Web Appendix Supplement

for

Temporally Designing the Consumer Experience: Three Essays Examining the Influence of Time Architecture on Consumer Behavior

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Web Appendix A (Essay 1). Table 1 Study 1: Regression Results Predicting (Self-Reported) Perceived Benefit

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.307~	.320~
				(.173)	(.171)
Message Framing (1 = planning prompt, 0 = control)		.117	.095	-.036	-.064
		(.087)	(.086)	(.122)	(.121)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-1.618***	-1.603***	-1.770***	-1.761***
		(.087)	(.086)	(.122)	(.120)
Current Product Usage (1 = using iphone, 0 = not using iphone)	.232*		.205*		0.215*
	(.105)		(.086)		(.086)
Liking of Online Shopping	.205***		.177***		.175***
	(.052)		(0.042)		(.042)
Constant	5.327***	6.197***	6.092***	6.272***	6.164***
	(.077)	(.075)	(.086)	(.086)	(.095)
Number of Cases	681	681	681	681	681
R^2	.029	.340	.362	.343	.365
Adj. R^2	.026	.338	.358	.340	.360
F	10.180	174.491	95.744	117.741	77.579
df	2	2	4	3	5
p	.000044	< .000001	< .000001	< .000001	< .000001

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 2 Study 1: Regression Results Predicting (Self-Reported) Planning Likelihood

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.360	.370~
				(.225)	(.221)
Message Framing (1 = planning prompt, 0 = control)		.116	.083	-.063	-.101
		(.113)	(.111)	(.159)	(.156)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.714***	-0.692***	-.893***	-.875***
		(.113)	(.111)	(.158)	(.155)
Current Product Usage (1 = using iphone, 0 = not using iphone)	.253*		.241*		.252*
	(.114)		(.111)		(.111)
Liking of Online Shopping	.290***		.276***		.274***
	(.056)		(.055)		(.055)
Constant	5.543***	5.975***	5.853***	6.063***	5.937***
	(.083)	(.097)	(.112)	(.111)	(.122)
Number of Cases	681	681	681	681	681
R^2	.045	.057	.098	.061	.101
Adj. R^2	.042	.054	.092	.057	.095
F	15.817	20.549	18.263	14.582	15.207
df	2	2	4	3	5
p	.0000002	< .0000001	< .0000001	< .0000001	< .0000001

Note. Significance values are indicated as follows: ~$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 3 Study 1: Regression Results Predicting Self-Efficacy

.	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.093	.067
				(.150)	(.147)
Message Framing (1 = planning prompt, 0 = control)		.213**	.190**	.166	.157
		(.075)	(.073)	(.106)	(.103)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.266***	-.252***	-.312**	-.285**
		(.075)	(.073)	(.106)	(.103)
Current Product Usage (1 = using iphone, 0 = not using iphone)	-.057		-.064		-.062
	(.074)		(.073)		(.073)
Liking of Online Shopping	.233***		.224***		.223***
	(.036)		(.036)		(.036)
Constant	5.888***	5.885***	5.924***	5.908***	5.939***
	(.054)	(.065)	(.074)	(.074)	(.081)
Number of Cases	681	681	681	681	681
R^2	.058	.029	.083	.030	.083
Adj. R^2	.055	.026	.077	.026	.076
F	20.694	10.243	15.218	6.951	12.202
df	2	2	4	3	5
p	< .000001	.000041	< .000001	.000130	< .000001

Note. Significance values are indicated as follows: ˜p < .10, *p < .05, **p < .01, ***p < .001. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 4 Study 1: Regression Results Predicting Self-Esteem

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				-.095	-.118
				(.195)	(.194)
Message Framing (1 = planning prompt, 0 = control)		.048	.035	.096	.094
		(.097)	(.097)	(.137)	(.137)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.090	-.082	-.043	-.023
		(.097)	(.097)	(.137)	(.136)
Current Product Usage (1 = using iphone, 0 = not using iphone)	-.083		-.085		-.089
	(.097)		(.097)		(.097)
Liking of Online Shopping	.143**		.141**		.142**
	(.048)		(.048)		(.048)
Constant	5.283***	5.260***	5.308***	5.237***	5.281***
	(.071)	(.084)	(.098)	(.096)	(.107)
Number of Cases	681	681	681	681	681
R^2	.014	.002	.015	.002	.016
Adj. R^2	.011	-.001	.010	-.002	.009
F	4.900	.547	2.654	.444	2.196
df	2	2	4	3	5
p	.007711	.579012	.032103	.721540	.053073

Note. Significance values are indicated as follows: ˜$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 5 Study 1: Regression Results Predicting Internal Locus of Control

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.059	.068
				(.146)	(.145)
Message Framing (1 = planning prompt, 0 = control)		.174*	.157*	.145	.123
		(.073)	(.072)	(.103)	(.102)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		.010	.022	-.019	-.012
		(.073)	(.072)	(.103)	(.102)
Current Product Usage (1 = using iphone, 0 = not using iphone)	.157*		.155*		.157*
	(.072)		(.072)		(.073)
Liking of Online Shopping	.145***		.142***		.141***
	(.036)		(.036)		(.036)
Constant	5.118***	5.110***	5.030***	5.124***	5.045***
	(.053)	(.063)	(.073)	(.072)	(.080)
Number of Cases	681	681	681	681	681
R^2	.030	.008	.037	.009	.038
Adj. R^2	.028	.005	.032	.004	.030
F	10.637	2.854	6.548	1.955	5.276
df	2	2	4	3	5
p	.000028	.058297	.000036	.119442	.000092

Note. Significance values are indicated as follows: ˜$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 6 Study 1: Regression Results Predicting Psychological Distance

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.183	.219
				(.221)	(.220)
Message Framing (1 = planning prompt, 0 = control)		.029	.022	-.063	-.087
		(.110)	(.110)	(.156)	(.155)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		.501***	.508***	.410**	.399*
		(.110)	(.110)	(.155)	(.155)
Current Product Usage (1 = using iphone, 0 = not using iphone)	.283*		.291**		.298**
	(.112)		(.110)		(.110)
Liking of Online Shopping	.018		.025		.024
	(.055)		(.054)		(.054)
Constant	3.429***	3.315***	3.161***	3.360***	3.211***
	(.081)	(.095)	(.111)	(.109)	(.122)
Number of Cases	681	681	681	681	681
R^2	.010	.030	.040	.031	.041
Adj. R^2	.007	.027	.034	.026	.034
F	3.256	10.354	7.009	7.130	5.805
df	2	2	4	3	5
p	.0391631	.0000372	.0000157	.0001016	.0000293

Note. Significance values are indicated as follows: ˜$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 7 Study 1: Regression Results Predicting Deal Fairness

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.257	.247
				(.181)	(.179)
Message Framing (1 = planning prompt, 0 = control)		.014	-.009	-.114	-.132
		(.091)	(.089)	(.128)	(.126)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.655***	-.640***	-.783***	-.762***
		(.091)	(.089)	(.127)	(.126)
Current Product Usage (1 = using iphone, 0 = not using iphone)	.058		.048		.056
	(.093)		(.089)		(.090)
Liking of Online Shopping	.226***		.216***		.215***
	(.046)		(.044)		(0.044)
Constant	5.121***	5.471***	5.449***	5.534***	5.505***
	(.067)	(.078)	(.090)	(.090)	(.099)
Number of Cases	681	681	681	681	681
R^2	.036	.072	.104	.074	.106
Adj. R^2	.033	.069	.098	.070	.100
F	12.490	26.109	19.552	18.105	16.044
df	2	2	4	3	5
p	.000005	< .000001	< .000001	< .000001	< .000001

Note. Significance values are indicated as follows: ˜$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Liking of online shopping is mean-centered.

Web Appendix A (Essay 1). Table 8 Study 1: Moderated Mediation Results

	Consequent											
	Including Covariates						Excluding Covariates					
	M_1 (Benefit)			Y (Planning Likelihood)			M_1 (Benefit)			Y (Planning Likelihood)		
Antecedent	Coeff.	SE	*p*	Coeff.	SE	*p*	Coeff.	SE	*p*	Coeff.	SE	*p*
X (Message Framing)	-.064	.121	.596	-.065	.140	.646	-.036	.122	.769	-.042	.141	.768
M_1 (Benefit)	–	–	–	.566	.045	< .0001	–	–	–	.596	.044	< .0001
W (Timing of Prompt)	-1.761	.120	< .0001	.121	.161	.450	-1.770	.122	< .0001	.162	.161	.316
XW (Message Framing x Timing of Prompt)	.320	.171	.062	.188	.200	.345	.307	.173	.077	.177	.201	.378
C_1 (Product Usage)	.215	.086	.012	.131	.100	.192						
C_2 (Liking of Online Shopping)	.175	.042	< .0001	.175	.050	< .001						
Constant	6.164	.095	< .0001	2.450	.297	< .0001	6.272	.086	< .0001	2.326	.296	< .0001
	R^2 = .365			R^2 = .273			R^2 = .343			R^2 = .258		
	$F(5,675)$ = 77.579, p < .0001			$F(6,674)$ = 42.214, p < .0001			$F(3,677)$ = 117.741, p < .0001			$F(4,676)$ = 58.776, p < .0001		

Note. Conducted using PROCESS 3.0 (model 8; 10,000 bootstrapped samples). Message framing coded as 1 (includes planning prompt) or 0 (control). Timing of prompt coded as 1 (after optimal deadline) or 0 (before optimal deadline). Covariates include the following: current product usage (1 = using iphone, 0 = not using iphone) and mean-centered liking of online shopping.

Web Appendix A (Essay 1). Table 9 Study 1: Parallel Moderated Mediation Results

	Consequent											
	M_1 (Benefit)			M_2 (Self-Efficacy)			M_3 (Self-Esteem)			M_4 (Internal Locus of Control)		
Antecedent	Coeff.	SE	*p*	Coeff.	SE	*p*	Coeff.	SE	*p*	Coeff.	SE	*p*
X (Message Framing)	-.064	.121	.596	.157	.103	.130	.094	.137	.495	.123	.102	.227
M_1 (Benefit)	–	–	–	–	–	–	–	–	–	–	–	–
M_2 (Self-Efficacy)	–	–	–	–	–	–	–	–	–	–	–	–
M_3 (Self-Esteem)	–	–	–	–	–	–	–	–	–	–	–	–
M_4 (Internal Locus of Control)	–	–	–	–	–	–	–	–	–	–	–	–
M_5 (Psychological Distance)	–	–	–	–	–	–	–	–	–	–	–	–
M_6 (Deal Fairness)	–	–	–	–	–	–	–	–	–	–	–	–
W (Timing of Prompt)	-1.761	.120	< .0001	-.285	.103	.006	-.023	.136	.865	-.012	.102	.909
XW (Framing x Timing)	.320	.171	.062	.067	.147	.649	-.118	.194	.542	.068	.145	.641
C_1 (Product Usage)	.215	.086	.012	-.062	.073	.398	-.089	.097	.363	.157	.073	.031
C_2 (Liking of Online Shopping)	.175	.042	< .0001	.223	.036	< .0001	.142	.048	.003	.141	.036	< .0001
Constant	6.164	.095	< .0001	5.939	.081	< .0001	5.281	.107	< .0001	5.045	.080	< .0001
	R^2 = .365 $F(5,675)$ = 77.579, p < .0001			R^2 = .083 $F(5,675)$ = 12.202, p < .0001			R^2 = .016 $F(5,675)$ = 2.196, p = .053			R^2 = .038 $F(5,675)$ = 5.276, p < .0001		

	M_5 (Psychological Distance)			M_6 (Deal Fairness)			Y (Planning Likelihood)		
Antecedent	Coeff.	SE	*p*	Coeff.	SE	*p*	Coeff.	SE	*p*
X (Message Framing)	-.087	.155	.575	-.132	.126	.294	-.074	.138	.594
M_1 (Benefit)	–	–	–	–	–	–	.449	.051	< .0001
M_2 (Self-Efficacy)	–	–	–	–	–	–	.260	.064	< .0001
M_3 (Self-Esteem)	–	–	–	–	–	–	-.105	.048	.028
M_4 (Internal Locus of Control)	–	–	–	–	–	–	-.003	.062	.960
M_5 (Psychological Distance)	–	–	–	–	–	–	.086	.037	.019
M_6 (Deal Fairness)	–	–	–	–	–	–	.162	.050	.001
W (Timing of Prompt)	.399	.155	.010	-.762	.126	< .0001	.077	.158	.625
XW (Framing x Timing)	.219	.220	.320	.247	.179	.168	.137	.196	.484
C_1 (Product Usage)	.298	.110	.007	.056	.090	.533	.128	.099	.196
C_2 (Liking of Online Shopping)	.024	.054	.654	.215	.044	< .0001	.116	.050	.021
Constant	3.211	.122	< .0001	5.505	.099	< .0001	1.023	.457	.026
	R^2 = .041 $F(5,675)$ = 5.805, p < .0001			R^2 = .106 $F(5,675)$ = 16.044, p < .0001			R^2 = .308 $F(11,669)$ = 27.009, p < .0001		

Note. Conducted using PROCESS 3.0 (model 8; 10,000 bootstrapped samples). Message framing coded as 1 (includes planning prompt) or 0 (control). Timing of prompt coded as 1 (after optimal deadline) or 0 (before optimal deadline). Covariates include the following: current product usage (1 = using iphone, 0 = not using iphone) and mean-centered liking of online shopping.

2.0 Web Appendix B (Essay 1). Study 2 Pilot Results

Using the identical lottery paradigm from Study 2, this pilot test used a 2 (timing: before optimal deadline, after optimal deadline) x 2 (message framing: planning, control) x 2 (incentive size: $5, $20) between-subjects design to test our predictions. The study sample consisted of MTurk workers who were compensated a nominal amount for participating .Prior to analysis, we excluded participants who reported technical problems (n = 12), resulting in a final analysis sample of 699 participants (50.36% female; M_{age} = 38.04 yrs, SD_{age} = 12.66 yrs)

Overall, 26.61% of participants enrolled in the lottery (n = 186). Similar to Study 2, we first conducted a binary logistic regression predicting lottery enrollment (1 = enrolled, 0 = did not enroll) to test for a possible three-way interaction between lottery framing (1 = planning, 0 = control), timing relative to optimal deadline (1 = after, 0 = before), and incentive size (1 = $20, 0 = $5), controlling for the same factors from Study 2, (mean-centered) income and day of survey administration (1 = weekend, 0 = weekday). Results showed no significant three-way interaction between incentive size, timing, and message framing (b = -.485, SE = .601, t = -.81, p = .419; Web Appendix B Table 1, model 5). Thus, all subsequent analyses control for incentive size. In addition, all subsequent analyses reflect covariate-adjusted estimates.

