a fair coin once for each group member. If the coin lands Heads, the group member sees their ball's value. So each group member has a 50% chance of seeing their ball's value in the first round.
  - In round two, any group members who did not see their ball in round one get another 50% chance of seeing its value: another coin flip.
  - Finally, in round three, any group members who did not see their ball in either round one or round two see their ball's value for sure in round three and make their choice.
- Whenever you do see your held ball's value—either in round one, two or three—you will make your only decision for the cycle. The two options you have are:
  (1) Keep hold of your ball until the end of the cycle.
  (2) Switch balls: Give your ball to the computer to hold, and instead take the ball it is currently holding.
- The cycle ends after every participant within a group sees the ball's value and makes a decision.

[S-Across]

- ***At the end of the cycle you will get feedback on what happened. You will be told:***
  - ***The balls each group member and the computer started with.***
  - ***Choice 1/2/3: The identity of the group member who was 1st/2nd/3rd to see their ball's value; the round they saw their ball's value; their choice (keep or switch); and which ball the computer was holding after their choice.***
- Your cycle payoff is $0.10 multiplied by the number on the ball you are holding at the end of the cycle. So a ball with value 1 at the end of a cycle has a payoff of $0.10, a ball with value 50 has a payoff of $5.00, while a ball with value 100 has a payoff of $10.00.

Cycle Summary.

(1) The computer randomly forms the participants in the room into groups of three.
(2) Each group is given four balls A to D, where each ball has a random value between 1 and 100.
(3) Each of the three participants are given one of the four balls to hold, with the leftover ball held by the computer.
(4) Across three rounds the group members move in sequence according to their roles, and each are given the chance to see the value of the ball they are holding.
   - Whenever you see the value of the ball you are holding you must decide whether to keep holding it, or trade it with the computer.
   - In rounds one and two each group member has a 50% probability of seeing their held ball's value. Any group members that reach round three without seeing their ball's value will always see it in round three, and are then given the option to trade it for the current computer ball.

Experiment Organization. There will be three parts to this experiment. The first part will last for 5 cycles. After this you will get instructions for the second part which will last for another 15 cycles, where the task is very similar. Part 3 will last for a single cycle. Following part 3, we will conclude the experiment with a number of survey questions for which there is the chance for further payment.

Payment.

- Monetary payment for Parts 1 and 2 will be made on two randomly chosen cycles, where each of the 20 cycles in the first two parts are equally likely to be selected for payment.
- You will be given the opportunity for further earnings in Part 3 and the survey at the end of the experiment (which we will explain once the preceding parts end).
- All participants will receive a $6 participation fee added to total earnings from the other parts of the experiment.

C.2. **Instructions to Part 2 [Supergames 6-20][6].**

We will now pause briefly before continuing on to the second part of the experiment. The task for the next 15 cycles of the experiment is very similar to the last 5. In fact, there is only one difference from part one. So far, if you flipped a head you have been told the value of the ball you are holding prior to deciding whether or not to trade it for the computer's ball. For the remaining cycles you instead will be asked to provide a cutoff rule in case you see your ball.

This cutoff is the minimum value you would need to keep the ball you are holding. In every round of a cycle, you will be asked to provide a cutoff for trading your ball should you see its value that round.

You will be asked to choose your cutoff value by clicking on the horizontal bar at the bottom of your screens per the projected slide. You can click anywhere on the bar to change your cutoff, and you can always adjust your minimum cutoff by plus or minus one by clicking on the two buttons below the bar.

In the projected example I selected a minimum cutoff of 80.

After you submit your cutoff the computer will then flip the coin if you are in rounds one or two to determine if you see your ball's value, similar to part one.

If the coin flip is tails, nothing happens, and you will have to wait to decide until at least the next round, where you will repeat this procedure and provide another minimum cutoff.

If instead the coin flip is Heads, or you are making your decision in round three where you are guaranteed to see your ball, the computer will show you the value of your ball. The computer will automatically keep it or trade your ball according to the minimum cutoff you selected.

If your ball's value is LOWER than your selected minimum, you will automatically trade your ball for the computer's ball, which you will keep until the end of the cycle. In the projected example I had selected 80 as my minimum cutoff. In the above example, it shows what would happen if I saw my held ball, and its value was 75. Because this is lower than my selected minimum value of 80, the computer uses my selected cutoff to automatically trade my ball for the computer's ball, rather than keeping it.

The next example shows what happens if the coin flip is heads, and your held ball is equal to or greater than your selected minimum cutoff. In this case, because the ball's value is greater than my selected minimum value of 80, the computer uses my selected cutoff to automatically keep my ball until the end of the cycle, rather than trading it. The projected example illustrates what would happen if my held ball had a value of 85. Because 85 is above my selected cutoff of 80, I would keep my ball until the end of the cycle.

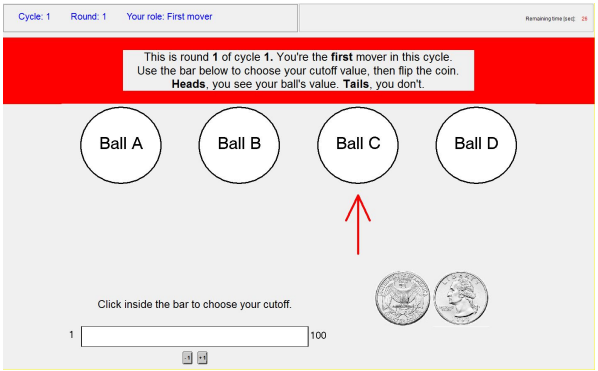
[6]The experimenter read the instructions aloud after Part 1 had ended. Slides were used to show screenshots and emphasize important points (see section C.3). The text was identical for all treatments, and the accompanying slides differ only for treatment S-Within.

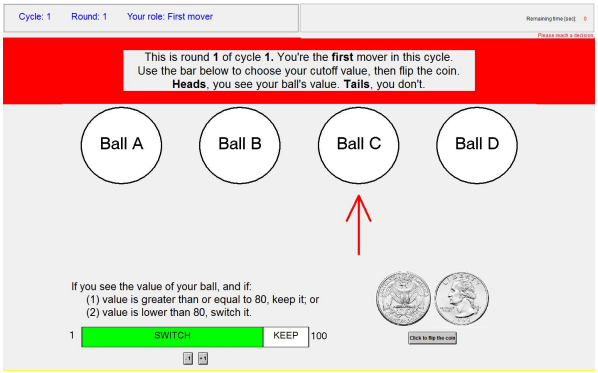
Because of this procedure, you will maximize your potential earnings by selecting the chosen cutoff value to answer the following question: What is the smallest value X for which I would keep my ball right now, where for any balls lower than X, I would rather trade them for the computer's ball?

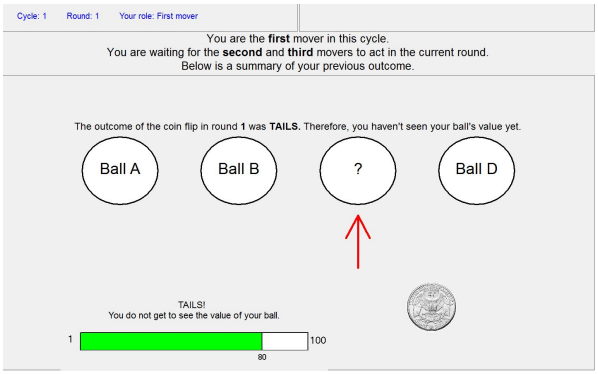
The computer will now ask you three questions to make sure you understand this cutoff. At the top of your screens the computer will indicate a ball you are holding. Just for these question we will also tell you the ball the computer is holding. For each question we will give you a selected cutoff, and the value of the ball you are holding. Given this information, we would like you to select what happens.

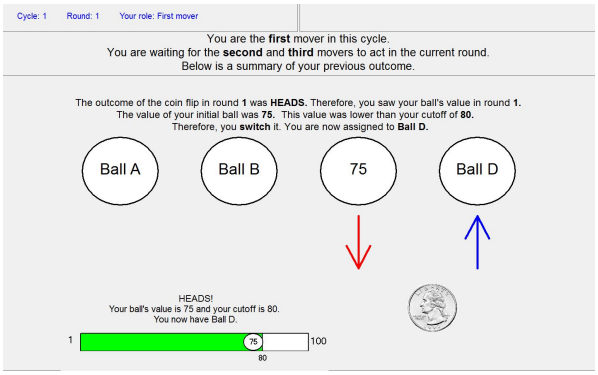
You must answer all three questions correctly for the experiment to proceed.

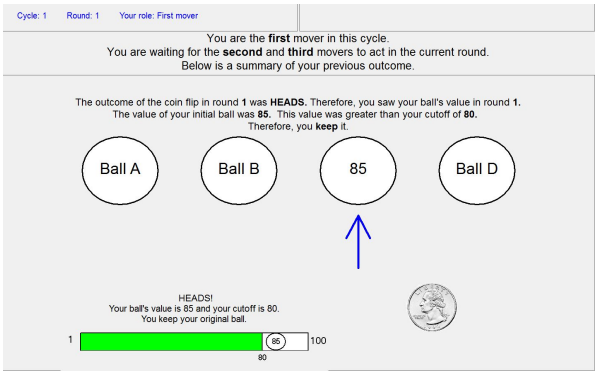
C.3. **Slides for Instructions to Part 2.**








Cycle: 1
Round: 1
Your role: First mover
You are the **first** mover in this cycle.
You are waiting for the **second** and **third** movers to act in the current round.
Below is a summary of your previous outcome.
The outcome of the coin flip in round **1** was **HEADS.** Therefore, you saw your ball's value in round **1.**
The value of your initial ball was **75.** This value was lower than your cutoff of **80.**
Therefore, you **switch** it. You are now assigned to **Ball D.**
Ball A
Ball B
75
Ball D
HEADS!
Your ball's value is 75 and your cutoff is 80.
You now have Ball D.
1
75
100
80


Cycle: 1
Round: 1
Your role: First mover
You are the **first** mover in this cycle.
You are waiting for the **second** and **third** movers to act in the current round.
Below is a summary of your previous outcome.
The outcome of the coin flip in round **1** was **HEADS.** Therefore, you saw your ball's value in round **1.**
The value of your initial ball was **85.** This value was greater than your cutoff of **80.**
Therefore, you **keep** it.
Ball A
Ball B
85
Ball D
HEADS!
Your ball's value is 85 and your cutoff is 80.
You keep your original ball.
1
85
100
80

C.4. **Handouts for Part 2 [Supergames 6-20]**[7]**.**

C.4.1. *No Selection (Control) and S-Explicit*[8].