Results from a binary logistic regression analysis predicting lottery enrollment as a function of lottery framing and timing relative to the optimal deadline, controlling for (mean-centered) income, day of survey administration, and incentive size, found no main effect of lottery framing (b = .243, SE = .173, t = 1.40, p = .161; Web Appendix B Table 2, model 3). Including planning prompt content when providing lottery information (vs. providing the same information without planning prompts) did not increase the likelihood of entering the lottery (28.94% vs.

24.29%). Results, however, found, a significant main effect of timing relative to the optimal deadline (b = -.366, SE = .174, t = -2.10, p = .035; Web Appendix B Table 2, model 3), such that participants were significantly less likely to enter the lottery after (vs. before) the optimal deadline had passed (23.11% vs. 30.11%).

These were both qualified, however, by a significant framing x timing interaction (b = .694, SE = .351, t = 1.98, p = .048; Web Appendix B Table 2, model 5). For those in the after optimal deadline condition (who believed the optimal deadline had passed), including planning prompts when presenting the lottery information (vs. presenting lottery information without planning prompt content) significantly increased the likelihood of entering the lottery (28.50% vs. 17.72%; t = 2.39, p = .017), consistent with our predictions. For participants in the before optimal deadline condition, however, including planning prompts when learning of the lottery (vs. not including planning prompts in lottery information) did not increase likelihood of enrollment (29.37% vs. 30.84%; t = -.30, p = .763).

Web Appendix B (Essay 1). Table 1 Study 2 Pilot: Logistic Regression Results Predicting Likelihood of Lottery Enrollment

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing x Incentive Size				-.209	-.199
				(.704)	(.707)
Timing of Prompt x Message Framing				.805	.801
				(.523)	(.525)
Timing of Prompt x Incentive Size				-.036	-.037
				(.520)	(.521)
Message Framing x Incentive Size				-.035	-.052
				(.472)	(.474)
Message Framing (1 = planning prompt, 0 = control)		.248	.243	-.047	-.043
		(.173)	(.173)	(.353)	(.353)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.348*	-.366*	-.698~	-.717~
		(.173)	(.174)	(.389)	(.390)
Incentive Size (1 = $20, 0 = $5)		.383*	.391*	.473	.488
		(.173)	(.174)	(.331)	(.332)
Day of Week (1 = weekend, 0 = weekday)	.240		.255		.255
	(.172)		(.173)		(.174)
Income	.000002		.000002		.000002
	(.000002)		(.000002)		(.000002)
Constant	-1.132***	-1.176***	-1.295***	-1.068***	-1.190***
	(.121)	(.176)	(.197)	(.247)	(.263)
Number of Cases	699	699	699	699	699
Wald χ^2	3.500	11.131	15.118	15.511	19.496
p	.174	.011	.010	.030	.021
Log Likelihood	-403.206	-399.39	-397.396	-397.2	-395.207

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

Web Appendix B (Essay 1). Table 2 Study 2 Pilot: Logistic Regression Results Predicting Likelihood of Lottery Enrollment

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.693*	.694*
				(.349)	(.351)
Message Framing (1 = planning prompt, 0 = control)		.249	.243	-.065	-.071
		(.172)	(.173)	(.233)	(.235)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.351*	-.366*	-.721**	-.736**
		(.173)	(.174)	(.257)	(.259)
Incentive Size (1 = $20, 0 = $5)	.394*		.391*		.391*
	(.173)		(.174)		(.174)
Day of Week (1 = weekend, 0 = weekday)	.247		.255		.256
	(.173)		(.173)		(.174)
Income	.000002		.000002		.000002
	(.000002)		(.000002)		(.000002)
Constant	-1.343***	-.974***	-1.295***	-.815***	-1.136***
	(.155)	(.147)	(.197)	(.163)	(.209)
Number of Cases	699	699	699	699	699
Wald χ^2	8.705	6.225	15.118	10.204	19.054
p	.033	.044	.010	.017	.004
Log Likelihood	-400.603	-401.843	-397.396	-399.854	-395.428

Note. Significance values are indicated as follows: ˜*p* < .10, **p* < .05, ***p* < .01, ****p* < .001. Income is mean-centered.

3.0 Web Appendix C (Essay 1). Study 2 Results

Web Appendix C (Essay 1). Table 1 Study 2: Logistic Regression Results Predicting Likelihood of Lottery Enrollment

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing x Incentive Size				-.501	-.485
				(.601)	(.601)
Timing of Prompt x Message Framing				.812~	.789~
				(.439)	(.441)
Timing of Prompt x Incentive Size				-.110	-.117
				(.429)	(.430)
Message Framing x Incentive Size				-.353	-.368
				(.401)	(.401)
Message Framing (1 = planning prompt, 0 = control)		.156	.155	.095	.109
		(.147)	(.147)	(.298)	(.299)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.449**	-.443**	-.675*	-.659*
		(.148)	(.148)	(.326)	(.327)
Incentive Size (1 = $20, 0 = $5)		.315*	.315*	.664*	.671*
		(.147)	(.147)	(.275)	(.275)
Day of Week (1 = weekend, 0 = weekday)	-.016		-.008		-.006
	(.206)		(.208)		(.209)
Income	.0000017		.0000014		.0000013
	(.000001774)		(.000001789)		(.000001807)
Constant	-.863***	-.892***	-.894***	-.965***	-.974***
	(.079)	(.146)	(.149)	(.208)	(.211)
Number of Cases	904	904	904	904	904
Wald χ^2	.936	15.241	15.88	25.406	25.906
p	.62633936	.00162199	.00719545	.0006428	.00211654
Log Likelihood	-549.015	-541.863	-541.543	-536.78	-536.53

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

Web Appendix C (Essay 1). Table 2 Study 2: Logistic Regression Results for Loss Aversion (Loss Framing)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				-.213	-.212
				(.441)	(.442)
Message Framing (1 = planning prompt, 0 = control)		.056	.050	.168	.161
		(.220)	(.220)	(.320)	(.321)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.150	-.144	-.052	-.045
		(.219)	(.220)	(.299)	(.301)
Incentive Size (1 = $20, 0 = $5)	.186		.183		.183
	(.220)		(.220)		(.220)
Day of Week (1 = weekend, 0 = weekday)	-.453		-.450		-.451
	(.276)		(.277)		(.277)
Income	-.0000001		-.0000002		-.0000001
	(.00000273)		(.00000274)		(.00000274)
Constant	2.153***	2.216***	2.204***	2.166***	2.154***
	(.159)	(.188)	(.223)	(.211)	(.244)
Number of Cases	904	904	904	904	904
Wald χ^2	3.206	.531	3.682	.765	3.913
p	.36098192	.76663279	.59605443	.8577059	.6885107
Log Likelihood	-297.944	-299.281	-297.706	-299.164	-297.59

Note. Significance values are indicated as follows: ˜ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

Web Appendix C (Essay 1). Table 3 Study 2: Logistic Regression Results for Loss Aversion (Gain Framing)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.030	.044
				(.311)	(.312)
Message Framing (1 = planning prompt, 0 = control)		.015	.015	.001	-.007
		(.155)	(.155)	(.216)	(.216)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.085	-.096	-.100	-.118
		(.155)	(.156)	(.215)	(.216)
Incentive Size (1 = $20, 0 = $5)	-.186		-.189		-.189
	(.155)		(.155)		(.155)
Day of Week (1 = weekend, 0 = weekday)	.030		.032		.032
	(.218)		(.218)		(.218)
Income	-.0000012		-.0000013		-.0000013
	(.00000198)		(.00000198)		(.00000199)
Constant	-1.048***	-1.100***	-1.007***	-1.093***	-.997***
	(.112)	(.130)	(.155)	(.148)	(.171)
Number of Cases	904	904	904	904	904
Wald χ^2	1.857	.311	2.249	.32	2.269
p	.60252628	.85601096	.81370165	.95615252	.89333936
Log Likelihood	-500.724	-501.497	-500.528	-501.492	-500.518

Note. Significance values are indicated as follows: ˜*p* < .10, **p* < .05, ***p* < .01, ****p* <.001. Income is mean-centered.

To preliminarily explore the possibility that the timing of messages shifts participants to a general loss mindset, after learning about the structure of lottery and their position relative to the optimal deadline, all participants completed two items measuring loss aversion. For each item, participants decided between two choices, with one indicative of greater loss aversion. In presenting the decisions, one item adopted a loss framing (i.e., choosing between "10% chance of losing $1,000" and "a sure loss of $750") and the other adopted a gain framing (i.e., choosing between "90% chance of gaining $1,000" and "a sure gain of $250"), the order of which was counterbalanced.

We ran logistic regression analyses separately predicting experienced loss aversion for both the gain-frame measure (1 = chose "a sure gain of $250," 0 = chose "90% chance of gaining $1,000") and loss-framed measure (1 = chose "10% chance of losing $1,000," 0 = chose "a sure loss of $750") as a function of lottery framing (1 = planning, 0 = control), timing relative to optimal deadline (1 = after, 0 = before), and their interaction. Consistent with our prior analysis, we controlled for income, day of survey administration (1 = weekend, 0 = weekday), and incentive size (1 = $20, 0 = $5).

For loss aversion assessed with gain framing, we observed no main effect of planning prompt (24.48% vs. 24.20%; b = .015, SE = .155, t = .09, p = .925) and no main effect of missing the optimal deadline (23.54% vs. 25.11%; b = -.096, SE = .156, t = -.62, p = .536). In addition, the planning prompt x prompt timing interaction was not significant (b = .044, SE = .312, t = .14, p = .887).

The same pattern of results emerged for loss aversion assessed with loss framing. There was no significant main effect of either planning prompt (89.98% vs. 89/47%; b = .050, SE = .220,

t = .23, p = .821) or missing the optimal deadline (89.01% vs. 90.40%; b = -.144, SE = .220, t = -.65, p = .513), and no significant interactive effect (b = -.212, SE = .442, t = -.48, p = .631).

Results from Study 2 did not show an interactive effect of planning prompts and message timing on participants' reported loss aversion, regardless of whether loss aversion was measured using gain-framed or loss-framed risk decisions. Given the time at which loss aversion was measured (i.e., right after learning about the lottery's structure), this result suggests that the gain-loss mindset shift may not occur immediately following the intervention.

4.0 Web Appendix D (Essay 1). Study 2 Follow-Up Results

This follow-up to Study 2 was run as a post-hoc manipulation check regarding perceptions of the optimal deadline This study tests whether timing relative to the optimal deadline (before vs. after) impacted perceived benefit of enrolling in the lottery as predicted, without adversely impacting understanding of the next enrollment opportunity. Participants imagined the same lottery paradigm from Study 2, in which the next action opportunity is objectively equally beneficial for everyone (15 total entries) but framed either as being the largest possible number of entries (before optimal deadline condition) or the second-largest possible number of entries (after optimal deadline condition). For the purpose of this manipulation check, two additional factors from Study 2 (message framing and incentive size) are held constant in this study, such that all participants are exposed to the control messaging for a $5 lottery.

4.1 Method

This follow-up study used a 2 condition (timing: before optimal deadline, after optimal deadline) between-subjects design with a sample of MTurk workers (n = 899) who were compensated a nominal amount for participating. Consistent with Study 2, we excluded participants who reported technical problems or identified as a non-native American English speaker (n = 34), resulting in a final analysis sample of 865 participants (52.60% female;[1] M_{age} = 38.93 yrs, SD_{age} = 12.30 yrs).

[1] Participants could choose among three options: “male” (n = 402; 46.47%), “female” (n = 455; 52.60%), and “prefer not to say” (n = 8; .92%).

In this study, participants read a scenario about a lottery offered to MTurk workers. The lottery description used was identical to that presented to participants in Study 2. Unlike Study 2, however, participants in the current study imagined the lottery as a fictional scenario and did not actually participate in the lottery. The scenario described a $5 bonus lottery in which individuals had eight days, starting the next day, to enter an alphanumeric code into a separate website (accessible only from 9am to 1pm EST daily). Earlier lottery enrollment would earn extra entries, with the total number of entries possible (15, 10, 5, or 1) decreasing every two days.

Participants in the current study imagined learning about the lottery 8pm (EST), meaning the first opportunity anyone could enroll in the lottery was the next day (starting at 9am EST) to earn a total of 15 entries. Consistent with Study 2, we manipulated timing relative to the optimal deadline by manipulating whether enrolling the next day (for 15 total entries) represented that maximum number of entries possible. Holding constant the specific action subsequently available to participants (i.e., enrolling the following day for 15 entries), we shifted the timing of the optimal entry period by informing participants of an earlier opportunity to earn more lottery entries. Participants randomly assigned to the before optimal deadline condition received no additional lottery information, meaning the next possible opportunity they could enroll (i.e., the next day) offered 15 total entries. Participants randomly assigned to the after optimal deadline condition, however, were provided additional information indicating that they had missed the enrollment window offering 20 total entries. Thus, everyone could take the identical action (i.e., enrolling the following day) and receive the identical objective benefit (i.e., 15 total lottery entries), although some participants were led to believe that a superior benefit opportunity had passed (i.e., receiving 20 total lottery entries).

After reading the lottery description, participants responded to three items assessing the impact of the optimal deadline manipulation. Participants completed one item measuring perceived benefit of enrolling in the lottery, using a 7-point closed-ended response scale ("How beneficial would it be for you to enroll in the lottery the next day (11/14)?" 1 = Not at All Beneficial, 7 = Very Beneficial). In addition, participants completed two items measuring their understanding of their next enrollment opportunity. One item assessed understanding of when they would be able to next enroll in the lottery, which, for everyone, was the following day ("Because of when you learn of the lottery in the scenario (8pm on 11/13), you can't enroll in the lottery until the next day (11/14);" 1 = True, 0 = False). The other item assessed understanding of what outcome they would personally receive from their next enrollment opportunity ("Because of when you learn about the lottery in this scenario (8pm on 11/13), the greatest number of entries YOU could possibly get is 15;" 1 = True, 0 = False).