Part Two.

- Everything in part two cycles will be the same as part one, with one exception.
- In every round, you will be asked to provide a *cutoff*.
- The *cutoff* you provide is the *minimum* value required for you to keep your ball.
- After you have confirmed your cutoff X between 1 and 100 the computer will determine if you see your ball's value this round:
  - If you see your ball's value this round a choice will be made according to your minimum-value cutoff.
  - If you do not see your ball's value this round, you will provide another minimum-value cutoff in the next round.
- In the round where you see your ball, the computer will use your minimum cutoff X as follows:
  - *IF* your ball's value is equal to or greater than the minimum cutoff X, then you will choose to keep your ball.

  [No Selection (Control)]
  - ***OTHERWISE if your ball's value is less than the minimum cutoff X, the computer will choose to trade your ball for one of the computer's balls.***

  [S-Explicit]
  - ***OTHERWISE if your ball's value is less than the minimum cutoff X, the computer will choose to trade your ball for the one chosen by the computer that round.***

  [Selection, S-Across, S-Within, and S-Peer]
  - **OTHERWISE if your ball's value is less than the minimum cutoff X, the computer will choose to trade your ball for the one held by the computer that round.**
- Because of this procedure, you should choose your cutoff value to answer the following question:

[No Selection (Control)]

What is the smallest value X from 1 to 100 for which I would like to keep my ball right now, rather than give it to the computer in exchange for one of the balls the computer is holding?

[S-Explicit]

[7]The experimenter distributed the handouts before showing the slides and reading the script. They served as a consultation material for subjects.

[8]Some passages are different depending on treatment, and are indicated by highlighted text and the name of the treatment on brackets. Everything else is the same.

What is the smallest value X from 1 to 100 for which I would like to keep my ball right now, rather than give it to the computer in exchange for its selected ball for this round?

[Selection, S-Across, S-Within, and S-Peer]

What is the smallest value X from 1 to 100 for which I would like to keep my ball right now, rather than give it to the computer in exchange for the ball the computer is holding?

C.5. **Instructions to Part Three[9].**

C.5.1. *No Selection, Selection, S-Across, S-Explicit, and S-Within.* We will now pause briefly before continuing on to the third part of the experiment. The task for the final cycle of the experiment is very similar to the last 20. However, where we paid two random cycles from the last 20, we will pay you whatever you earn in this last cycle for sure. So for this one cycle you will earn between $0.10 and $10.00 depending on your final ball.

In this cycle we will randomly assign you to be either a first, second or third mover, and will tell you your role. Like the preceding rounds, we will ask you for a minimum cutoff value to keep your ball, and the computer will automatically keep or switch your ball depending on your selected cutoff if you see your balls value that round.

[No Selection, Selection, S-Explicit, and S-Across]

The only difference in part 3 is that we will only tell you which round you saw your ball's value in at the end of the cycle.

[S-Within]

There are two differences in Part 3. First, we have removed the information on which balls the other participants are holding. All you will know is which ball you are currently holding. Second, we will now only tell you which round you saw your ball's value and how you decided at the very end of this cycle.

You will submit cutoffs in rounds 1 to 3, as before. In the round where you see your ball's value, you will use your selected cutoff for that round to make a decision.

[No Selection, Selection, S-Across, and S-Within]

If your balls' value is lower than your minimal cutoff you will exchange your ball with the one the computer is holding at that point.

[S-Explicit]

If your ball's value is lower than your minimal cutoff you will exchange your ball with the one the computer has selected to exchange for that round.

If your balls' value is equal to or greater than your minimum cutoff you will keep your ball for the cycle. Because of this procedure, nothing in the structure of the task has changed from Part 2. So you should make your decisions exactly as before. The new

[9]The experimenter read the instructions aloud after Part 2 had ended. Slides were used to show screenshots and emphasize important points (see section C.6).

procedure allows us to collect information on the cutoffs you would select in all three rounds of the cycle.

[No Selection, Selection, S-Across, and S-Explicit]

Effectively, the only thing that has changed from part two is the point at which we tell you you have made your choice, and that your payoff from this cycle will always be added to your final cash payoff for the experiment.

[S-Within]

Recall that, in contrast to the previous cycles, (i) you will now not receive any information about which balls the other two participants and the computer are currently holding in any period, and (ii) you will choose a cutoff in all three rounds.

In terms of payment, remember that the outcome from this cycle will always be added to your final cash payoff for the experiment, so that the ball you are holding at the end of this cycle will add between $0.10 and $10.00 to your final payoff, depending on the ball you are holding at the end.

Please now make your choices for the final cycle.

C.5.2. *S-Peer.*

We will now pause briefly before continuing to Part 3 of the experiment. Part 3 will last for just one cycle, and this cycle will be paid with certainty. So you will earn between $0.10 and $10.00 for Part 3.

The task for the final cycle of the experiment is very similar to the last 20. Like the preceding rounds, we will randomly assign you to be either the first, second, or third mover, and we will ask you for a minimum cutoff to keep your ball. The computer will then automatically keep or switch your ball depending on your selected cutoff and the value of your ball. The first difference in Part 3 is that we will only tell you which round you saw your ball's value at the very end of the cycle.

That is, you will submit cutoffs for rounds 1 to 3, as before. In the round where you see your ball's value, we will use your selected cutoff for that round to make a decision.

(1) If your ball's value is lower than your minimum cutoff, you will exchange your ball with the one the computer is holding at that time.
(2) If your ball's value is equal to or greater than your minimal cutoff, you will keep your ball for the cycle.

Because of this procedure, nothing in the structure of the task has changed from Part 2. The new procedure is chosen to allow us to collect information on the cutoffs you would select in all three rounds of the cycle.

The second difference from the first 20 cycles is the determination of payment for Part 3. Before you go on to Part 3, you will be matched into a team of three participants. This team will be given the chance to communicate with each other, prior to making their choices in Part 3. After the chat is completed, each team member will be assigned to a different role (first, second, or third mover), and each of the three team members will be

assigned to different groups with participants from other teams. Each team-member will then make their choices in the final cycle.

Payment for Part 3 for your entire team (the participants you will chat with) will be determined by the actions of one randomly selected team member. The chat window allows you to discuss your possible cutoff choices with your other team members before the cycle begins.

This is what the chat screen looks like. You will have 5 minutes to discuss with your team members what to do in cycle 21.

You may not use the chat to discuss details about your previous earnings, nor are you to provide any details that may help other participants in this room identify you. This is important to the validity of the study and will not be tolerated. However, you are encouraged to use the chat window to discuss the choices in the upcoming cycle. In particular, because of our modification to the cutoff procedure, all three team members will make three cutoff choices: the cutoff decision for each round one, two and three.

Whatever advice you can provide your matched team-members that leads them to a better outcome in Part 3 will also benefit you, as there is a two-in-three chance that one of the other team member's choices will define your earnings for this part. Similarly, the advice of others can also help you, as there is a one-in-three probability that your choices will define both your earnings for Part 3 as well as the earnings of the other two team-members.

After the Part 3 cycle is completed, one of the three team members will be randomly selected and that participant's final held ball will determine the payment for all three members of the team. We will then show you the outcome of the chosen cycle, as in the projected slide. We will pay you for whatever you earn in this last cycle for sure. So for Part 3 you will earn $0.10 times the value of the ball the selected team member is holding at the end of the cycle.

C.6. **Slides for Instructions to Part 3.**

C.6.1. *No Selection, Selection, S-Across, S-Explicit, and S-Within.*

- Part Three will consist of a single cycle
- Whatever you earn in this cycle will be added to the two random cycles selected from Parts 1 and 2
  - So you have the chance to earn between $0.10 and $10.00 for this cycle depending on your final ball

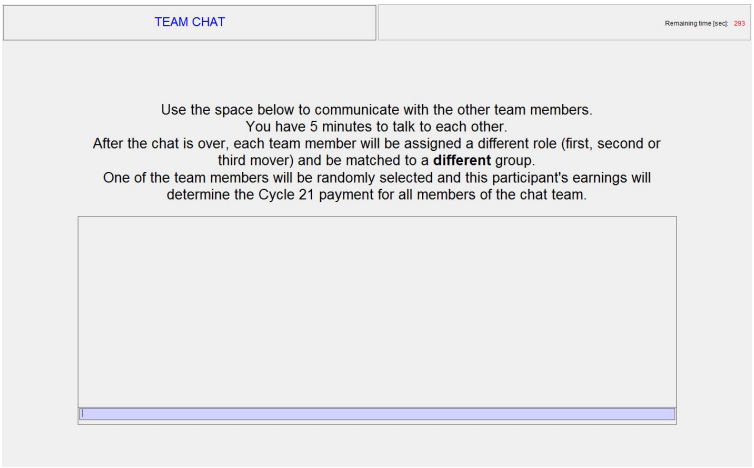
- You will be told whether you are the First, Second or Third mover
- We will ask you for your minimal cutoff in each new round as before
- If your coin flip is heads, you will choose an action according to your cutoff as before
- The only difference is that we will not tell you when and if you have made a choice until the end of the cycle

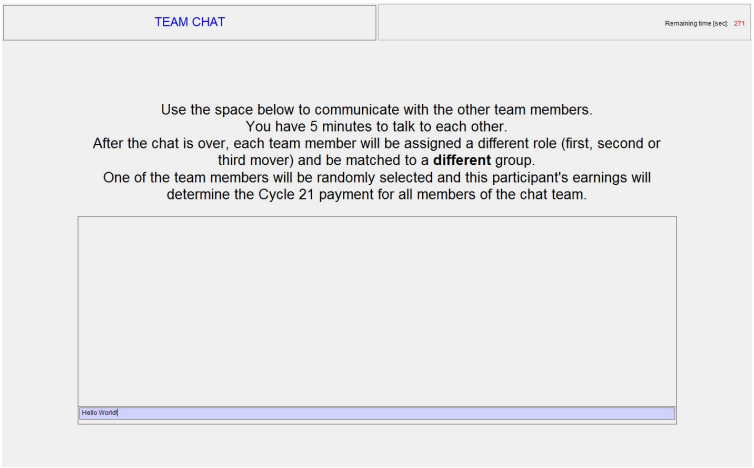
- You will submit cutoffs in rounds 1 to 3, as before
- In the round where you see your ball's value, you will use your selected cutoff to make a decision
  - If your balls' value is lower than your minimal cutoff you will exchange your ball with the one the computer is holding
  - If your balls' value is equal to or greater than your minimal cutoff you will keep your ball
- Because of this procedure, nothing in the structure of the task has changed
  - The new procedure allows us to collect information on the cutoff you would select in all three rounds
  - All that has changed from part two is the time at which we inform you on your choice for the cycle

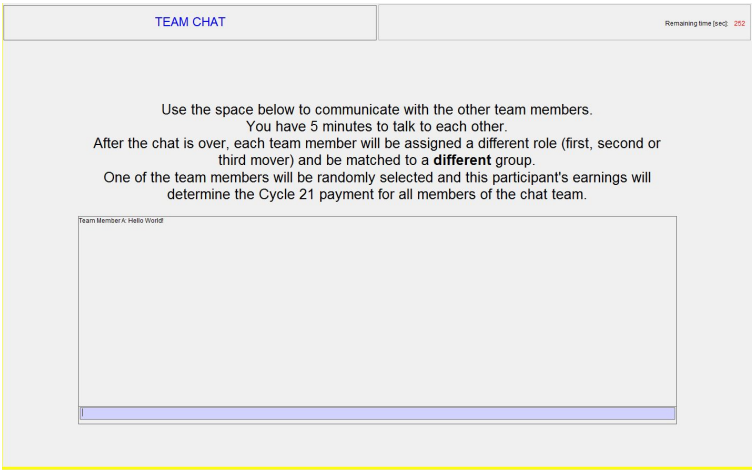
C.6.2. S-Peer.

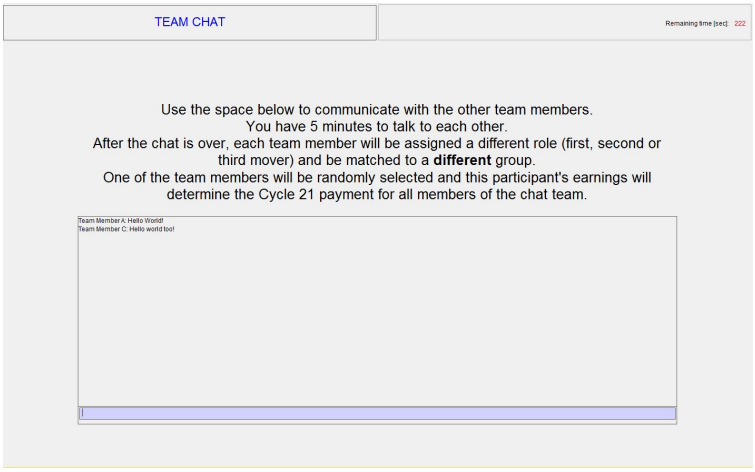
- Part Three will consist of a single cycle
- Whatever you earn in this cycle will be added to the two random cycles selected from Parts 1 and 2
  - So you will earn between $0.10 and $10.00 for this cycle
- We will ask you for your minimal cutoff in each new round as before
- If your coin flip is heads, you will choose an action according to your cutoff as before
- The only difference is that we will not tell you when and if you have made a choice until the end of the cycle

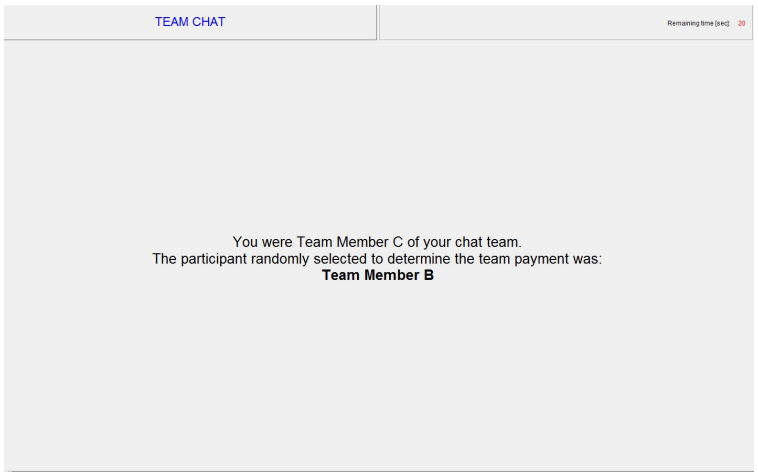
- You will submit cutoffs in rounds 1 to 3, as before
- In the round where you see your ball's value, you will use your selected cutoff to make a decision
  - If your balls' value is lower than your minimal cutoff you will exchange your ball with the one the computer is holding
  - If your balls' value is equal to or greater than your minimal cutoff you will keep your ball
- Because of this procedure, nothing in the structure of the task has changed.
  - The new procedure allows us to collect information on the cutoff you would select in all three rounds
  - All that has changed from part two is the time at which we inform you on your choice for the cycle

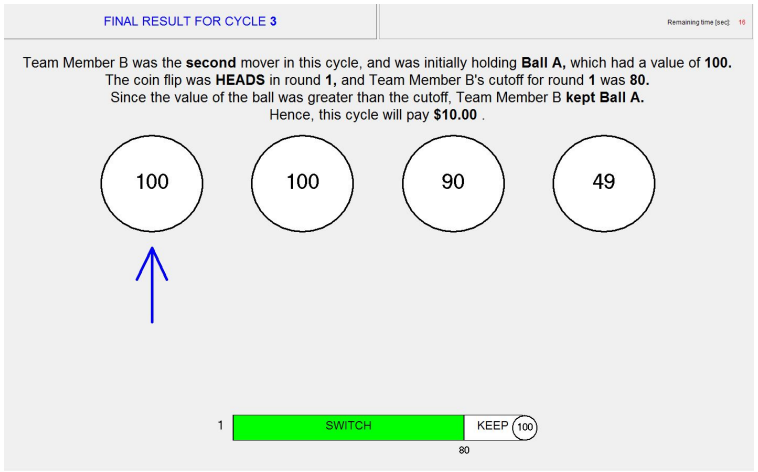

TEAM CHAT
Remaining time [sec]: 293
Use the space below to communicate with the other team members.
You have 5 minutes to talk to each other.
After the chat is over, each team member will be assigned a different role (first, second or third mover) and be matched to a **different** group.
One of the team members will be randomly selected and this participant's earnings will determine the Cycle 21 payment for all members of the chat team.


TEAM CHAT
Remaining time [sec]: 271
Use the space below to communicate with the other team members.
You have 5 minutes to talk to each other.
After the chat is over, each team member will be assigned a different role (first, second or third mover) and be matched to a **different** group.
One of the team members will be randomly selected and this participant's earnings will determine the Cycle 21 payment for all members of the chat team.
Hello World


TEAM CHAT
Remaining time [sec]: 252
Use the space below to communicate with the other team members.
You have 5 minutes to talk to each other.
After the chat is over, each team member will be assigned a different role (first, second or third mover) and be matched to a **different** group.
One of the team members will be randomly selected and this participant's earnings will determine the Cycle 21 payment for all members of the chat team.
Team Member A: Hello World!


TEAM CHAT
Remaining time [sec]: 222
Use the space below to communicate with the other team members.
You have 5 minutes to talk to each other.
After the chat is over, each team member will be assigned a different role (first, second or third mover) and be matched to a **different** group.
One of the team members will be randomly selected and this participant's earnings will determine the Cycle 21 payment for all members of the chat team.
Team Member A: Hello World!
Team Member C: Hello world too!


TEAM CHAT
Remaining time [sec]: 20
You were Team Member C of your chat team.
The participant randomly selected to determine the team payment was:
Team Member B


FINAL RESULT FOR CYCLE 3
Remaining time [sec]: 16
Team Member B was the second mover in this cycle, and was initially holding Ball A, which had a value of 100.
The coin flip was HEADS in round 1, and Team Member B's cutoff for round 1 was 80.
Since the value of the ball was greater than the cutoff, Team Member B kept Ball A.
Hence, this cycle will pay $10.00 .
100
100
90
49
1
SWITCH
KEEP
100
80

C.7. **Instructions for Part 4.** Finally we will conduct a number of survey questions for which there will be the chance of an additional payment.