4.2 Results

All subsequent results reflect covariate-adjusted estimates. Two factors included in Study 2 analyses did not vary in this follow-up study (i.e., day of survey administration, incentive size) and, thus, were not included as controls. Like Study 2, however, all subsequent analyses control for participant-reported household income. All analyses are robust to the exclusion of this covariate.

4.2.1 Perceived Benefit of Next Enrollment Opportunity

Results from a linear regression analysis predicting perceived benefit of enrolling in the lottery the next day as a function of timing relative to the optimal deadline (1 = after, 0 = before), controlling for (mean-centered) income, show a main effect of timing (b = -.345, SE = .064, t = -5.40, $p < .0001$; Web Appendix D Table 1, model 3). Although everyone's next enrollment opportunity was identical (earning 15 total entries) participants in the after optimal deadline condition, who believed the optimal deadline had passed, perceived the next opportunity to enroll in the lottery as significantly less beneficial compared to those in the before optimal deadline condition (6.29 vs. 6.63, respectively), consistent with our prediction.

Web Appendix D (Essay 1). Table 1 Study 2 Follow-Up: Regression Results Predicting Perceived Benefit of Next Enrollment Opportunity

	Model 1	Model 2	Model 3
	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.346*** (.064)	-.345*** (.064)
Income	.0000003 (.00000061)		.0000002 (.00000060)
Constant	6.464*** (.032)	6.631*** (.044)	6.631*** (.044)
Number of Cases	865	865	865
R^2	.000	.033	.033
Adj. R^2	-.001	.032	.031
F	.211	29.358	14.708
df	1	1	2
p	.646	.0000001	.000001

Note. Significance values are indicated as follows: ˜$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. Income is mean-centered.

4.2.2 Timing of Next Enrollment Opportunity

We conducted a logistic regression analysis predicting likelihood that participant (correctly) indicates that they cannot enroll in the lottery until the next day (1 = correctly reported statement as true, 0 = incorrectly reported statement as false) as a function of timing relative to the

optimal deadline (1 = after, 0 = before), controlling for (mean-centered) income. Results show no effect of timing relative to the optimal deadline (b = -.140, SE = .226, t = -.62, p = .536; Web Appendix D Table 2, model 3). Participants in the after optimal deadline condition, who believed the optimal deadline had passed, did not differ from those who believed the optimal deadline had not passed (89.18% vs. 90.45%), suggesting that the manipulation did not differentially impact participants' understanding of when they could next enroll in the lottery.

Web Appendix D (Essay 1). Table 2 Study 2 Follow-Up: Logistic Regression Results Predicting Likelihood Correctly Indicating Timing of Next Enrollment Opportunity

	Model 1	Model 2	Model 3
	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.166 (.225)	-.140 (.226)
Income	.000006* (.000003)		.000006* (.000003)
Constant	2.216*** (.117)	2.261*** (.162)	2.285*** (.164)
Number of Cases	865	865	865
Wald χ^2	5.789	.542	6.173
p	.016	.462	.046
Log Likelihood	-281.584	-284.207	-281.392

Note. Significance values are indicated as follows: ˜p < .10, *p < .05, **p < .01, ***p < .001. Income is mean-centered.

4.2.3 Entries from Next Enrollment Opportunity

A logistic regression predicting likelihood of (correctly) indicating that 15 total entries is the greatest number possible (1 = correctly reported statement as true, 0 = incorrectly reported statement as false) as a function of timing relative to the optimal deadline (1 = after, 0 = before), controlling for (mean-centered) income, found no main effect of timing relative to the optimal deadline emerged (b = .023, SE = .192, t = .12, p = .905; Web Appendix D Table 3, model 3). Participants in the after optimal deadline condition did not differ from those in the before optimal deadline condition (85.47% vs. 85.18%), suggesting the manipulation did not differentially

impact participants' understanding of the objective outcome that could be gained from their next enrollment opportunity.

Web Appendix D (Essay 1). Table 3 Study 2 Follow-Up: Logistic Regression Results Predicting Likelihood of Correctly Indicating Largest Number of Entries Possible from Next Enrollment Opportunity

	Model 1	Model 2	Model 3
	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt		.025	.023
(1 = after optimal deadline, 0 = before optimal deadline)		(.192)	(.192)
Income	-.0000010		-.0000010
	(.000002)		(.000002)
Constant	1.760***	1.748***	1.749***
	(.096)	(.133)	(.133)
Number of Cases	865	865	865
Wald χ^2	.084	.016	.098
p	.773	.898	.952
Log Likelihood	-360.797	-360.831	-360.790

Note. Significance values are indicated as follows: ˜ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

4.3 Discussion

This follow-up study suggests the manipulation used in Study 2 for timing relative to the optimal deadline was effective in shifting subjective perceptions of benefit, without unintentionally impacting understanding of the next enrollment opportunity. Consistent with the predicted manipulation effect, results show that participants in the after optimal deadline condition (compared to those in the before optimal deadline condition) perceived the next opportunity to enroll in the lottery as significantly less beneficial, despite the opportunity being objectively equivalent (earning 15 total entries). In addition, this result does not seem to be due to systematic differences in participants' understanding of their next enrollment opportunity. Those in the before optimal deadline condition and those in the after optimal deadline condition did not differ in their understanding of when they could next enroll in the lottery nor of the objective outcome that could be gained from their next enrollment opportunity.

5.0 Web Appendix E (Essay 1). Study 3 Email Stimuli

5.1 Email 1

All Conditions

Subject Line: It's 10/1: FAFSA can be completed now!

Today's the day – you can complete your FAFSA NOW!

Starting today, you can complete your Free Application for Federal Student Aid (FAFSA)! By filing the FAFSA, you will learn how much financial aid you may be eligible to receive.

Some funding is limited and distributed on a first-come, first-served basis. Consequently, **[UNIVERSITY] strongly recommends that you submit the FAFSA by Sunday, October 21, 2018** to ensure that you do not miss out on available aid.

Critical Deadlines:

10/1/18	First day you can file the FAFSA
10/21/18	**Last day you can meet [UNIVERSITY]'s "earliest bird" FAFSA filing recommendation**
3/1/19	Last day you can file the FAFSA for full financial aid
6/30/19	Last day you can file the FAFSA

Step 1: Click to get your FSA ID. You'll need this to start the FAFSA.

Step 2: Collect this list of materials – you'll need them along the way. (SIMPLIFIED! You may be able to instantly upload tax return information into your FAFSA using the IRS Data Retrieval Tool!)

Step 3: **File your FAFSA by (Sunday) 10/21!**

START YOUR FAFSA TODAY by clicking here.

And when you have questions, [UNIVERSITY] is always here to help. Contact us to speak with a financial aid advisor: [EMAIL CONTACT] or [PHONE CONTACT].

5.2 Email 2

Before Optimal Deadline & Planning Prompt Condition

Subject Line: Haven't filed FAFSA? You HAVEN'T missed the "earliest bird" window. Plan to file ASAP!

You Haven't Missed the Early Bird Submission Window!
Make a Plan to File FAFSA ASAP!

You haven't missed [UNIVERSITY]'s "Earliest Bird" FAFSA filing recommendation of 10/21; so submit soon and you'll still be earlier than most!

If you made a plan to start FAFSA today, stick with it!
If you can't start today, then schedule a day when you will.

A year from now, you'll be thinking about classes and a new academic year – you'll also want to be confident you can pay your tuition bills. **Planning ahead can help.**

REMEMBER: Some funding is limited and distributed on a first-come, first-served basis. So start your FAFSA early! Although [UNIVERSITY] **recommends submitting FAFSA by October 21st (in 4 days)**, submitting as soon as possible still can help ensure that you do not miss out on available aid.

Make a plan now to start your FAFSA right away!
Write it in your calendar, put a reminder in your phone, or set an alarm.

Before Optimal Deadline & Control Condition

Subject Line: Haven't filed FAFSA? You HAVEN'T missed the "earliest bird" window.

You Haven't Missed the Early Bird Submission Window!
File FAFSA ASAP!

You haven't missed [UNIVERSITY]'s "Earliest Bird" FAFSA filing recommendation of 10/21; so submit soon and you'll still be earlier than most!

A year from now, you'll be thinking about classes and a new academic year – you'll also want to be confident you can pay your tuition bills.

REMEMBER: Some funding is limited and distributed on a first-come, first-served basis. So start your FAFSA early! Although [UNIVERSITY] **recommends submitting FAFSA by October 21st (in 4 days)**, submitting as soon as possible still can help ensure that you do not miss out on available aid.

Start your FAFSA right away!

Critical Deadlines:

~~10/1/18~~	~~First day you can file the FAFSA~~
10/21/18	**Last day you can meet [UNIVERSITY]'s "earliest bird" FAFSA filing recommendation**
3/1/19	Last day you can file the FAFSA for full financial aid
6/30/19	Last day you can file the FAFSA

- ✓ If you haven't already, Click to get your FSA ID. You'll need this to start the FAFSA.
- ✓ Collect these things so you're ready. (SIMPLIFIED! You may be able to instantly upload tax return information into your FAFSA using the IRS Data Retrieval Tool!)
- ✓ **Put a reminder in your phone or on your calendar right now to file your FAFSA by (Sunday) 10/21!**

START YOUR FAFSA TODAY by clicking here. Plan to get started soon.

And when you have questions, [UNIVERSITY] is always here to help. Contact us to speak with a financial aid advisor: [EMAIL CONTACT] or [PHONE CONTACT].

[WEBSITE] • [STREET ADDRESS] • [CITY, STATE ZIP] • Contact Us

Unsubscribe • Manage Preferences

Critical Deadlines:

~~10/1/18~~	~~First day you can file the FAFSA~~
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[WEBSITE] • [STREET ADDRESS] • [CITY, STATE ZIP] • Contact Us

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After Optimal Deadline & Planning Prompt Condition

Subject Line: Haven't filed FAFSA? You JUST missed the "earliest bird" window. Plan to file ASAP!

You *Just* Missed the Early Bird Submission Window!
Make a Plan to File FAFSA ASAP!

You *just* missed [UNIVERSITY]'s "Earliest Bird" FAFSA filing recommendation of 10/21; but submit soon and you'll still be earlier than most!

If you made a plan to start FAFSA today, stick with it!
If you can't start today, then schedule a day when you will.

A year from now, you'll be thinking about classes and a new academic year – you'll also want to be confident you can pay your tuition bills. **Planning ahead can help.**

REMEMBER: Some funding is limited and distributed on a first-come, first-served basis. So start your FAFSA early! Although [UNIVERSITY] **recommends submitting FAFSA by October 21st (3 days ago)**, submitting as soon as possible still can help ensure that you do not miss out on available aid.

Make a plan now to start your FAFSA right away!
Write it in your calendar, put a reminder in your phone, or set an alarm.

After Optimal Deadline & Control Condition

Subject Line: Haven't filed FAFSA? You JUST missed the "earliest bird" window.

You *Just* Missed the Early Bird Submission Window!
File FAFSA ASAP!

You *just* missed [UNIVERSITY]'s "Earliest Bird" FAFSA filing recommendation of 10/21; but submit soon and you'll still be earlier than most!

A year from now, you'll be thinking about classes and a new academic year – you'll also want to be confident you can pay your tuition bills.

REMEMBER: Some funding is limited and distributed on a first-come, first-served basis. So start your FAFSA early! Although [UNIVERSITY] **recommends submitting FAFSA by October 21st (3 days ago)**, submitting as soon as possible still can help ensure that you do not miss out on available aid.

Start your FAFSA right away!

Critical Deadlines:

~~10/1/18~~	~~First day you can file the FAFSA~~
~~**10/21/18**~~	~~**Last day you can meet [UNIVERSITY]'s "earliest bird" FAFSA filing recommendation**~~
3/1/19	Last day you can file the FAFSA for full financial aid
6/30/19	Last day you can file the FAFSA

- ✓ If you haven't already, Click to get your FSA ID. You'll need this to start the FAFSA.
- ✓ Collect these things so you're ready. (SIMPLIFIED! You may be able to instantly upload tax return information into your FAFSA using the IRS Data Retrieval Tool!)
- ✓ **Put a reminder in your phone or on your calendar right now to file your FAFSA as soon as possible!**

START YOUR FAFSA TODAY by clicking here. Plan to get started soon.

And when you have questions, [UNIVERSITY] is always here to help. Contact us to speak with a financial aid advisor: [EMAIL CONTACT] or [PHONE CONTACT].

[WEBSITE] • [STREET ADDRESS] • [CITY, STATE ZIP] • Contact Us

Unsubscribe • Manage Preferences

Critical Deadlines:

~~10/1/18~~	~~First day you can file the FAFSA~~
~~**10/21/18**~~	~~**Last day you can meet [UNIVERSITY]'s "earliest bird" FAFSA filing recommendation**~~
3/1/19	Last day you can file the FAFSA for full financial aid
6/30/19	Last day you can file the FAFSA

- If you haven't already, Click to get your FSA ID. You'll need this to start the FAFSA.
- Collect these things so you're ready. (SIMPLIFIED! You may be able to instantly upload tax return information into your FAFSA using the IRS Data Retrieval Tool!)
- **File your FAFSA as soon as possible!**

START YOUR FAFSA TODAY by clicking here.

And when you have questions, [UNIVERSITY] is always here to help. Contact us to speak with a financial aid advisor: [EMAIL CONTACT] or [PHONE CONTACT].

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6.0 Web Appendix F (Essay 1). Study 3 Survival Analysis Results

Web Appendix F (Essay 1). Table 1 Study 3: Covariate Details

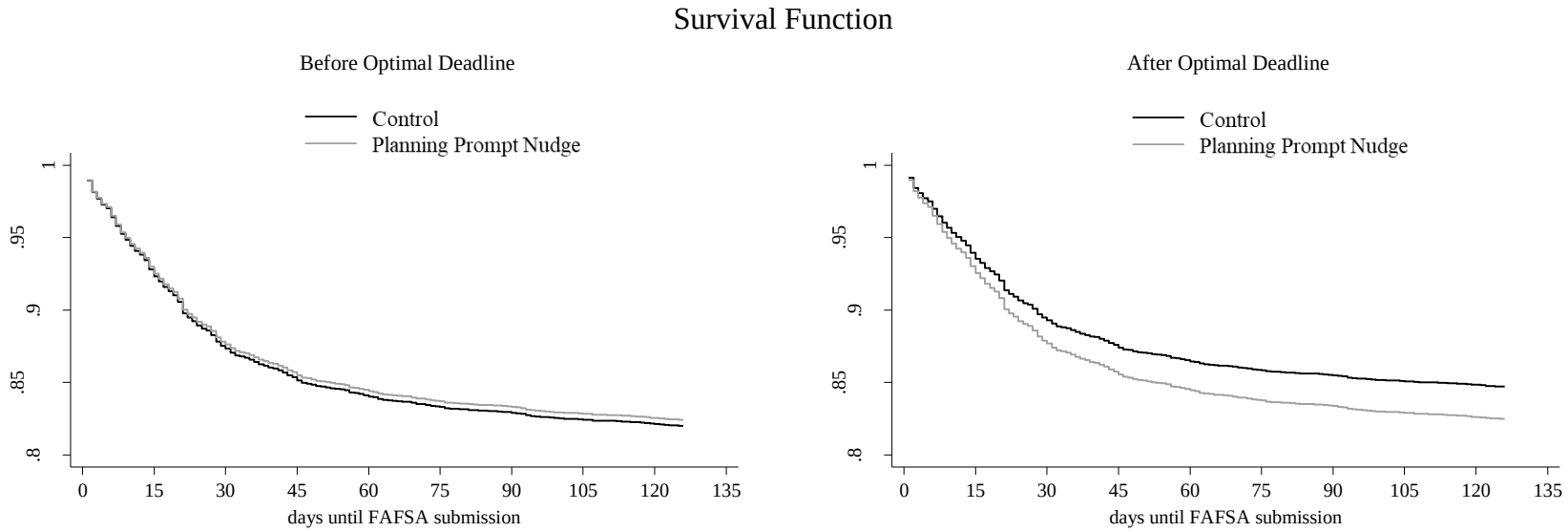
	Before Optimal Deadline		After Optimal Deadline	
	Control	Planning Prompt	Control	Planning Prompt
	% or M	% or M	% or M	% or M
Gender (1 = female, 0 = not female)	58.69%	58.56%	60.07%	60.51%
In-State Status (1 = in-state, 0 = not in-state)	30.65%	30.47%	30.33%	28.88%
GPA	3.737	3.742	3.728	3.745
Income	$78,352.87	$79,321.26	$79,244.66	$79,028.32
Gender Missing (1 = missing, 0 = not missing)	13.34%	14.86%	14.9%	13.64%
In-State Status Missing (1 = missing, 0 = not missing)	1.03%	1.18%	.91%	.68%
GPA Missing (1 = missing, 0 = not missing)	60.48%	59.05%	64.01%	61.71%
Income Missing (1 = missing, 0 = not missing)	4.59%	5.45%	4.74%	4.19%

Note. Missing cases were excluded when summarizing gender, in-state status, GPA, and income.

Web Appendix F (Essay 1). Table 2 Study 3: Survival Analysis (Cox Proportional Hazard)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.175*	.187*
				(.086)	(.086)
Message Framing (1 = planning prompt, 0 = control)		.056	.020	-.026	-.068
		(.043)	(.043)	(.059)	(.059)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.089*	-.016	-.179**	-.112~
		(.043)	(.043)	(.062)	(.061)
In-State Status (1 = in-state, 0 = not in-state	.468***		.468***		.470***
	(.048)		(.048)		(.048)
Gender (1 = female, 0 = not female)	-.021		-.021		-.023
	(.045)		(.045)		(.045)
GPA	1.169***		1.169***		1.169***
	(.092)		(.092)		(.092)
Income	.00000271***		.00000271***		.00000273***
	(.00000066)		(.00000066)		(.00000066)
In-State Status Missing (1 = missing, 0 = not missing)	-2.541***		-2.544***		-2.535***
	(.729)		(.728)		(.729)
Gender Missing (1 = missing, 0 = not missing)	-.224*		-.224*		-.226*
	(.093)		(.093)		(.093)
GPA Missing (1 = missing, 0 = not missing)	1.828***		1.828***		1.829***
	(.358)		(.358)		(.358)
Income Missing (1 = missing, 0 = not missing)	.875***		.875***		.878***
	(.103)		(.103)		(.103)
Number of Cases	12592	12592	12592	12592	12592
Wald χ^2	2280.936	6.215	2284.527	9.894	2287.234
p	< .0001	.0447	< .0001	.0195	< .0001
Log Likelihood	-18525.956	-20150.322	-18525.782	-20148.271	-18523.442

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.



Note. Event is FAFSA submission, meaning survival indicates non-filing; thus, lower survival estimate indicates greater submission likelihood. Days after October 1, the first opportunity students could submit the FAFSA; n = 12,592.

Web Appendix F (Essay 1). Figure 1 Study 3: Survival Analysis

7.0 Web Appendix G (Essay 1). Study 3 Week-by-Week Analysis

Web Appendix G (Essay 1). Table 1 Study 3: Logistic Regression Results Predicting Likelihood of Submitting FAFSA (Cumulatively by Week)

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing	.190	.121	.130	.132	.186	.246*
	(.189)	(.149)	(.131)	(.123)	(.119)	(.117)
Message Framing (1 = planning prompt, 0 = control)	-.005	-.016	-.017	.009	-.021	-.075
	(.127)	(.101)	(.087)	(.084)	(.081)	(.080)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)	-.167	-.142	-.241*	-.141	-.153~	-.185*
	(.137)	(.108)	(.094)	(.089)	(.086)	(.084)
In-State Status (1 = in-state, 0 = not in-state	.245*	.355***	.402***	.435***	.410***	.473***
	(.101)	(.080)	(.070)	(.066)	(.064)	(.063)
Gender (1 = female, 0 = not female)	-.097	-.046	-.007	.016	-.008	-.001
	(.099)	(.079)	(.069)	(.065)	(.063)	(.062)
GPA	.992***	1.218***	1.293***	1.328***	1.379***	1.395***
	(.186)	(.151)	(.131)	(.122)	(.117)	(.115)
Income	.00000198	.00000169	.00000311**	.00000260**	.00000257**	.00000283**
	(.00000151)	(.00000121)	(.00000104)	(.00000099)	(.00000096)	(.00000094)
In-State Status Missing (1 = missing, 0 = not missing)	-1.554	-2.233*	-1.985**	-2.282**	-2.445***	-2.524***
	(1.023)	(1.019)	(.732)	(.732)	(.732)	(.732)
Gender Missing (1 = missing, 0 = not missing)	-.095	-.170	-.246~	-.270*	-.253*	-.286*
	(.186)	(.152)	(.134)	(.126)	(.121)	(.119)
GPA Missing (1 = missing, 0 = not missing)	1.310~	2.065***	2.314***	2.370***	2.497***	2.517***
	(.721)	(.586)	(.507)	(.471)	(.455)	(.444)
Income Missing (1 = missing, 0 = not missing)	.532*	.699***	.890***	.976***	.993***	1.046***
	(.229)	(.180)	(.158)	(.149)	(.145)	(.143)
Constant	-6.120***	-6.432***	-6.287***	-6.267***	-6.287***	-6.257***
	(.711)	(.578)	(.501)	(.466)	(.450)	(.439)
N	12592	12592	12592	12592	12592	12592
Wald χ^2	596.673	1123.344	1658.65	2039.709	2298.32	2511.133
p	< .0001	< .0001	< .0001	< .0001	< .0001	< .0001
Log Likelihood	-1804.707	-2568.564	-3181.767	-3487.615	-3658.952	-3748.661

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

Web Appendix G (Essay 1). Table 1 (Continued)

	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing	.265*	.264*	.275*	.320**	.286*	.284*
	(.115)	(.115)	(.114)	(.113)	(.113)	(.112)
Message Framing (1 = planning prompt, 0 = control)	-.095	-.093	-.088	-.116	-.105	-.105
	(.079)	(.079)	(.078)	(.078)	(.077)	(.077)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)	-.203*	-.168*	-.168*	-.193*	-.168*	-.163*
	(.083)	(.082)	(.082)	(.081)	(.081)	(.081)
In-State Status (1 = in-state, 0 = not in-state	.513***	.518***	.552***	.557***	.573***	.593***
	(.062)	(.061)	(.061)	(.060)	(.060)	(.060)
Gender (1 = female, 0 = not female)	-.003	-.002	-.017	-.034	-.046	-.042
	(.061)	(.061)	(.060)	(.060)	(.060)	(.060)
GPA	1.389***	1.436***	1.402***	1.382***	1.393***	1.407***
	(.112)	(.111)	(.110)	(.108)	(.108)	(.108)
Income	.00000332***	.00000330***	.00000372***	.00000366***	.00000361***	.00000368***
	(.00000092)	(.00000092)	(.00000091)	(.00000090)	(.00000090)	(.00000090)
In-State Status Missing (1 = missing, 0 = not missing)	-2.679***	-2.735***	-2.785***	-2.808***	-2.840***	-2.839***
	(.732)	(.732)	(.732)	(.732)	(.732)	(.732)
Gender Missing (1 = missing, 0 = not missing)	-.281*	-.293*	-.323**	-.315**	-.318**	-.320**
	(.116)	(.116)	(.114)	(.113)	(.112)	(.112)
GPA Missing (1 = missing, 0 = not missing)	2.508***	2.633***	2.513***	2.424***	2.449***	2.508***
	(.433)	(.430)	(.423)	(.418)	(.416)	(.416)
Income Missing (1 = missing, 0 = not missing)	1.176***	1.202***	1.257***	1.245***	1.251***	1.252***
	(.141)	(.140)	(.139)	(.139)	(.138)	(.138)
Constant	-6.155***	-6.298***	-6.139***	-6.009***	-6.028***	-6.083***
	(.428)	(.426)	(.419)	(.414)	(.412)	(.411)
N	12592	12592	12592	12592	12592	12592
Wald χ^2	2676.757	2817.135	2908.394	2962.281	3039.314	3072.571
p	< .0001	< .0001	< .0001	< .0001	< .0001	< .0001
Log Likelihood	-3868.876	-3895.415	-3953.15	-3985.484	-4010.494	-4023.657

Note. Significance values are indicated as follows: ˜ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

Web Appendix G (Essay 1). Table 1 (Continued)

	Week 31	Week 14	Week 15	Week 16	Week 17	Week 18
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing	.260*	.267*	.260*	.250*	.246*	.240*
	(.112)	(.112)	(.112)	(.111)	(.111)	(.111)
Message Framing (1 = planning prompt, 0 = control)	-.108	-.111	-.105	-.099	-.105	-.093
	(.077)	(.077)	(.077)	(.077)	(.077)	(.076)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)	-.143~	-.145~	-.146~	-.145~	-.139~	-.144~
	(.080)	(.080)	(.080)	(.080)	(.080)	(.080)
In-State Status (1 = in-state, 0 = not in-state	.607***	.628***	.643***	.649***	.670***	.679***
	(.060)	(.060)	(.059)	(.059)	(.059)	(.059)
Gender (1 = female, 0 = not female)	-.042	-.039	-.029	-.025	-.039	-.042
	(.060)	(.059)	(.059)	(.059)	(.059)	(.059)
GPA	1.411***	1.417***	1.400***	1.415***	1.448***	1.455***
	(.107)	(.107)	(.106)	(.106)	(.107)	(.106)
Income	.00000372***	.00000384***	.00000370***	.00000379***	.00000373***	.00000374***
	(.00000090)	(.00000089)	(.00000089)	(.00000089)	(.00000089)	(.00000089)
In-State Status Missing (1 = missing, 0 = not missing)	-2.839***	-2.848***	-2.848***	-2.848***	-2.858***	-2.859***
	(.732)	(.732)	(.732)	(.732)	(.732)	(.732)
Gender Missing (1 = missing, 0 = not missing)	-.312**	-.321**	-.321**	-.327**	-.339**	-.348**
	(.112)	(.111)	(.111)	(.111)	(.111)	(.111)
GPA Missing (1 = missing, 0 = not missing)	2.502***	2.529***	2.475***	2.523***	2.638***	2.674***
	(.414)	(.412)	(.410)	(.410)	(.410)	(.410)
Income Missing (1 = missing, 0 = not missing)	1.242***	1.244***	1.225***	1.224***	1.225***	1.216***
	(.138)	(.138)	(.138)	(.138)	(.138)	(.137)
Constant	-6.084***	-6.089***	-6.025***	-6.078***	-6.185***	-6.200***
	(.410)	(.408)	(.406)	(.406)	(.406)	(.406)
N	12592	12592	12592	12592	12592	12592
Wald χ^2	3124.622	3184.855	3198.197	3234.963	3294.572	3311.905
p	< .0001	< .0001	< .0001	< .0001	< .0001	< .0001
Log Likelihood	-4032.148	-4062.224	-4081.337	-4083.797	-4087.458	-4107.278

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

8.0 Web Appendix H (Essay 1). Study 3 Binary Logistic Regression Results

Web Appendix H (Essay 1). Table 1 Study 3: Logistic Regression Results Predicting Likelihood of Submitting FAFSA