Part four consists of three sets of questions, which will have a series of possible prizes. One participant in the room will be randomly selected for payment on these additional questions.

The first question is a decision making task. You will be presented with three balls. One of these balls is worth $10, while the other two are worth $0. The computer has shuffled the three balls, and fixed their locations.

(1) We will ask you to choose one of the the three balls.
(2) After you have chosen a ball, we will reveal one zero dollar ball from the two balls that you did not choose.
(3) We will then make you an offer:
    - Would you like the ball you initially chose plus $5?
    - Or would you instead like to switch to the remaining ball plus X times $0.10?

- X will vary between 1 and 100.
- We would like you to tell us the minimum value of X for which you would like to swap.
  - If you swap you get the value of the remaining unchosen ball (either 0$ or $10) plus $0.10 times X (so between $0.10 and $10)
  - If you keep your ball, you get its value (either 0$ or $10) plus $5.

Please make your choices for this task now.

[Wait while subjects complete task]

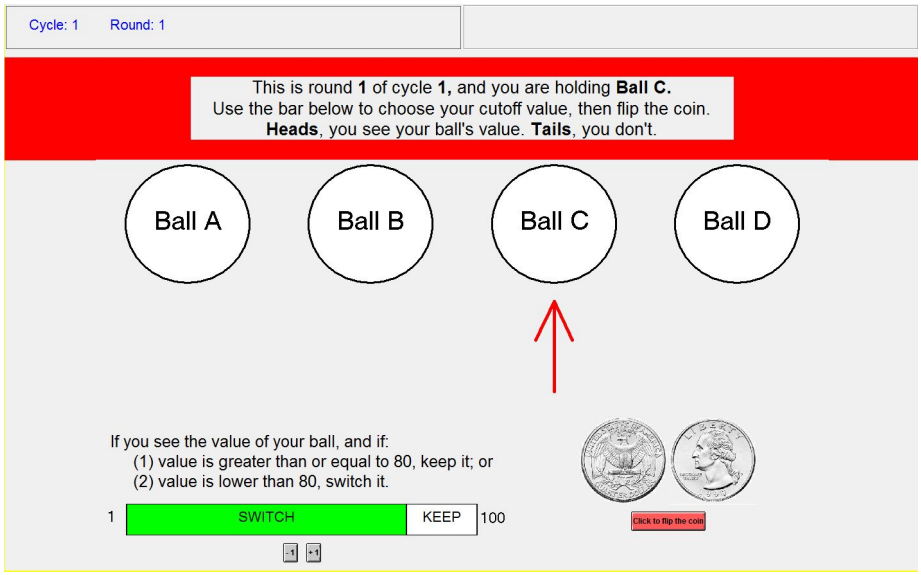
The next task will ask you to answer three numerical questions within a 15 second time-limit. Whoever is selected for payment in part 4 will receive $1 per correct answer.

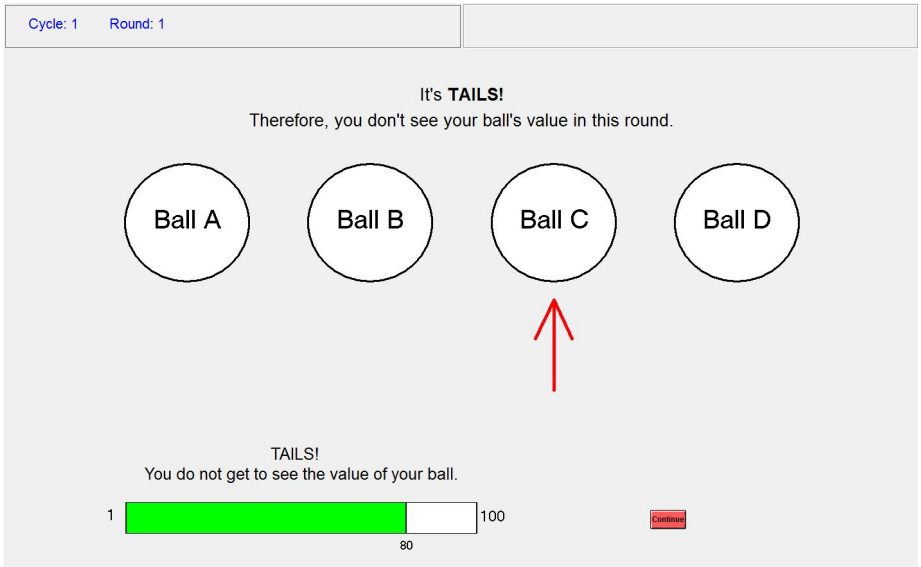
[Wait while subjects complete task]

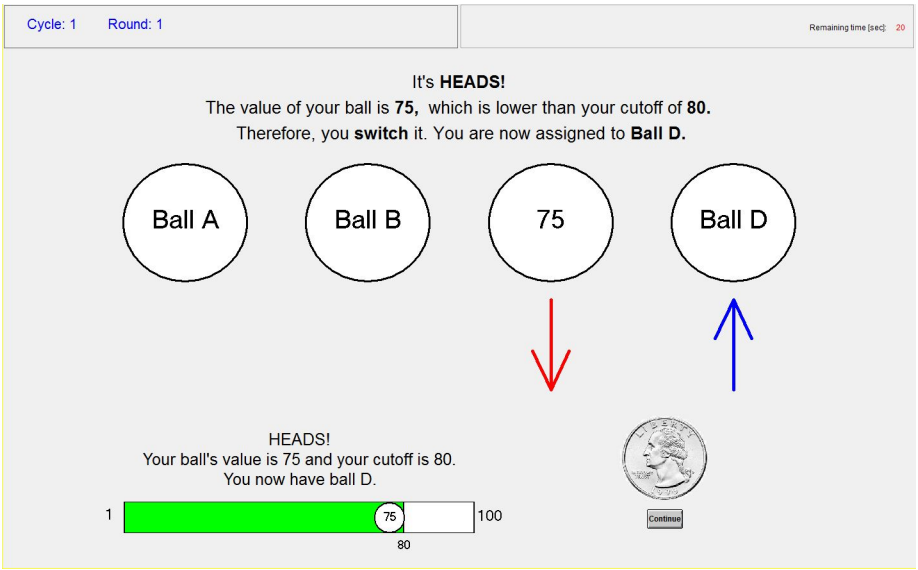
Finally, we would like you to make a series of choices between lotteries. In each choice you will be asked to pick either Lottery A or Lottery B, where each offers a probability over two monetary prizes.

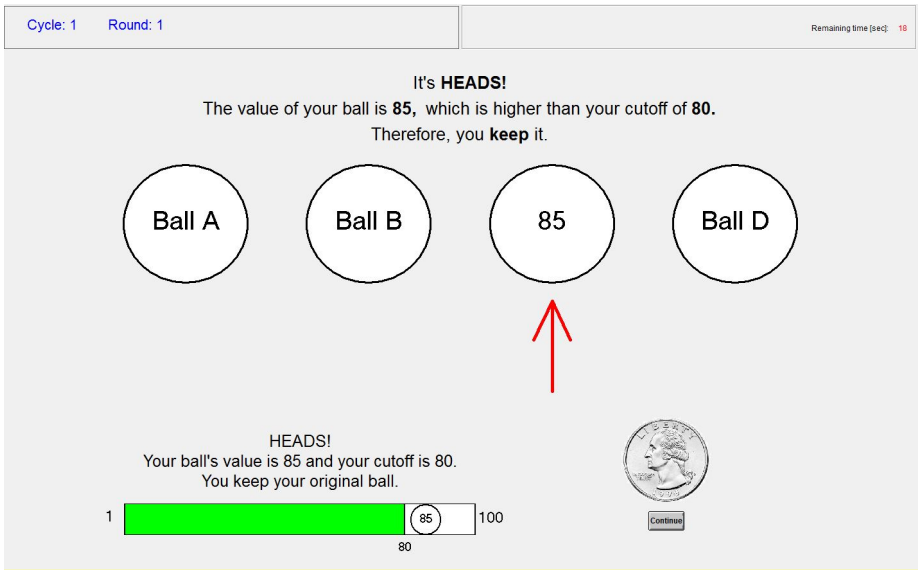
One of your four choices from these lotteries will be selected for payment, and the outcome added to your total earnings if you are selected for payment in part four.

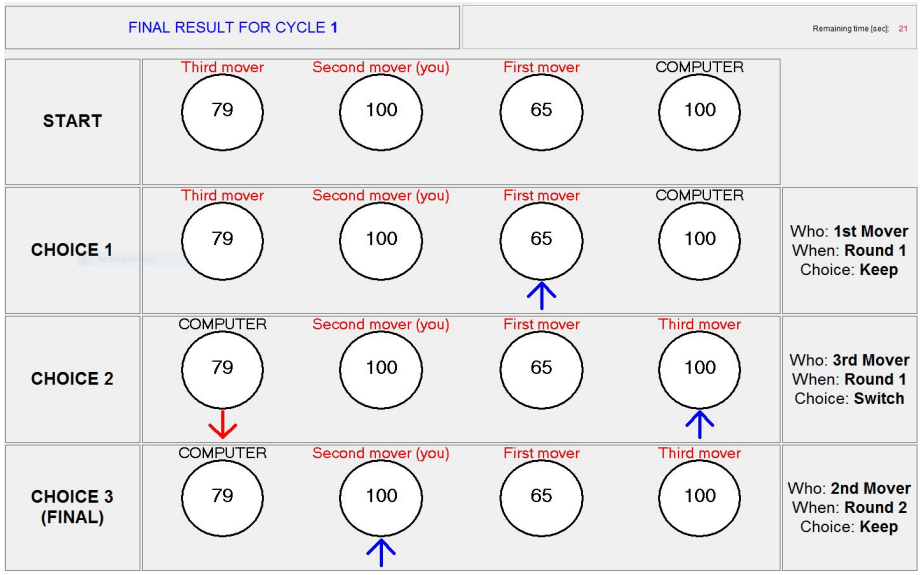
APPENDIX D. SCREENSHOTS






Cycle: 1
Round: 1
Remaining time [sec]: 20
It's **HEADS!**
The value of your ball is **75,** which is lower than your cutoff of **80.**
Therefore, you **switch** it. You are now assigned to **Ball D.**
Ball A
Ball B
75
Ball D
HEADS!
Your ball's value is 75 and your cutoff is 80.
You now have ball D.
1
75
100
80
Continue