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				.192*	.240*
				(.095)	(.111)
Message Framing (1 = planning prompt, 0 = control)		.060	.020	-.030	-.093
		(.047)	(.055)	(.065)	(.076)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		-.095*	-.021	-.193**	-.144~
		(.047)	(.056)	(.068)	(.080)
In-State Status (1 = in-state, 0 = not in-state	.676***		.677***		.679***
	(.059)		(.059)		(.059)
Gender (1 = female, 0 = not female)	-.040		-.040		-.042
	(.059)		(.059)		(.059)
GPA	1.454***		1.454***		1.455***
	(.106)		(.106)		(.106)
Income	.00000371***		.00000371***		.00000374***
	(.00000089)		(.00000089)		(.00000089)
In-State Status Missing (1 = missing, 0 = not missing)	-2.864***		-2.868***		-2.859***
	(.732)		(.732)		(.732)
Gender Missing (1 = missing, 0 = not missing)	-.348**		-.349**		-.348**
	(.110)		(.110)		(.111)
GPA Missing (1 = missing, 0 = not missing)	2.671***		2.671***		2.674***
	(.409)		(.409)		(.410)
Income Missing (1 = missing, 0 = not missing)	1.209***		1.209***		1.216***
	(.137)		(.137)		(.137)
Constant	-6.254***	-1.563***	-6.254***	-1.517***	-6.200***
	(.403)	(.041)	(.405)	(.046)	(.406)
N	12592	12592	12592	12592	12592
Wald χ^2	3306.948	5.63	3307.222	9.74	3311.905
p	< .0001	.0599	< .0001	.0209	< .0001
Log Likelihood	-4109.757	-5760.416	-4109.62	-5758.361	-4107.278

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

Web Appendix H (Essay 1). Table 2 Study 3: Logistic Regression Results Predicting Likelihood of Opening Email 2

	Model 1	Model 2	Model 3	Model 4	Model 5
	b/(SE)	b/(SE)	b/(SE)	b/(SE)	b/(SE)
Timing of Prompt x Message Framing				-.094	-.097
				(.072)	(.074)
Message Framing (1 = planning prompt, 0 = control)		-.041	-.058	.005	-.010
		(.036)	(.037)	(.050)	(.051)
Timing of Prompt (1 = after optimal deadline, 0 = before optimal deadline)		.101**	.126***	.148**	.174***
		(.036)	(.037)	(.051)	(.052)
In-State Status (1 = in-state, 0 = not in-state)	.073~		.072~		.072~
	(.043)		(.043)		(.043)
Gender (1 = female, 0 = not female)	-.055		-.057		-.057
	(.041)		(.041)		(.041)
GPA	.472***		.476***		.476***
	(.090)		(.090)		(.090)
Income	.00000386***		.00000385***		.00000385***
	(.00000058)		(.00000058)		(.00000058)
In-State Status Missing (1 = missing, 0 = not missing)	-.555**		-.547**		-.548**
	(.202)		(.202)		(.202)
Gender Missing (1 = missing, 0 = not missing)	-.048		-.048		-.049
	(.058)		(.058)		(.058)
GPA Missing (1 = missing, 0 = not missing)	1.109***		1.116***		1.117***
	(.336)		(.337)		(.337)
Income Missing (1 = missing, 0 = not missing)	.617***		.619***		.616***
	(.110)		(.110)		(.110)
Constant	-1.008**	.322***	-1.049**	.299***	-1.073**
	(.335)	(.031)	(.336)	(.036)	(.337)
Number of Cases	12592	12592	12592	12592	12592
Wald χ^2	434.997	8.993	449.051	10.667	450.792
p	< .0001	.0111	< .0001	.0137	< .0001
Log Likelihood	-8320.25	-8533.251	-8313.222	-8532.414	-8312.352

Note. Significance values are indicated as follows: ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$. Income is mean-centered.

9.0 Web Appendix I (Essay 2). Study 1 Survey and Stimuli

On the next page you will read a brief scenario about a consumer experience and will then be asked questions about that experience.

Read carefully so you can answer specific questions about the scenario later.

Please try to imagine the scenario as vividly and realistically as possible.

----Next Page----

Imagine that you've decided to make an online donation to charity.

Specifically, you've decided to donate to the American Society for the Prevention of Cruelty to Animals (ASPCA).

----Next Page----

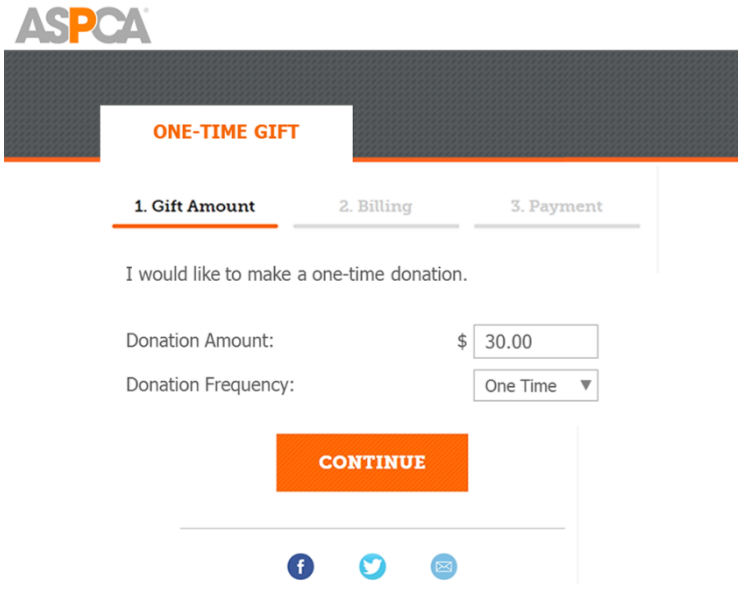
[CONDITION: One-Time Donation Condition]

You go online to the ASPCA's website to make your donation.

You opt to make a one-time donation of $30 today.

That means that one transaction occurs today (i.e., $30 payment today).

This is done automatically (so you won't need to do anything after the current transaction is complete).



----Next Page----

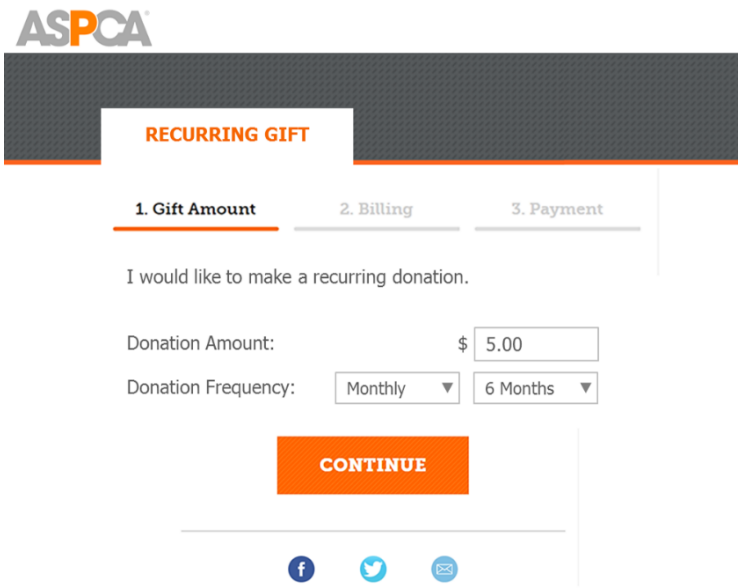
[CONDITION: Recurring Donation Condition]

You go online to the ASPCA's website to make your donation.

You opt to make a recurring monthly donation of $5 for six months, starting today.

That means that one transaction occurs today (i.e., $5 payment today), and then again in one month, two months, three months, four months, and five months (i.e., making a $5 payment six times).

This is done automatically (so you won't need to do anything after the current transaction is complete).



----Next Page----

The website asks you to confirm your donation before making a payment. Please select the correct donation amount and frequency below.

I AM DONATING....

Donation Amount:

▼ $5, $10, $15, $20, $25, $30

Frequency:

▼ One Time, Monthly for 3 months, Monthly for 6 months, Monthly for 9 months, Monthly for 12 months, Yearly

----Next Page----

Imagine that **six months from now** (May 2019), you are asked to make an additional donation to the ASPCA.

How likely are you make a donation?

Not at All Likely						Very Likely
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the next item is randomized.]

----Next Page----

Imagine that **six months from now** (December 2016), you are asked to make an additional donation to the ASPCA.

How much would you donate? (US $)
(Don't include the "$" symbol)

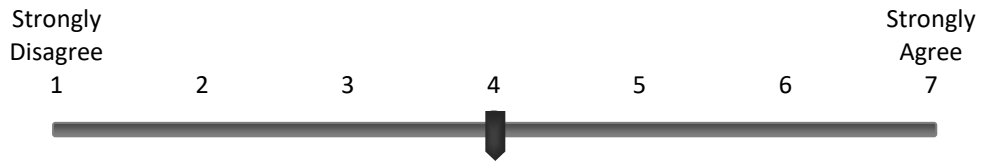
_____

[Note for Researcher: Presentation order of this item and the previous item is randomized.]

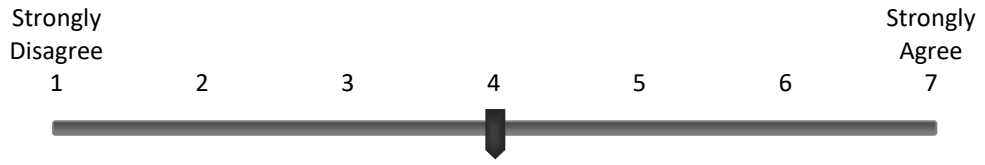
----Next Page----

Please indicate how much you agree with the following statements.

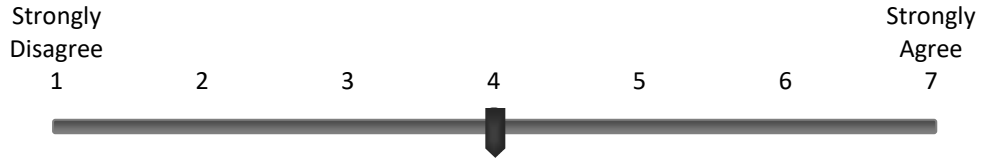
The ASPCA supports a good cause.



The ASPCA is a good charity.



The ASPCA makes a difference.



[Note for Researcher: Order of above three items is randomized.]

----Next Page----

Did you experience any technical difficulties while completing today's study?

- o Yes
- o No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- o Male
- o Female

What is your age?

_____

What is your race or ethnicity?

▼ White/Caucasian, Black or African American, Hispanic, Asian, Other, Two or more races

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

9.1 Follow-Up Study 1A Survey and Stimuli

On the next page you will read a brief scenario about a consumer experience and will then be asked questions about that experience.

Read carefully so you can answer specific questions about the scenario later.

Please try to imagine the scenario as <u>vividly</u> and <u>realistically</u> as possible.

----Next Page----

Imagine that you've decided to make an online donation to charity.

Specifically, you've decided to donate to the American Society for the Prevention of Cruelty to Animals (ASPCA).

----Next Page----

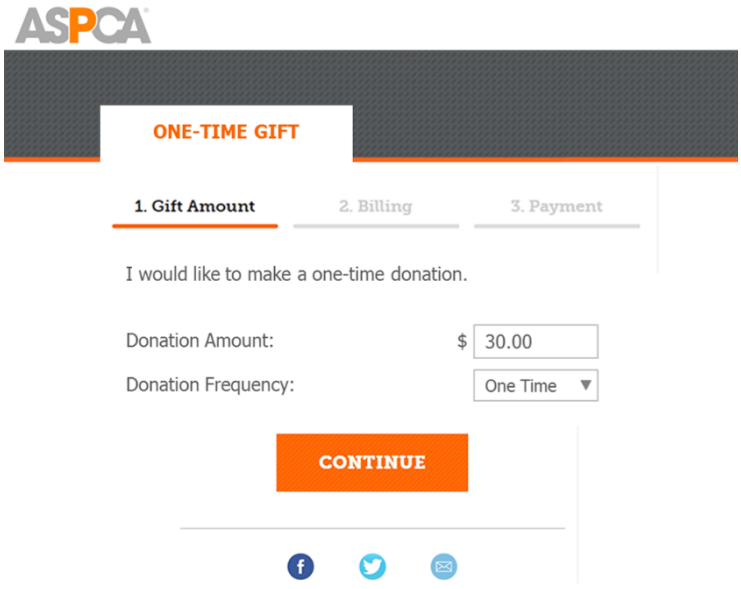
[CONDITION: One-Time Donation Condition]

You go online to the ASPCA's website to make your donation.

You opt to make a one-time donation of $30 today.

That means that one transaction occurs today (i.e., $30 payment today).

This is done automatically (so you won't need to do anything after the current transaction is complete).



----Next Page----

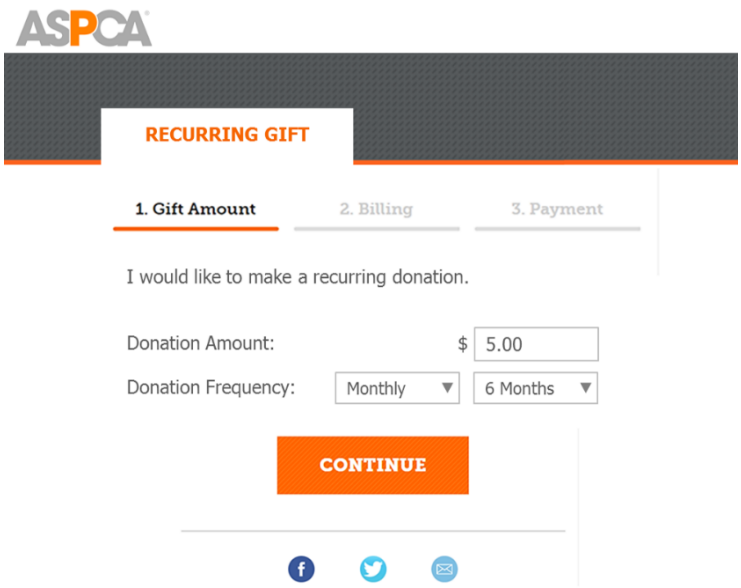
[CONDITION: Recurring Donation Condition]

You go online to the ASPCA's website to make your donation.

You opt to make a recurring monthly donation of $5 for six months, starting today.

That means that one transaction occurs today (i.e., $5 payment today), and then again in one month, two months, three months, four months, and five months (i.e., making a $5 payment six times).

This is done automatically (so you won't need to do anything after the current transaction is complete).



----Next Page----

The website asks you to confirm your donation before making a payment. Please select the correct donation amount and frequency below.

I AM DONATING....

Donation Amount:

▼ $5, $10, $15, $20, $25, $30

Frequency:

▼ One Time, Monthly for 3 months, Monthly for 6 months, Monthly for 9 months, Monthly for 12 months, Yearly

----Next Page----

Imagine that **six months after your initial donation,** you are asked to make an additional donation to the ASPCA (the same charity).

You made a $5 donation.

Which of the following best represents how you interpreted the above statement:
"You made a $5 donation"?

- This means I made a **one-time** donation of $5 (i.e., only at the time of the request).
- This means I made a **repeating** donation of $5 (e.g., monthly for 6 months).

----Next Page----

Please indicate how much you agree with the following statements.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
The ASPCA supports a good cause.	○	○	○	○	○	○	○
The ASPCA is a good charity.	○	○	○	○	○	○	○
The ASPCA makes a difference.	○	○	○	○	○	○	○

[Note for Researcher: Item order is randomized.]

----Next Page----

Did you experience any technical difficulties while completing today's study?

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female

What is your age?

_____

What is your race or ethnicity?

▼ White/Caucasian, Black or African American, Hispanic, Asian, Other, Two or more races

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

9.2 Follow-Up Study 1B Survey and Stimuli

Imagine that six business days ago you accepted an MTurk HIT that paid $10.

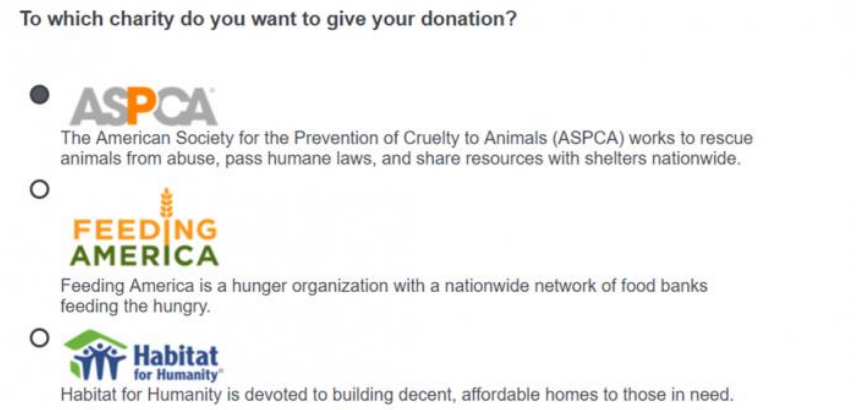
At the end of the HIT, before submitting, you were given the option to donate a portion of your HIT earnings to charity.

You chose to donate $5.

----Next Page----

Afterwards, you chose the charity to which to give your donation.

Below is a screenshot of your charity choice.
Imagine choosing this charity.



----Next Page----

After choosing your charity, you then learned the specifics of how your donation would be made.

Below is a screenshot of the information you read.

[CONDITION: Recurring Donation Condition]

ASPCA

Your Donation:
A donation of $1 will be made every day for the next five business days, starting today.

Your donation will be made automatically (so you won't need to do anything!).

[CONDITION: One-Time Donation Condition]

Your Donation:
A donation of $5 will be made today.

Your donation will be made automatically (so you won't need to do anything!).

----Next Page----

You were asked to confirm your donation.

Below is a screenshot of the confirmation request.

[CONDITION: Recurring Donation Condition]

Donation Approval

To comply with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $1 every day for the next five business days, starting today.**

[CONDITION: One-Time Donation Condition]

Donation Approval

To comply with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $5 today.**

----Next Page----

Afterwards, the following thank you message was displayed:

Thank You

Your charitable gift is much appreciated!!!

----Next Page----

Imagine that as of today, six business days have passed since you completed that initial HIT.

----Next Page----

Imagine that today you received an email through your MTurk account saying that you qualify for a follow-up MTurk HIT.

You accept the HIT and start to complete it.

----Next Page----

On the next few pages, you will imagine completing the follow-up HIT survey. Answer all survey questions as if you were actually in the scenario taking the HIT survey.

Imagine taking the follow-up survey as vividly as possible.

----Next Page----

[CONDITION: Recurring Donation Condition]

After completing the "Consumer Scenario" HIT last week, you made a donation of $1 every day for five business days to the ASPCA. That is, you made your last donation yesterday.

This is a brief follow-up to that original study.

[CONDITION: One-Time Donation Condition]

After completing the "Consumer Scenario" HIT last week, you made a donation of $5 to the ASPCA on the day you completed the HIT. That is, you made your donation 6 days ago.

This is a brief follow-up to that original study.

----Next Page----

Imagine that the text below is displayed on the next page of the HIT survey.

We'd like to ask you a few questions about your donation.

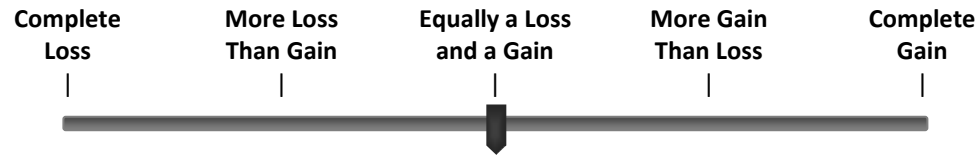
----Next Page----

Imagine that the question below is on the next page of the follow-up survey.

People tend to think about experiences in terms of "losses" and "gains." Losses and gains can be related to money, emotions, or time.

Sometimes things feel like a loss and a gain at the same time.

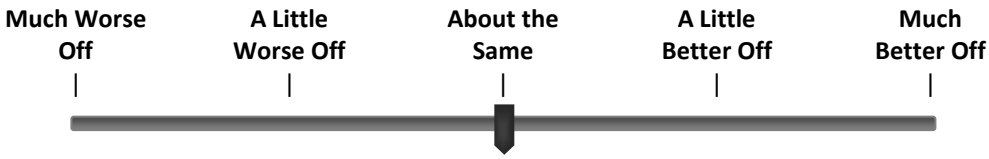
Right now, in this exact moment, to what extent does your donation to the ASPCA feel like a "loss" versus like a "gain"?



----Next Page----

Imagine that the question below is on the next page of the follow-up survey.

Right now, having made my donation, I feel _____ than if I had not made my donation.



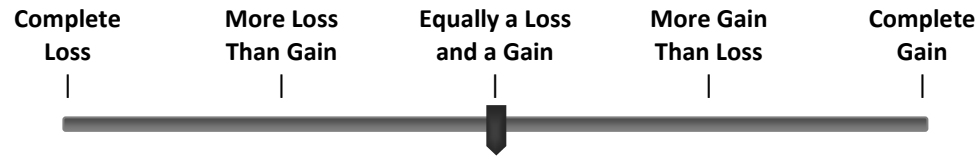
----Next Page----

Imagine that the question below is on the next page of the follow-up survey.

People tend to think about experiences in terms of "losses" and "gains." Losses and gains can be related to money, emotions, or time.

Sometimes things feel like a loss and a gain at the same time.

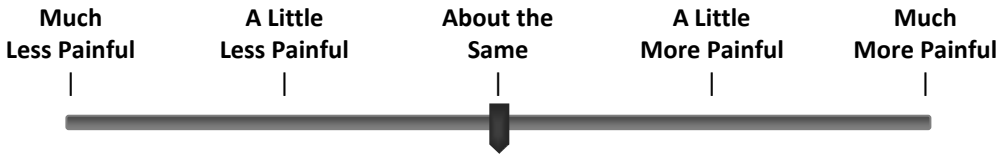
If you made an additional donation of the same amount to the ASPCA right now, to what extent would that donation feel like a "loss" versus like a "gain"?



----Next Page----

Imagine that the question below is on the next page of the follow-up survey.

If you made an additional donation of the same amount to the ASPCA right now, how painful would it feel compared to your first donation?



[Note for Researcher: Item is reverse-coded prior to analysis.]

----Next Page----

Please indicate how much you agree with the following statements.

	Strongly Disagree 1	2	3	4	5	6	Strongly Agree 7
The ASPCA supports a good cause.	○	○	○	○	○	○	○
The ASPCA is a good charity.	○	○	○	○	○	○	○
The ASPCA makes a difference.	○	○	○	○	○	○	○

[Note for Researcher: Item order is randomized.]

----Next Page----

Did you experience any technical difficulties while completing today's study?

- ○ Yes
- ○ No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- ○ Male
- ○ Female

What is your age?

_____

What is your race or ethnicity?

▼ White/Caucasian, Black or African American, Hispanic, Asian, Other, Two or more races

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

10.0 Web Appendix J (Essay 2). Study 2 Survey and Stimuli for Time 1

As an extra thank you for participating, **we will be making a donation to charity on your behalf!**

You'll get to choose which of three charities receives your donation.

----Next Page----

[CONDITION: Recurring Donation (w/Notifications) Condition]
[CONDITION: Recurring Donation (w/out Notifications) Condition]

Your Donation:

A donation of $.10 will be made every other day for the next ten days (starting today).

Your donation will be made automatically (so you won't need to do anything!).

[CONDITION: One-Time Donation Condition]

Your Donation:

A donation of $.50 will be made today.

Your donation will be made automatically (so you won't need to do anything!).

----Next Page----

To which charity do you want to give your donation?

- ASPCA The American Society for the Prevention of Cruelty to Animals (ASPCA) works to rescue animals from abuse, pass humane laws, and share resources with shelters nationwide.
- FEEDING AMERICA Feeding America is a hunger organization with a nationwide network of food banks feeding the hungry.
- Habitat for Humanity Habitat for Humanity is devoted to building decent, affordable homes to those in need.

----Next Page----

[CONDITION: Recurring Donation (w/Notifications) Condition]

Donation Approval

In order for us to make the donation in a way that complies with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $.10 every other day for the next ten days (starting today).**

NOTE: Per our institution's guidelines, **we will send an email notification after each donation is made**. This email will not request anything of you, it is simply a notification of your donation.
This email will be sent through MTurk's system (and we will not email you for any other purpose).

[CONDITION: Recurring Donation (w/out Notifications) Condition]

Donation Approval

In order for us to make the donation in a way that complies with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $.10 every other day for the next ten days (starting today).**

[CONDITION: One-Time Donation Condition]

Donation Approval

In order for us to make the donation in a way that complies with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $.50 today.**

----Next Page----

Did you experience any technical difficulties while completing today's study?

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female

What is your age?

_____

What is your race or ethnicity?

▼ White/Caucasian, Black or African American, Hispanic, Asian, Other, Two or more races

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

11.0 Web Appendix K (Essay 2). Study 2 Survey and Stimuli for Time 2

10 days ago, you completed a consumer preferences survey. This is a brief follow-up to that original survey. It takes approximately 2 minutes to complete.

----Next Page----

[CONDITION: Recurring Donation (w/Notifications) Condition]
[CONDITION: Recurring Donation (w/out Notifications) Condition]
Recall that as a thank you for participating in that original survey, a donation of $.10 was made every other day for 10 days to one of three charities that you chose.

[CONDITION: One-Time Donation Condition]
Recall that as a thank you for participating in that original survey, a donation of $.50 was made on the day you participated to one of three charities that you chose.

----Next Page----

How happy do you feel about your donation?

Not at All Happy						Very Happy
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the following two items is randomized.]

----Next Page----

How much did you donate?
(0 = Very Little, 100 = Very Much)

Very Little										Very Much
0	10	20	30	40	50	60	70	80	90	100

----Next Page----

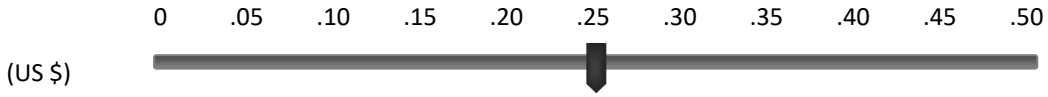
How committed are you to this charity?

Not at All Committed								Very Committed
1	2	3	4	5	6	7	8	9
○	○	○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the prior two items is randomized.]

----Next Page----

How much of your $.50 payment for this HIT would you be willing to donate to this charity?



----Next Page----

Thank you so much for participating!

12.0 Web Appendix L (Essay 2). Study 3 Survey and Stimuli for Time 1

Are you a generous MTurker?

We're giving MTurkers a special charitable opportunity!

Would you like to complete a 2 minute task for charity?

By completing this short task, you will be donating $.50 to one of three charities (that you choose!). The money won't come out of your payment--you make the donation by doing the short task!

The task involves grouping pictured products together (and most people enjoy it!).

- **Yes**, I want to help.
- **No**, I don't want to help.

----Next Page----

Thank you!!

The task you will be completing for charity involves grouping products together.

----Next Page----

[UNRELATED PRODUCT GROUPING TASK]

----Next Page----

You have finished the charity task! Thank you!
Click " >> " to choose your charity.

----Next Page----

To which charity do you want to give your donation?

- ASPCA The American Society for the Prevention of Cruelty to Animals (ASPCA) works to rescue animals from abuse, pass humane laws, and share resources with shelters nationwide.
- FEEDING AMERICA Feeding America is a hunger organization with a nationwide network of food banks feeding the hungry.
- Habitat for Humanity Habitat for Humanity is devoted to building decent, affordable homes to those in need.

----Next Page----

[CONDITION: Recurring Donation Condition]

[IMAGE OF CHOSEN CHARITY LOGO]

Your Donation:
A donation of $.10 will be made every other day for the next ten days (starting today).

Your donation will be made automatically (so you won't need to do anything!).

[CONDITION: One-Time Donation Condition]

[IMAGE OF CHOSEN CHARITY LOGO]

Your Donation:
A donation of $.50 will be made today.

Your donation will be made automatically (so you won't need to do anything!).

----Next Page----

[CONDITION: Recurring Donation Condition]

Donation Approval

To comply with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $.10 every other day for the next ten days (starting today).**

[CONDITION: One-Time Donation Condition]

Donation Approval

To comply with our institution's guidelines, we need you to approve the donation information below (click on the option).

- **I am donating $.50 today.**

----Next Page----

Did you experience any technical difficulties while completing today's study?

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female

What is your age?

_____

What is your race or ethnicity?