Cycle: 1
Round: 1
Remaining time [sec]: 18
It's **HEADS!**
The value of your ball is **85,** which is higher than your cutoff of **80.**
Therefore, you **keep** it.
Ball A
Ball B
85
Ball D
HEADS!
Your ball's value is 85 and your cutoff is 80.
You keep your original ball.
1
85
100
80
Continue


FINAL RESULT FOR CYCLE 1
Remaining time [sec]: 21
START
Third mover
79
Second mover (you)
100
First mover
65
COMPUTER
100
CHOICE 1
Third mover
79
Second mover (you)
100
First mover
65
COMPUTER
100
Who: 1st Mover
When: Round 1
Choice: Keep
CHOICE 2
COMPUTER
79
Second mover (you)
100
First mover
65
Third mover
100
Who: 3rd Mover
When: Round 1
Choice: Switch
CHOICE 3 (FINAL)
COMPUTER
79
Second mover (you)
100
First mover
65
Third mover
100
Who: 2nd Mover
When: Round 2
Choice: Keep

Appendix E. Chat Transcripts

Session-17, Group-1

A: Hey guys (*t=6*)

C: hello (*t=14*)

B: Hi, ideally we want the bot to have the lowest value (*t=20*)

A: true (*t=36*)

C: i think a decent cutoff is somewhere between 20-50 (*t=51*)

B: this way when one of us 3 get selected at random we will always not have the lowest value chosen (*t=56*)

B: I think a cut off between those values is ideal as well (*t=69*)

A: i usually put my cut-offs lower if i'm third mover, around 5-20 (*t=91*)

A: because the people before me are likely switching out a 1 value (*t=107*)

C: very true (*t=116*)

B: (*t=127*)

A: but i agree with 20-50 for first or second mover (*t=128*)

C: so if we are a first mover go between 20-50 and lover it if we are the later mover (*t=141*)

A: progressively getting lower with each round (*t=141*)

B: I think that is a good plan (*t=144*)

B: Also don't forget the coin flip (*t=150*)

A: but we won't know the outcome of it :((*t=158*)

B: we can communicate if we get heads or tails (*t=167*)

B: for example (*t=171*)

B: if you are first mover (*t=181*)

B: quickly select your cutoff value at 40 or something around there (*t=190*)

B: oh shit nevermind (*t=204*)

A: my understanding is that this round, we won't be told which round we're making the decision, therefore we won't know where we're making our decision (*t=216*)

C: yeah, i think we just have to go in with the cutoffs we want (*t=236*)

B: Yea I made a mistake, I guess we will just have to follow the formula of putting in low cutoffs later on (*t=243*)

C: sounds good (*t=251*)

A: sounds good (*t=253*)

B: sounds good (*t=262*)

B: (___/) (*t=281*)

B: (= ' . ' =) (*t=286*)

B: ()__() (*t=289*)

A: wow you're good at that (*t=297*)

Session-17, Group-2

A: hey (*t=9*)

C: hello there (*t=18*)

B: hello (*t=22*)

A: so honeslty i've just been making like 60 my cut-off? (*t=37*)

C: Ive been doing about 60-65 for the first one (*t=51*)

B: ive been using 40 just to be safe (*t=61*)

B: what are u guys going to use on this round (*t=74*)

C: and then once Ive gotten to the 2nd and 3rd rounds Ive decreased it to like 40 and then 20 just to be safer (*t=79*)

A: uhhh, i'm probably going to stick to 60ish (*t=95*)

A: idk really haha (*t=99*)

C: I think I'm going to do 60 too fir the first round (*t=111*)

B: lets hope it gives us all 100s (*t=116*)

A: yeah, forreal lol (*t=121*)

B: *all get 1s' line up for dimes (*t=141*)

A: i've been just trying to calculate it so i atleast come out with $20 when i can (*t=148*)

A: wow, no don't even joke (*t=155*)

A: haha (*t=158*)

B: lol (*t=159*)

C: did you guys decrease your cutoff as the rounds go on or no? (*t=166*)

A: the lowest i've gone is 50 (*t=175*)

B: i left mine at 40 worked good, either get 60+ or 1 (*t=184*)

A: because we've had some rounds where the values were really low, but not too many (*t=191*)

A: I usually got pretty lucky I think (*t=199*)

C: yea i havent had too many in the 20-50 range (*t=205*)

A: all right, 60s it is haha (*t=255*)

B: if we all have all put a high cut off do you think its better for this round (*t=258*)

A: uhhhh I think that's why I like being in the middle because it's kinda a catch all. (*t=281*)

A: like you might not make a lot but you probs won't get 0.01 either (*t=291*)

A: or .10 (*t=295*)

Session-17, Group-3

C: Hi! (*t=9*)

B: Hello! (*t=11*)

A: hi! (*t=16*)

C: How is everyone? (*t=18*)

A: kinda tired (*t=23*)

C: I hear ya. Me too (*t=30*)

B: Yeah (*t=33*)

C: Anyways, what would you guys like to do? (*t=46*)

A: Im not really sure (*t=71*)

C: Does anyone have any opinions about the study cut offs. (*t=75*)

B: my cutoff was 50, what are yours? (*t=95*)

C: I am not really sure either. I had lower cut off during my game (1-10) (*t=100*)

A: mine was 35 (*t=109*)

B: 1-10 was kinda low, i think (*t=118*)

C: How did 50 work? Or 35? (*t=119*)

B: 50 give a lot of chance to get 100 (*t=127*)

C: Did it give you higher chances of having a better ball? (*t=132*)

B: yeah, like i have 5 times 100 (*t=151*)

A: I dont necesarily think so (*t=155*)

C: Good. My lower numbers did not work well for me (*t=166*)

B: how many 100 did 35 get? (*t=172*)

A: mm maybe like 5 or 6 (*t=186*)

C: I did it because at the beginning of the experiment I had several 1s going back to 1s (*t=197*)

C: Yeah, I had like 4 100s, and a few 80s (*t=211*)

C: You did better (*t=214*)

C: So it sounds like a slightly higher cut off gives better odds (*t=238*)

C: Thanks for the good information (*t=252*)

A: okay so you want to go with the 50 (*t=253*)

C: I do (*t=259*)

C: Want to go with 50, sorry (*t=264*)

A: lol its cool (*t=279*)

C: It seems like it yields better probability in the outcome (*t=280*)

C: Cool (*t=282*)

C: Good luck to everyone n the rest of the study (*t=297*)

Session-17, Group-4

C: I've been using 60 as my minimum cutoff (*t=22*)

B: 50 seems to be the safest bet. Worked well so far. (*t=28*)

A: ive used 48 (*t=33*)

B: so lets averaged them? (*t=53*)

A: 49???? (*t=64*)

C: Around 52 or 53? (*t=96*)

C: If we average the 3 (*t=102*)

B: yeah it would be 52 and change (*t=108*)

C: Ok so how about 52 (*t=117*)

B: works for me (*t=122*)

A: hmmm (*t=130*)

A: what about a little lower (*t=161*)

B: why lower? (*t=169*)

B: 51? (*t=184*)

A: what if it's 50 (*t=186*)

B: ok (*t=189*)

C: Works for me (*t=192*)

A: and then we get a 1 (*t=193*)

A: ok so 50 (*t=198*)

B: yes, 50 (*t=203*)

A: :) (*t=221*)

Session-17, Group-5

C: soo what should we make the cutoff (*t=14*)

B: As the rounds go on, the chances that the ball the computer is holding has a really small value increases (*t=31*)

C: yea (*t=38*)

B: because in previous rounds, if someone had a small value they probably switched and gave it to the computer (*t=55*)

B: so what I've been doing is decreasing my cutoff values each round (*t=66*)

C: so as the rounds go on we should increase the cutoff (*t=67*)

A: go down by 5 for cutoff in each round? (*t=67*)

B: decrease (*t=74*)

C: decrease yea (*t=80*)

C: my bad haha (*t=83*)

B: I've been doing 50/40/20 (*t=93*)

B: idk what you guys think haha (*t=99*)

C: ive been doing 30/25/20 (*t=107*)

C: because im cool with $3 (*t=121*)

C: instead of potentially giving up close to $5 (*t=141*)

B: yeah that's true (*t=147*)

A: ive been 45/35/25 (*t=148*)

A: doesn't matter to me (*t=156*)

C: how about we do 40/30/20? (*t=163*)

B: yeah sounds good (*t=169*)

A: perfect (*t=173*)

C: alright cool (*t=176*)

C: lets make some money (*t=182*)

B: we get matched with other people though anyway right haha (*t=185*)

C: oh idk whats the point of this then (*t=200*)

B: just to share strategies I guess lol (*t=213*)

C: true haha (*t=220*)

A: yeah it says above each team member will be assigned a different group (*t=241*)

C: well good luck (*t=242*)

B: yep to you guys too haha (*t=258*)

C: 8ˆ)-+((*t=278*)

Session-17, Group-6

A: Hello World! (*t=12*)

C: Hello (*t=16*)

B: hello (*t=18*)

B: what cutoff number do you guys feel is best/ (*t=64*)

A: What have you folks been using as your cutoff? (*t=65*)

A: I've been doing 20 (*t=82*)

B: ive been using everything above 60 (*t=85*)

C: So here are my thoughts: The chance of you getting a low # that someone else switched out is based on which mover you are and what round it is. Typically I go with ˜50 if I am mover 1 or 2 on the first round (*t=96*)

B: so is 50 the best option then? (*t=129*)

A: Alright so mover 1 and 2 we want to do 50 plus (*t=131*)

B: that sounds good (*t=152*)

C: Then drop down for each subsequent round. Because you get stuck with what you switch too and as time goes on that is much more likely to be a low # (*t=154*)

A: So thats round 1 (*t=161*)

A: Do the same thing for round 2?? (*t=169*)

B: yeah we should (*t=191*)

A: Alright want to drop to 40? (*t=197*)

B: it feels better biting doin (*t=202*)

B: yeah we should drop to 40 (*t=218*)

C: I'd say if you are mover 1 or 2, you do 50/40/20. Mover 3 40/30/20 (*t=230*)

A: Follow that exactly (*t=240*)

C: Or something like that (*t=243*)

B: ok gotcha (*t=255*)

A: ;) (*t=273*)

C: Go team! :) (*t=291*)

A: Let (*t=296*)

Session-18, Group-1

B: wazzzzzzzzzzzzzzup any ideas? (*t=9*)

C: noooope (*t=16*)

B: ive just put 40 everytime haha (*t=33*)

C: i did 49 everytime (*t=46*)

A: i did 10 everytime (*t=58*)

B: soooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooooo should we all put 10 orrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr (*t=101*)

C: hmmmm (*t=104*)

C: my brain hurts i just wanna leave (*t=129*)

A: haha (*t=136*)

B: if i walk outta here with 20 bucks ill be happy (*t=153*)

C: ya if it's less i'll feel like i wasted my time (*t=177*)

C: but does 10 work/? (*t=185*)

B: i think imma stick with 40, it worked for me nice (*t=216*)

C: same w 49 hehe (*t=228*)

B: alright so basically we all just wasted 5 min here (*t=245*)

B: GO TEAM (*t=248*)

C: other people r typin so much like damn what are they plannin out here (*t=257*)

B: world domination (*t=266*)

A: no idea (*t=267*)

C: may the odds be ever in your favor (*t=288*)

C: good luck yallllll (*t=294*)

Session-18, Group-2

B: hi (*t=10*)

C: I always put 42 (*t=14*)

C: every time (*t=17*)

A: I went 70 pretty much everytime (*t=26*)

B: im cool w/ 42 (*t=35*)

A: It was pretty successful (*t=42*)

C: 42 was also successful (*t=52*)

A: I got 100 a good amount of times (*t=54*)

C: i think they had higher values for the last part than the first (*t=66*)

C: is this the team or do we get new teams? (*t=78*)

A: We are collectively deciding on one value right? (*t=79*)

B: i also went in the 40's and got 100 6-10 times (*t=82*)

C: me too (*t=92*)

B: this is our team (*t=94*)

B: idt we all have to say the same amount tho (*t=111*)

A: I know but are we deciding on one value collectively? (*t=113*)

B: i dont belive so, just talking about a gameplan (*t=128*)

B: i just dont want .10 tbh (*t=167*)

A: ok so who ever gets to decide, you guys want to go in the 40s? (*t=171*)

A: I would prefer to go a little higher (*t=185*)

A: like 60s (*t=193*)

A: ???? (*t=226*)

C: i guess the question is, if we all put the same number, will we get the lower thing that was given up by someone if they accepted the higher one (*t=230*)

B: i think we all play the round with other people like normal and then one of our values in chosen as our payment (*t=261*)

B: so we dont all have to say the same # (*t=272*)

A: Whats the point of the chat then? (*t=287*)

C: if we were all successful, should we just play as we had been (*t=292*)

Session-18, Group-3

B: any of you know what we're supposed to be discussing? (*t=47*)

C: What the minimum should be? (*t=57*)

B: Awesome. Thanks (*t=70*)

C: maybe 60? (*t=83*)

A: so what value are you planning to set (*t=85*)

A: i guess it can be lower, around 50? (*t=128*)

C: that sounds good (*t=137*)

A: ˆ ˆ (*t=153*)

C: so we all set 50 as minimum (*t=212*)

A: yes, i would do this (*t=237*)

B: we'll all be matched to different groups. I'm not quite sure why it would matter whether or not we all picked the same (*t=255*)

A: oh (*t=267*)

A: i thought we will be in the same group... sry (*t=284*)

C: same (*t=288*)

A: good luck (*t=299*)

B: 50 would work if we were all together, but in separate groups, we should probably just do as before (*t=300*)

Session-18, Group-4

C: hello (*t=56*)

A: hello (*t=64*)

B: hey hows it going (*t=81*)

C: oh you know pretty solid (*t=91*)

A: i really have to pee (*t=98*)

C: thanks for the info (*t=107*)

B: Im getting sleepy (*t=110*)

C: (*t=121*)

C: lets all just get 100 on this last level so we're gtd the $10 (*t=121*)

A: are we supposed to be deciding anything (*t=136*)

C: not really just talking about what our cutoffs will be (*t=152*)

A: mine has been 50 the whole time (*t=163*)

C: i set 50 for first mover and less for second & third (*t=178*)

C: but its mostly luck (*t=193*)

B: Mine are 20 if Im the first or second mover; after that I use 2 (*t=220*)

C: the key is to just get a 100 ball (*t=266*)

C: gl (*t=298*)

Session-18, Group-5

C: What's good team (*t=15*)

A: hey team! My strategy has been to choose a low cutoff (between 10 and 25) since there seem be a lot of 1s in each round and it seems better to keep anything above 1 even if it's not that high of a number (*t=58*)

A: sorry that was super detailed (*t=95*)

C: I've been going around 40-50. Mine have had a lot of 100s (*t=121*)

A: i think it is good to choose a higher cutoff if you are mover 1 (*t=154*)

A: i have just by chance been mover 3 a lot, which means I am more likely to get someone's discarded 1 (*t=170*)

B: I choose a cutoff value of 50. Only because there seem to be more numbers above 50 than below (*t=183*)

C: I would agree with that. I sort of assume the later you move the worse the remaining ball is (*t=195*)

B: that's true. It's better to find out early what the value of your ball is. And keep it if it is high. (*t=243*)

A: I guess I am not sure if I should change my strategy of choosing a lower-ish cutoff to choosing a slightly higher one (*t=268*)

C: May the force be with you (*t=298*)

Session-18, Group-6

B: k, so is this supposed to be like economics omegle? (*t=30*)

C: basically (*t=46*)

B: anyone had an econ course yet? (*t=56*)

B: I'm minoring in it (*t=62*)

A: My strategy is to start my cutoff highest in the first round, usually around 50. Then I decrease it as the rounds go on, to 40 then to 30 or something like that. (*t=78*)

B: I figure this: (*t=92*)

B: 25% for both 1 and 100 (*t=98*)

A: But sorry no I have not taken any econ class in college. (*t=98*)

B: after that, 50% for above 50 (*t=116*)

C: Is it just me or is there more like a 75% chance of a 1 (*t=121*)

B: there is a 26% chance for a 1 (*t=134*)

B: 26% for 100 (*t=144*)

C: Right i get that but there's been like 3 ones in each group i've been in (*t=151*)

B: the rest is random (*t=153*)

B: Yea, and I've been denied seeing my number like 30 times (*t=171*)

C: Like multiple 1's so even when I switch a 1 I get a 1 haha (*t=177*)

B: it's just bad luck haha (*t=181*)

B: happened to me to (*t=188*)

B: too* (*t=190*)

A: Same. (*t=194*)

B: yo who's tryna get some food after? lol (*t=213*)

B: okay but just go 50 and then u have a 2/3rds chance of getting above your cutoff (*t=240*)

C: okie will do (*t=256*)

B: econ minor, business major, had stats, those are my qualifications xDD (*t=274*)

A: v hungry but I have class after :(But basically if you haven't seen the number by the third time but like 2 as your cutoff so we dont get 10 cents plz (*t=283*)

Session-19, Group-1

B: So... does anybody have any strategies? (*t=20*)

B: Or is this all up to chance? (*t=49*)

C: i haven't found any strategic way to go about this...just been picking a number i would be ok with getting (*t=95*)

B: Same (*t=115*)

A: ive been picking low numbers and it's been turning out well for me.. (*t=128*)

B: How low? (*t=137*)

A: like single digits (*t=149*)

A: but i feel like theres an element of teamwork here (*t=167*)

A: maybe two people pick low and one pick high? (*t=174*)

A: honestly i have no idea.. (*t=181*)

B: We could try that (*t=187*)

C: ya works for me (*t=196*)

B: So, i'll pick low I guess (*t=206*)

A: haha ok (*t=212*)

C: ill go high (*t=226*)

A: i can pick low (*t=228*)

C: how high do you guys want me to go? (*t=239*)

A: have you guys been picking high or low and how has that been working out for you? (*t=252*)

B: I've been picking 40 and have gotten mixed results (*t=266*)

C: ive been going around 30-40 and its been going pretty good (*t=269*)

A: ok so maybe two high and one low (*t=279*)

C: when we say high what are we talking about (*t=294*)

A: because low has been real good (*t=294*)

Session-19, Group-2

C: What have you all been making your cutoffs? (*t=42*)

B: 30 fam (*t=66*)

A: I have been making mine at 50 (*t=71*)

C: i have been doing 50 too (*t=82*)

B: amateurs lol (*t=276*)

Session-19, Group-3

C: what cutoff's have you guys been using (*t=37*)