▼ White/Caucasian, Black or African American, Hispanic, Asian, Other, Two or more races

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

13.0 Web Appendix M (Essay 2). Study 3 Survey and Stimuli for Time 2

Ten days ago, you completed a study about a shopper making a microwave purchase.

This is a brief follow-up to that original study. It takes less than 2 minutes to complete and you earn a bonus of $.50.

----Next Page----

[CONDITION: Cumulative Reminder Condition]

To date, you've donated $.50 to [CHARITY].

How much of your payment for completing today's survey would you be willing to donate to [CHARITY]?

(this amount will be deducted from today's bonus payment)

(don't include the "$" symbol)

_____

[CONDITION: No Cumulative Reminder Condition]

How much of your payment for completing today's survey would you be willing to donate to ${e://Field/charity}?

(this amount will be deducted from today's bonus payment)

(don't include the "$" symbol)

_____

----Next Page----

On the previous page, you indicated you'd be willing to donate [XXXX] of your payment to [CHARITY].

This amount will be deducted from your bonus payment for this survey.

----Next Page----

Thank you so much for participating!

14.0 Web Appendix N (Essay 2). Study 4 Survey and Stimuli

What is your present religion, if any? Are you Protestant, Roman Catholic, Mormon, Orthodox such as Greek or Russian Orthodox, Jewish, Muslim, Buddhist, Hindu, atheist, agnostic, something else, or nothing in particular?

- Protestant
- Roman Catholic
- Mormon
- Orthodox (e.g., Greek or Russian Orthodox)
- Other Christian
- Jewish
- Muslim
- Buddhist
- Hindu
- Atheist
- Agnostic
- Something else
- Nothing in particular

[Note for Researcher: Those selecting "Atheist," "Agnostic," or "Nothing in Particular" did not continue.]

----Next Page----

Approximately how much do you give per month, on average, to your religious congregation (e.g., church, synagogue, or mosque)?

Average per month ($)

_____

[Note for Researcher: Those who put $0 did not continue.]

----Next Page----

[CONDITION: Recurring Donation Condition]
This means you've donated about **$XX** to your religious congregation **each week** over the past year.

[CONDITION: One-Time Donation Condition]
This means you've donated about **$XX** to your religious congregation **in total** over the last year.

[Note for Researcher: $ amount presented is calculated based on participant response to the prior item.]

----Next Page----

Now imagine you are attending a special congregation event.

At this event, a one-time offering is taken up, with any money donated going to support a specific upcoming congregation project.

----Next Page----

[CONDITION: Recurring Donation Condition]
Given that you've donated about $XX to your religious congregation each week over the past year.

[CONDITION: One-Time Donation Condition]
Given that you've donated about $XX to your religious congregation in total over the last year.

How much would you donate at the congregation event?
Additional One-Time Donation Amount ($)
_____

[Note for Researcher: $ amount presented is identical to that displayed in a previous item.]

----Next Page----

Please answer the following statements.

	Not at All True of Me	Somewhat True of Me	Moderately True of Me	Mostly True of Me	Totally True of Me
	1	2	3	4	5
I often read books and magazines about my faith.	○	○	○	○	○
I make financial contributions to my religious organization.	○	○	○	○	○
I spend time trying to grow in understanding of my faith.	○	○	○	○	○
Religion is especially important to me because it answers many questions about the meaning of life.	○	○	○	○	○
My religious beliefs lie behind my whole approach to life.	○	○	○	○	○
I enjoy spending time with others of my religious affiliation.	○	○	○	○	○
Religious beliefs influence all my dealings in life.	○	○	○	○	○
It is important to me to spend periods of time in private religious thought and reflection.	○	○	○	○	○
I enjoy working in the activities of my religious organization.	○	○	○	○	○
I keep well informed about my local religious groups and have some influence in its decisions.	○	○	○	○	○

----Next Page----

Did you experience any technical difficulties while completing today's studies?

(please answer honestly, this will not impact your payment)

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female
- Other

What is your age?

_____

What is your race or ethnicity?

▼ White/Caucasian, Black or African American, Hispanic, Asian, Other, Two or more races

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

15.0 Web Appendix O (Essay 2). Study 5A Survey and Stimuli for Time 1

This HIT pays a higher-than-average rate because it contains two parts: the first part is completed today, and the second part is completed in a few weeks. It is important that participants complete BOTH parts.

Payment will be dispersed as a $.25 base pay + $1.00 bonus (totaling $1.25) for Part 1. You will earn and ADDITIONAL bonus of $1.00 by completing Part 2 in 2-4 weeks.

Only participants who complete all of Part 1 and all of Part 2 will be compensated the full $2.25.

----Next Page----

Please indicate your willingness to complete a brief (<1 min.) follow-up survey in 2-4 weeks.

- Yes, I am willing to complete the brief follow-up survey
- No, I am not willing to complete the brief follow-up survey

[Note for Researcher: Those selecting "No" did not continue.]

----Next Page----

Are you a generous MTurker?

For the next ten days, we're giving MTurkers a special charitable opportunity!

Will you make a donation to charity?

This HIT involves multiple different survey tasks. If you complete all of items in Part 1, you will earn a $1.00 bonus. We're offering you the opportunity to donate these earnings to one of three charities (that you choose!). Choose to give and we will make the donation on your behalf. Please consider spreading joy and helping others by donating!

[CONDITION: Recurring Donation Condition]

- **Yes, I will make a recurring daily donation of $.10 for ten days**
- **No**, I don't want to help.

[CONDITION: One-Time Donation Condition]

- **Yes, I will make a one-time donation of $1.00 today**
- **No**, I don't want to help.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation]

Thank you for your generosity! To which charity do you want to give your donation?

- ASPCA The American Society for the Prevention of Cruelty to Animals (ASPCA) works to rescue animals from abuse, pass humane laws, and share resources with shelters nationwide.
- FEEDING AMERICA Feeding America is a hunger organization with a nationwide network of food banks feeding the hungry.
- Habitat for Humanity Habitat for Humanity is devoted to building decent, affordable homes to those in need.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation]

Thank You

Your generosity to [CHARITY] is much appreciated!!!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

You will be making a daily recurring donation of $.10 for each of the next ten days.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

You will be making a single one-time donation of $1.00 today.

----Next Page----

Part 1 of this HIT starts on the next page. Please click forward to begin.

----Next Page----

[UNRELATED PUZZLE TASK]

----Next Page----

Did you experience any technical difficulties while completing today's study?

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female
- Prefer not to say

What is your age?

_____

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

----Next Page----

Just a quick reminder: In 2-4 weeks, you will be asked (via your MTurk account) to complete a second, shorter follow-up survey. That survey will take < 1 min. and you will receive an additional $1 bonus for completing it.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Initial Donation Request]

Earlier (before beginning Part 1 of this HIT) you chose to make a donation to [CHARITY]. The final few questions are about this donation.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Initial Donation Request]

How happy do you feel about your donation?

Not at All Happy						Very Happy
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the following two items is randomized.]

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Initial Donation Request]

How much did you donate?
(0 = Very Little, 100 = Very Much)

Very Little										Very Much
0	10	20	30	40	50	60	70	80	90	100

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Initial Donation Request]

How committed are you to this charity?

Not at All Committed								Very Committed
1	2	3	4	5	6	7	8	9
○	○	○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the prior two items is randomized.]

16.0 Web Appendix P (Essay 2). Study 5A Survey and Stimuli for Time 2

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]
You previously completed Part 1 of this HIT about two weeks ago. Before starting Part 1, you chose not to make a donation to charity.

This is Part 2 of the same HIT.

Part 2 is a brief follow-up to Part 1, averages less than 1 minute to complete, and earns you a bonus of $1.00.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]
You previously completed Part 1 of this HIT about two weeks ago. Before starting Part 1, you chose to make a recurring daily donation of $.10 for the next ten days to [CHARITY].

This is Part 2 of the same HIT.

Part 2 is a brief follow-up to Part 1, averages less than 1 minute to complete, and earns you a bonus of $1.00.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]
You previously completed Part 1 of this HIT about two weeks ago. Before starting Part 1, you chose to make a one-time donation of $1 to [CHARITY].

This is Part 2 of the same HIT.

Part 2 is a brief follow-up to Part 1, averages less than 1 minute to complete, and earns you a bonus of $1.00.

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]
How much of your payment for completing today's survey (Part 2 of the HIT) would you be willing to donate to charity (you choose one of three on the next page)?
(this amount will be deducted from today's bonus payment)

(Don't include the "$" symbol)
_____

[INITIAL DONORS: Chose to Make Initial Donation]

How much of your payment for completing today's survey (Part 2 of the HIT) would you be willing to donate to [CHARITY]?
(this amount will be deducted from today's bonus payment)

(Don't include the "$" symbol)
_____

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

On the previous page, you indicated you'd be willing to donate $[AMOUNT] of your payment to charity.

This amount will be deducted from your bonus payment for this survey.

To which charity do you want to give your donation?

- ASPCA The American Society for the Prevention of Cruelty to Animals (ASPCA) works to rescue animals from abuse, pass humane laws, and share resources with shelters nationwide.
- FEEDING AMERICA Feeding America is a hunger organization with a nationwide network of food banks feeding the hungry.
- Habitat for Humanity Habitat for Humanity is devoted to building decent, affordable homes to those in need.

[INITIAL DONORS: Chose to Make Initial Donation]

On the previous page, you indicated you'd be willing to donate $[AMOUNT] of your payment to [CHARITY].

This amount will be deducted from your bonus payment for this survey.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Subsequent Donation Request]

Earlier (before beginning Part 1 of this HIT), you chose to make a donation to [CHARITY]. The next few questions are about this donation, meaning about your ORIGINAL charitable contribution (associated with Part 1 of this HIT). This is the donation you made PRIOR to today.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Subsequent Donation Request]

How happy do you feel about your donation?

Not at All Happy						Very Happy
1	2	3	4	5	6	7
○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the following two items is randomized.]

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Subsequent Donation Request]

How much did you donate?
(0 = Very Little, 100 = Very Much)

Very Little										Very Much
0	10	20	30	40	50	60	70	80	90	100

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Measure Mediators After Subsequent Donation Request]

How committed are you to this charity?

Not at All Committed								Very Committed
1	2	3	4	5	6	7	8	9
○	○	○	○	○	○	○	○	○

[Note for Researcher: Presentation order of this item and the prior two items is randomized.]

17.0 Web Appendix Q (Essay 2). Study 5B Survey and Stimuli for Time 1

This HIT pays a higher-than-average rate because it contains two parts: the first part is completed today, and the second part is completed in a few weeks. It is important that participants complete BOTH parts.

Payment will be dispersed as a $.25 base pay + $1.00 bonus (totaling $1.25) for Part 1. You will earn and ADDITIONAL bonus of $1.00 by completing Part 2 in 2-4 weeks.

Only participants who complete all of Part 1 and all of Part 2 will be compensated the full $2.25.

----Next Page----

Please indicate your willingness to complete a brief (<1 min.) follow-up survey in 2-4 weeks.

- Yes, I am willing to complete the brief follow-up survey
- No, I am not willing to complete the brief follow-up survey

[Note for Researcher: Those selecting "No" did not continue.]

----Next Page----

[UNRELATED PUZZLE TASK]

----Next Page----

Did you experience any technical difficulties while completing today's study?

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female
- Prefer not to say

What is your age?

_____

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

----Next Page----

Are you a generous MTurker?

For the next ten days, we're giving MTurkers a special charitable opportunity!

Will you make a donation to charity?

You have earned a $1.00 bonus. We're offering you the opportunity to donate these earnings to one of three charities (that you choose!). Choose to give and we will make the donation on your behalf. Please consider spreading joy and helping others by donating!

- **Yes, I will make a recurring daily donation of $[RECURRING AMOUNT] for ten days [If selected, then CONDITION: Recurring Donation Condition]**
- **Yes, I will make a one-time donation of $[ONE-TIME AMOUNT] today [If selected, CONDITION: One-Time Donation Condition]**
- **No**, I don't want to help.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation]

Thank you for your generosity! To which charity do you want to give your donation?

- ASPCA The American Society for the Prevention of Cruelty to Animals (ASPCA) works to rescue animals from abuse, pass humane laws, and share resources with shelters nationwide.
- FEEDING AMERICA Feeding America is a hunger organization with a nationwide network of food banks feeding the hungry.
- Habitat for Humanity Habitat for Humanity is devoted to building decent, affordable homes to those in need.

----Next Page----

[INITIAL DONORS: Chose to Make Initial Donation]

Your generosity to [CHARITY] is much appreciated!!!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

You will be making a daily recurring donation of $[RECURRING AMOUNT] for each of the next ten days.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

You will be making a single one-time donation of $[ONE-TIME AMOUNT] today.

----Next Page----

Just a quick reminder: In 2-4 weeks, you will be asked (via your MTurk account) to complete a second, shorter follow-up survey. That survey will take < 1 min. and you will receive an additional $1 bonus for completing it.

18.0 Web Appendix R (Essay 2). Study 5B Analysis of Estimated Average Total Donation Amount

For all participants who were initially asked to donate (n = 1,055),[2] the net total donation was computed as the sum of the initial donation amount and the additional donation amount. For this analysis, the initial donation amount is equivalent to $0 (if the participant chose not to make an initial donation) or the randomly determined amount presented during the donation request (if the participant chose to make an initial donation). Because the follow-up portion of Study 5B was not conducted and subsequent donation decision were not made, we used covariate-adjusted average values obtained in Study 5A to estimate the subsequent donation amount. Those opting to make an initial recurring donation were assumed to give $.34, those making an initial lump-sum donation were assumed to give $.48, and those who chose not to make an initial donation were assumed to give $.03.

We conducted a linear regression analysis predicting the estimated net total donation amount as a function of initial donation structure (generating two dummy-coded indicators; D_1: 1 = chose one-time initial donation, 0 = chose recurring initial donation; D_2: 1 = chose not to make initial donation, 0 = chose recurring initial donation), controlling for (mean-centered) income. Results show that those who made an initial one-time donation gave a significantly larger net amount (M = $.93) than those who made an initial recurring donation (M = $.83; b = .103, SE = .045, t = 2.30, p = .022). Those who did not make an initial donation gave a significantly smaller net amount ($.62) than initial recurring donors (b = -.208, SE = .035, t = -4.86, p < .001).