A: i used 30 for every one (*t=50*)

C: i used 60 (*t=57*)

B: I've been using 40 every time and it's been working pretty well (*t=60*)

A: yea i feel like the lowerish ones have pretty good outcomes (*t=82*)

C: alrighty so what do you guys suggest we use? 30,40? (*t=116*)

A: 35? (*t=126*)

C: sweet sounds good to met (*t=143*)

C: me* (*t=149*)

B: yeah that works (*t=155*)

C: lets make some cash $$$ (*t=290*)

Session-19, Group-4

C: hello (*t=25*)

B: hi (*t=28*)

A: hi (*t=30*)

B: i say we make cut off 55 (*t=36*)

B: or 60 (*t=56*)

B: idk (*t=57*)

A: i have been doing 60 or 65 (*t=64*)

C: ive been going lower (*t=73*)

B: like what (*t=84*)

C: like 40's (*t=89*)

A: has it been working well (*t=94*)

C: yeah (*t=98*)

C: but we could do 55 (*t=113*)

C: that makes sense (*t=118*)

A: same here so i say 55 (*t=125*)

B: okay perfect (*t=136*)

B: good talk (*t=141*)

A: good luck ppl (*t=150*)

B: thx u too (*t=155*)

B: hopefully we all make $$$$$$$$$$$ (*t=167*)

A: in desperate need of it always (*t=182*)

B: #collegelife (*t=191*)

Session-19, Group-5

A: Hi (*t=19*)

B: hey (*t=23*)

C: Sup (*t=27*)

C: I usually go 75 50 25 (*t=39*)

B: i do 57, 54, 50 (*t=60*)

B: #risky (*t=70*)

C: i guess the goal is to get the lowest possible value into the computers hands (*t=75*)

A: I've been doing (*t=76*)

A: 50 (*t=84*)

A: how can we do that (*t=122*)

B: pray (*t=148*)

C: Basically lol (*t=158*)

C: There's usually one ball thats pretty low (Like sub 10) right? (*t=182*)

A: yeah, but i have seen a couple low balls in one cycle (*t=216*)

B: yeah. i can only remember one instance where it was like 100 100 99 68 (*t=220*)

B: one for me was 1 1 1 1 (*t=240*)

A: i guess the smaller the cutoff we do the better for all of us for the most part? (*t=276*)

B: well, do good guys! maybe 30 as cutoff? (*t=287*)

B: or 20? (*t=295*)

C: 31 (*t=297*)

A: sounds good to me! (*t=298*)

C: :P (*t=299*)

Session-19, Group-6

C: Any ideas? (*t=34*)

B: Initial thoughts? (*t=37*)

A: 50? (*t=67*)

B: 35? (*t=78*)

C: Yeah 35 sounds good, so a lower value is switched out (*t=121*)

A: Cool (*t=129*)

B: It has worked well for me in previous cycles (*t=155*)

A: I've been doing well with 65 (*t=176*)

A: But 35 is more safe (*t=188*)

B: How many .10 vs 100? (*t=193*)

C: I agree with 35 (*t=213*)

B: 35 it is (*t=240*)

A: Sounds good (*t=248*)

Session-20, Group-1

A: hi guys (*t=18*)

B: hello (*t=23*)

C: hi (*t=24*)

A: what do we want to do for cutoffs (*t=25*)

B: what have u guys been doing prior (*t=37*)

B: ive been doing 70 (*t=42*)

C: i've been keeping mine pretty low, around 40 (*t=53*)

A: i think we should start out higher and then go lower in the rounds (*t=61*)

C: yeah i agree (*t=71*)

B: that would work (*t=77*)

A: so first round we should do 70? (*t=98*)

B: im good with that (*t=111*)

C: okay (*t=113*)

B: then have like 40 be our lowest (*t=126*)

A: ok (*t=130*)

C: sounds good (*t=134*)

A: so never go lower than 40? (*t=162*)

C: yeah maybe 40 for the last round? (*t=176*)

B: how many rounds are there again? (*t=185*)

C: 3 (*t=194*)

A: three (*t=194*)

A: so 70 for the first, 40 for the last (*t=206*)

A: what about the middle round? (*t=217*)

B: what about the second round (*t=220*)

B: 55?? (*t=228*)

C: somewhere in the middle (*t=232*)

A: that works (*t=232*)

C: yeah (*t=234*)

B: okay lol (*t=236*)

A: let's hope were lucky haha (*t=245*)

A: or one of us is I guess (*t=257*)

C: haha yeah (*t=263*)

C: good luck guys (*t=289*)

A: same to you (*t=294*)

B: you too! (*t=299*)

Session-20, Group-2

A: Hello world! (*t=12*)

B: hey (*t=37*)

C: Sup (*t=43*)

A: Does anyone have a good strategy for this? (*t=48*)

B: i'm just going to keep doing it how i did before tbh (*t=72*)

A: Yeah thats how I feel too (*t=85*)

C: same (*t=92*)

B: cool cool (*t=108*)

A: since we do not know the order of the chosers, we cannot really make a susinct gameplan (*t=126*)

A: did anyone watch south park on wednesday? (*t=141*)

B: nah i don't like that show (*t=159*)

C: No was it a good episode? (*t=162*)

A: yeah it was pretty funny (*t=178*)

C: I'll have to watch it over the weekend (*t=193*)

A: Im sorry for you member B (*t=194*)

C: Anyone into AHS (*t=203*)

B: nope guess i just live under a rock (*t=227*)

A: I was invited over someones house tonight to watch it but ive never seen it before (*t=228*)

B: t-minus 1 minute thank god (*t=251*)

C: It's really good kind of a creepy show tho (*t=256*)

A: yeah this sucks (*t=258*)

C: yeah I just wanna nap tbh (*t=264*)

A: #dicksoutforharambe (*t=273*)

C: RIP (*t=284*)

B: fuck penn state (*t=289*)

C: ^^^^^ (*t=294*)

Session-20, Group-3

C: greetings (*t=8*)

A: hello (*t=27*)

B: hey (*t=44*)

A: what are you thinking (*t=49*)

A: im not really sure how we help each other (*t=66*)

C: My thought process is to set your first cutoff highest, second cutoff lower than that, and third cutoff lower than that because each successive round there is a greater chance that someone else switched with the computer ball and therefore gave (*t=89*)

A: yeah thats a good idea (*t=109*)

C: so i usually set my fist at 50, second 40, and third about 45 (*t=120*)

C: third about 35*** (*t=126*)

B: well thats good with me (*t=128*)

A: yeah ive been always doing 50 pretty much but thats a better idea (*t=138*)

A: i will do that (*t=150*)

C: have you guys found a different successful strategy (*t=168*)

B: I just kind of eyeball it but If thats been working for you (*t=176*)

C: i dont think we're allowed to say specifically but yes it's been working for me (*t=200*)

A: okay good (*t=208*)

C: best of luck (*t=215*)

A: thanks you too (*t=220*)

Session-20, Group-4

C: if you're the first mover set your threshold pretty high (*t=42*)

C: like around 60-75 (*t=50*)

C: if you're second mover set it around 40-50 (*t=63*)

A: and go down depending on what mover you are (*t=65*)

C: and if you're third set it at like 25 (*t=74*)

C: ˆwhat team member A said (*t=85*)

C: Team Member B you got it? (*t=113*)

B: yes (*t=119*)

C: alright cool (*t=126*)

A: sounds good (*t=149*)

C: about to make some $$$$$$$$$ (*t=276*)

A: let's hope (*t=293*)

C: we got this (*t=297*)

Session-20, Group-5

A: hi (*t=9*)

B: hey (*t=29*)

C: hi (*t=50*)

A: does anyone have a stradegy (*t=54*)

C: what do you think our cutoffs should be (*t=59*)

A: I've just been using 50 (*t=76*)

B: same (*t=87*)

A: do you want to use that or something else (*t=118*)

B: sounds good to me, C are you good with it? (*t=144*)

C: I've actually used a cutoff of 2 for a lot of the rounds, seeing as that anything is better than a $0.10 payoff (*t=166*)

C: but i'm good with 50 if you guys want to do that (*t=179*)

A: has 2 worked for you for the most part (*t=197*)

C: yeah for the most part, because when you use 50 i feel like you end up losing a lot of opportunities to get more than $0.10 (*t=239*)

B: using 50 I dont think I got .10 once and I got about 5 $10.00 (*t=246*)

C: up to you guys though (*t=252*)

A: doesnt matter to me (*t=270*)

B: how did 50 work for you A? (*t=273*)

A: i only got .10 twice (*t=292*)

C: okay we can do 50 (*t=297*)

A: so good i guess (*t=297*)

Session-20, Group-6

C: how should we choose (*t=41*)

B: I have no idea (*t=65*)

C: i guess just make the cut off higher rather than lower? (*t=88*)

A: just make sure we get a number larger than 1 (*t=97*)

B: yeah thats what i was thinking. Make the cutoff a bit higher than usual. (*t=122*)

C: okay sounds good (*t=134*)

C: i feel like its all random anyway (*t=210*)

A: yeah theres no way to predict anything (*t=227*)

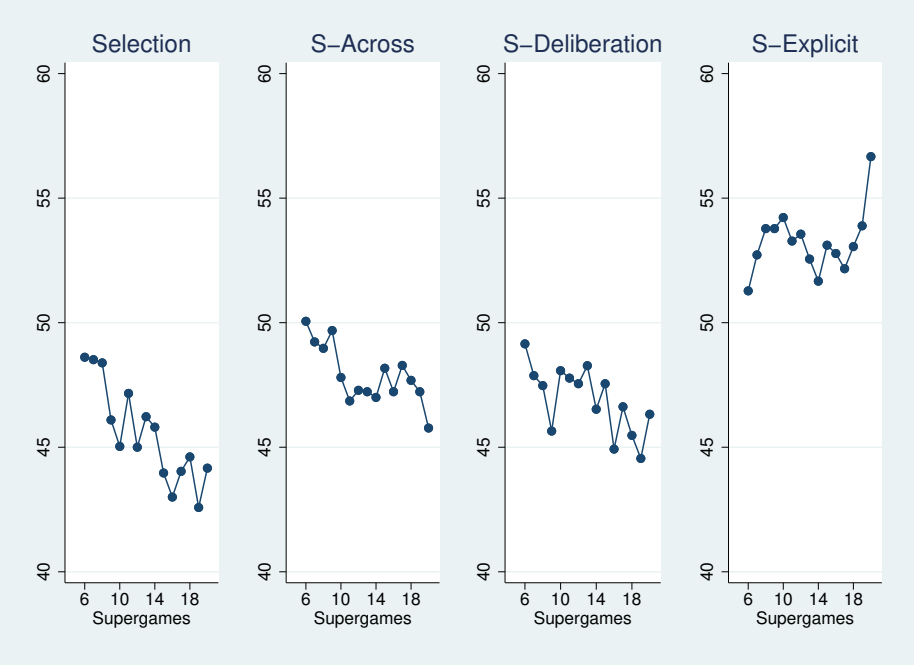
B: Lets just hope the person selected gets 100 off the bat (*t=260*)

C: yeah (*t=278*)

APPENDIX F. ONE-PARAMETER REINFORCEMENT LEARNING MODEL

In this section we use a one-parameter reinforcement learning model, based on Erev and Roth (1998) and Luce (1959), to explain the differences in behavior across some of our treatments for subjects classified as *stationary*. Figure F.1 plots the average round-1 cutoff for supergames 6-20 for treatments Selection, S-Across, S-Deliberation, and S-Explicit. As is clear from the graphs, there is a marked difference in the cutoff choices between S-Explicit and the other treatments. Figure F.2 plots the same averages, but combining the treatments Selection, S-Across and S-Deliberation.

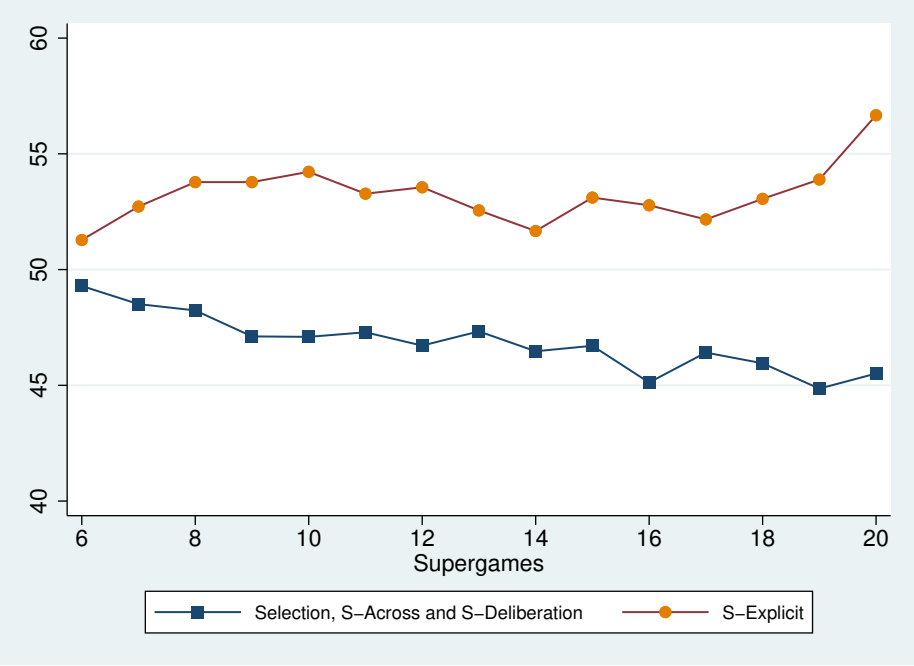
FIGURE F.1. Average Cutoff for Stationary Subjects in Round 1



Note: Subjects are classified as *stationary* if their cycle-21 cutoffs satisfy $|\mu_1 - \mu_2| \leq 2.5$ and $|\mu_1 - \mu_3| \leq 2.5$, where μ_t is the cutoff value chosen in round t.

One possible reason for the observed difference is the type of learning available for subjects in each case. In the S-Explicit treatment, the adverse selection was implemented through a time-dependent rule, with the rematching pool comprised of all three balls in round 1, the two lowest-value balls in round 2, and the lowest-value ball in round 3. For this reason, there were no mover types in treatment S-Explicit, and, since half of the time subjects make a decision in round 1, there is an overall lower chance of observing a bad outcome after switching in S-Explicit compared to other treatments with first, second, and third movers.

FIGURE F.2. Average Cutoff for Stationary Subjects in Round 1



In what follows, we estimate a simple one-parameter reinforcement model that best fit the data for treatments *Selection, S-Across,* and *S-Deliberation* using data only for subjects classified as *stationary*. Later, we use the optimal parameter estimate to *predict* round-1 cutoff values for the *S-Explicit* treatment, again restricting the analysis to the *stationary* subjects.

The Model. In supergame s = 6, each player n has an initial propensity to choose the *k*-th cutoff value, where $k \in [1, 100]$, given by a non-negative number $q_{nk}(1)$. We assume that each player has an equal propensity for each of the possible cutoffs, such that:

(1) $$q_{nk}(1) = q_{nj}(1) \;\; \forall n \text{ and } \forall k$$

The reinforcement of receiving payoff x is given by the identity function:

(2) $$R(x) = x$$

Suppose that player n chooses cutoff k in supergame s. For supergame s+1, he adjusts the propensity of his j^{th}-cutoff according to:

$$q_{nj}(s+1) = \begin{cases} q_{nj}(s) + R(x), & \text{if } j = k \\ q_{nj}(s), & \text{otherwise} \end{cases} \tag{3}$$

Finally, the probability that player n chooses the kth cutoff in supergame s is given by:

$$p_{nk}(s) = \frac{q_{nk}(s)}{\sum_{j=1}^{100} q_{nj}(s)} \tag{4}$$

Equation (4) is Luce's linear probability response rule. Note that, even though we assume that every cutoff has the same propensity at s = 6, we made no assumptions about the sum of propensities, which appear in the denominator of equation (4). This is the only parameter of the model, and, together with the size of the payoffs, it determines the speed of learning.

Let X be the average payoff of all players in all four treatments. The parameter s(1), which is assumed to be the same for all players, is given by:

$$s(1) = \frac{\sum_{j=1}^{100} q_{nj}(1)}{X} \tag{5}$$

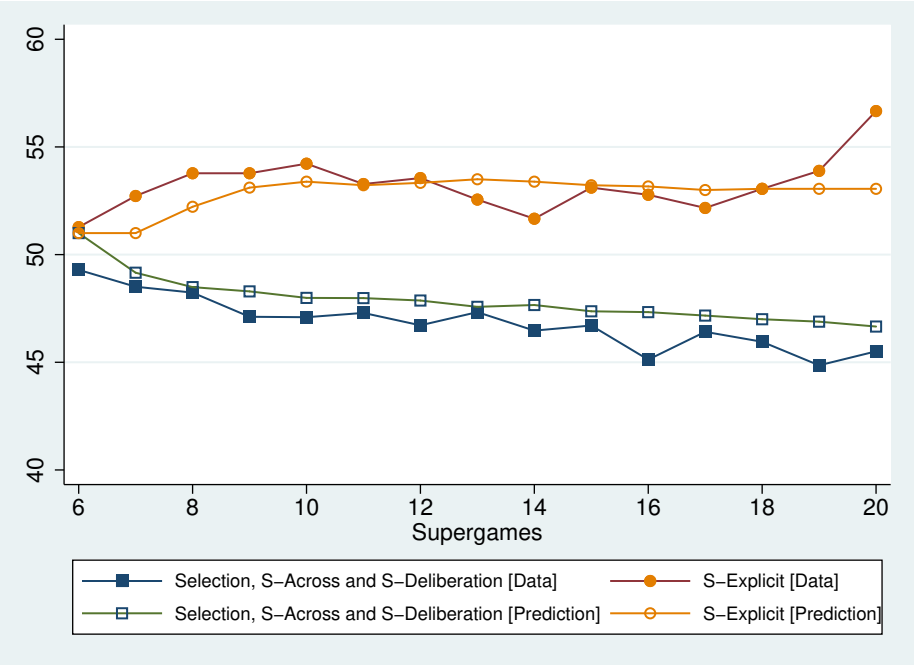
which, together with (4), implies that the initial propensities are:

$$q_{nj}(1) = p_{nj}(1)s(1)X \tag{6}$$

Both $p_{nj}(1)$ and X are known: the first by assumption, and the second from the data. All we need is an estimate for s(1). The value that minimizes the Mean Squared Deviation (MSD) using data from Selection, S-Across, and S- Deliberation is s(1)=0.162, which indicates an extremely fast learning speed.

Figure F.3 presents the same graph as in Figure F.2, but also plots the *fitted* values for *Selection, S-Across,* and *S-Deliberation* and the *predicted* values for *S-Explicit*.

FIGURE F.3. Average Cutoff for Stationary Subjects in Round 1, Data and Prediction (s(1) = 0.162)



Note that both in S-Explicit and in the other treatments, subjects start choosing very similar cutoffs. The subsequent experience with realized payoffs, however, is different, which accounts for the increasing profile of S-Explicit cutoff choices and the decreasing profile of cutoff choices in the other treatments.