[2] Mean-centering was re-computed for this analysis.

This suggests that presenting an initial donation request in a way that allows initial donors to choose a lump-sum gift as their preferred temporal format increased the average net donation amount by $.10 per person. Given the strong assumptions made regarding individuals' subsequent donations, these results should be interpreted cautiously. Although additional experimental investigation is needed, this finding suggests that offering both temporal structures as options for initial giving may have the potential to boost the average amount of charitable funds raised per person.

19.0 Web Appendix S (Essay 2). Gender Effects

Across all studies, we find little evidence of gender effects. For each analysis, we tested whether gender moderated the tested effect. Most results indicated no moderating influence of gender, with only two analyses producing marginally significant results. In both cases, however, the primary pattern of results does not meaningfully change.

In Study 1, gender exhibits a marginally significant moderating effect of initial donation structure on the additional amount donors give (b = 4.197, SE = 2.182, t = 1.92, p = .055). Among recurring donors, males and females give a similar subsequent amount (b = 1.274, SE = 1.546, t = .82, p = .410). Among one-time donors, males give marginally less than female donors (b = -2.922136, SE = 1.551522, t = -1.88, p = .061). However, recurring donors give less than one-time donors, both for male donors (b = -11.774, SE = 1.543, t = -7.63, p < .0001) and female donors (b = -15.971, SE = 1.543, t = -10.35, p < .0001).

In Study 5A, gender marginally moderates the (marginally significant) interactive effect between the timing of mediator measurement and the temporal structure of the initial donation (b = -1.154, SE = .685, t = -1.69, p = .093) on the happiness donors experienced from their initial donation. The interaction emerging for males (b = -1.503, SE = .530, t = -2.84, p = .005) but not for females (b -.349, SE = .436, t = -.80, p = .424). Female recurring donors and female one-time donors did not experience different levels of happiness, regardless of whether happiness was measured after the initial donation request or after the subsequent donation request. When happiness was measured after the initial donation decision, male recurring donors reported more happiness than male one-time donors (b = .956, SE = .359, t = 2.66, p = .008). When measured after the subsequent donation decision, male recurring donors did not differ from male one-time

donors in their happiness (b = -.547, SE = .391, t = -1.40, *p* = .164). Despite this, the downstream (null) results remain the same. The addition of gender to the simultaneous mediation model did not change the indirect effect of initial donation format on subsequent donation amount through happiness (index of moderated mediation: b = -.006, SE = .023, CI_{95}[-.054, .040]).

20.0 Web Appendix T (Essay 2). Donor Attrition

For the three studies in which participants complete a follow-up study at a later point in time (Study 2, Study 3, and Study 5A), we explored whether attrition varied by the temporal structure of the initial donation format. No difference emerged for Study 2 or Study 5A, but Study 3 found that recurring donors were more likely to respond than one-time donors.

In Study 2, 79.28% (n = 287) of the original sample responded to the follow-up survey. We ran a binary logistic regression predicting likelihood of responding to follow-up survey (1 = completed follow-up survey, 0 did not complete follow-up survey) as a function of initial donation structure (dummy-coded as recurring without notifications: 0 = one-time donor, 1 = recurring w/out notifications; and recurring with notifications: 0 = one-time donor, 1 = recurring w/notifications), while controlling for participant income. No effect of donation structure emerged (χ^2 (2) = .86, p = .651). Recurring donors who received a reminder (76.73%; b = -.266, SE = .318, t = -.84, p = .403) and recurring donors who did not receive a reminder (80.65%; b = -.031, SE = .329, t = -.09, p =.926) were similarly likely to complete the follow-up survey as one-time donors (81.12%). In addition, there was no difference between recurring donors who received a reminder and those who did not (b = -.235, SE = .317, t = -.74, p =.495).

In Study 3, 75.69% (n = 193) of the original sample responded to the follow-up survey. Running a binary logistic regression analysis with completion of the follow-up survey (1 = completed survey, 0 = did not complete survey) as dependent variable and initial donation structure (1 = recurring, 0 = one-time) and income as predictors reveals a significant effect of donation structure (b = .645, SE = .301, t = 2.14, p = .032). Recurring donors (81.33%) were more likely to complete the follow-up survey than one-time donors (69.89%). The same pattern of results

emerges when including those who responded to the follow-up but were excluded for failing the attention check (n = 10; b = .727, SE = .324, t = 2.25, p = .025).

In Study 5A, 70.20% of initial donors (n = 212) completed the follow-up survey. We ran a binary logistic regression predicting likelihood of responding to follow-up survey (1 = completed follow-up survey, 0 = did not complete follow-up survey) as a function of initial donation structure. Attrition did not vary by temporal structure of initial donation (b = -.273, SE = .255, t = -1.07, p = .285). Recurring donors (67.66%) did not differ from one-time donors (73.33%) in likelihood to respond to the follow-up survey. The same pattern of results emerged when controlling for income and timing of mediator measurement (b = -.122, SE = .285, t = -.43, p = .669).

21.0 Web Appendix U (Essay 2). Study 5A Pilot

Prior to running Study 5A, which involved consequential donation decisions, we first ran a pilot test using a scenario paradigm. In addition to testing the primary prediction regarding recurring donors' reduced giving and exploring potential net effects, this study additionally revisits an alternative explanation for recurring donors' smaller subsequent giving: that recurring donors may be systematically misinterpreting the temporal structure of the additional charitable donation. Results from Study 1's first follow-up experiment did not find evidence that recurring donors perceive the second, subsequent donation request as temporally distributed to a greater degree than one-time donors. In that follow-up experiment, however, all participants imagined donating both initially and subsequently, meaning neither donation decision was freely chosen. By contrast, this study uses a paradigm in which both the initial donation decision and subsequent donation decisions are voluntary. Consequently, this study provides additional empirical testing regarding this alternative explanation.

21.1 Method

The current study employs a paradigm similar to Study 1, simulating giving over a six-month period. In July 2019, participants imagined that the American Society for the Prevention of Cruelty to Animals (ASPCA) was running a new online donation campaign in which donors sponsor a specific animal. When asking participants to make a charitable gift, the ASPCA presented the donation request as a binary choice: donate the equivalent of $30 or donate nothing.

We manipulated the presentation of the donation option, however, to represent either a one-time charitable gift or a recurring charitable gift. Those randomly assigned to the one-time donation condition chose between making a "one-time charitable gift of $30" and not donating. Those randomly assigned to the recurring donation condition, however, chose between making a "monthly gift of $5 for six months" and not donating. All participants (n = 476 MTurkers; 47.48% male; M_{age} = 38.53, SD = 11.94) [3] indicated whether they would make an initial donation by selecting one of the two presented options. Choosing to donate, therefore, defaulted initial donors into the temporal structure presented. In total, 259 participants (42.08% male; M_{age} = 38.42, SD = 11.74)[4] opted to make an initial charitable contribution, representing our final sample of prior donors.

After making their initial decision, participants imagined six months passing (July through December). Participants mimicked time passing by clicking forward through six separate online survey pages, each representing one month. Included on each page was a calendar image of the corresponding month. Those who made an initial donation additionally viewed a summary of their giving for each month, if a donation was made. For example, in the first month (July) one-time donors read that they gave $30 to the ASPCA and recurring donors read that they gave $5 to the ASPCA. In the second month (August), however, one-time donors did not view a donation summary, whereas recurring donors read that they gave $5 to the ASPCA (see Web Appendix V for survey and stimuli).

After simulating six months passing, all participants (both initial donors and initial non-donors) imagined that the ASPCA was requesting an additional, one-time donation and reported

[3] Number after excluding those who reported technical problems, being a non-native English speaker, or vision impairment that interfered with survey completion (n = 24).
[4] Number after excluding those who reported technical problems, being a non-native English speaker, or vision impairment that interfered with survey completion (n = 17).

the amount they would give ("Six months have passed…and it's now January! The ASPCA asks you to make an additional, one-time donation. How much would you give in response to this one-time donation request?" US $, open response). The hypothetical nature of this scenario allowed us to minimize donor attrition. Specifically, all 259 initial donors completed the follow-up question regarding the additional charitable request. Consequently, our final analysis sample is comprised of all 259 initial donors (42.08% male; M_{age} = 38.42, SD = 11.74).[5]

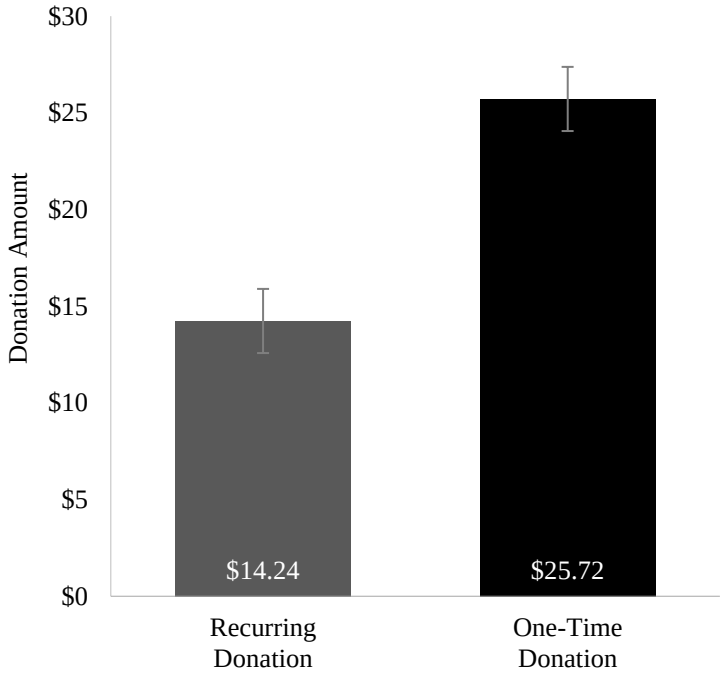
Although this additional charitable request was explicitly described as a one-time donation, we wanted to assess whether the temporal format presented with the initial donation request impacted individuals' understanding of the temporal format of the second donation request. Participants indicated whether they interpreted the subsequent donation request as a one-time donation or a recurring donation ("In the previous question, you indicated you would give $[X]. How did you interpret this donation request?" 1 = "this means I'm making a one-time donation of $[X], 0 = "this means I'm making a monthly repeated donation of $[X]"). Finally, participants completed the three-item index of charity perceptions from Study 1 (α = .88)[6] and provided basic demographic information (e.g., income).

[5] Number after excluding those who reported technical problems, being a non-native English speaker, or vision impairment that interfered with survey completion (n = 17).
[6] This estimate reflects final analysis sample of 259 prior donors (to facilitate comparison to Study 1 estimate). Including the initial 476 participants results in α = .93.

21.2 Results

21.2.1 Subsequent Donation Amount

To test whether the initial donation format impacted the size of donors' subsequent gift, we conducted a regression predicting the subsequent donation amount as a function of the temporal format of the initial donation as the primary predictor, (0 = one-time donor, 1 = recurring donor), controlling for (mean-centered) income and charity perceptions. Results show a significant main effect of initial donation structure (b = -11.482, SE = 2.418, t = -4.75, $p < .0001$). Consistent with our predictions, recurring donors made a significantly smaller subsequent donation (M = $14.24) compared to one-time donors (M = $25.72; see Web Appendix U Figure 1).



Note. Error bars represent standard errors. Estimates are adjusted for income and charity perceptions.

Web Appendix U (Essay 2). Figure 1 Study 5A Pilot: Subsequent Donation Amount

21.2.2 Observed Likelihood of Making Subsequent Donation (Inferred from Amount)

To test whether the temporal format of the initial donation impacted the likelihood of donors making a subsequent donation, we generated an indicator variable specifying whether initial donors made a subsequent donation (0 = size of subsequent donation equals $0, 1 = size of subsequent donation exceeds $0). In total, 89.96% of initial donors made a second donation (n = 233).

We conducted a binary logistic regression with the subsequent donation decision indicator variable as the dependent variable (1 = made subsequent donation, 0 = did not make subsequent donation) and initial donation structure (0 = one-time donor, 1 = recurring donor), (mean-centered) income, and charity perceptions as predictors. Initial donation format did not predict likelihood to make a subsequent donation (b = -.148, SE = .428, t = -.35, p = .730), with recurring donors (89.30%) and one-time donors (90.55%) similarly likely to make a second charitable contribution.

21.2.3 Perceived Temporal Format of Subsequent Donation Request

To examine whether the temporal format presented with the initial donation request impacted individuals' understanding of the temporal format of the subsequent donation request, we conducted a binary logistic regression predicting donors' interpretation of the subsequent donation request (1 = requested a one-time contribution, 0 = requested a recurring contribution) as a function of the temporal format of donors' initial giving (0 = one-time donor, 1 = recurring donor), controlling for (mean-centered) income and charity perceptions. Results show no effect of initial donation format (b = -.608, SE = .548, t = -1.11, p = .267), suggesting that recurring donors

(92.46%) and one-time donors (95.71%) were equally likely to (correctly) interpret the subsequent charitable request as a one-time donation.

21.2.4 Likelihood of Making Initial Donation

To examine whether the temporal format presented to potential donors shaped their likelihood to make an initial charitable contribution, this analysis includes all participants who were initially asked to donate (n = 476),[7] of which 54.41% (n = 259)[8] opted to give. We ran a binary logistic regression with initial giving as the dependent variable (1 = chose to make initial donation, 0 = chose not to make initial donation), and initial donation structure presented to participant (0 = one-time donation, 1 = recurring donation), (mean-centered) income,[9] and charity perceptions as predictors. Results show no main effect of the temporal structure of the initial donation presented (b = -.348, SE = .222, t = -1.57, p = .116). Individuals presented with the recurring donation format (51.40%) were equally likely as those presented with the one-time format (57.40%) to make an initial donation.

21.2.5 Average Total Donation Amount

This analysis explores the net effect of requesting an initial donation exclusively in the recurring or one-time temporal format. For all participants who were initially asked to donate (n = 476),[10] the net total donation was computed as the sum of the initial donation amount (equivalent

[7] Number after excluding those who reported technical problems, being a non-native English speaker, or vision impairment that interfered with survey completion (n = 24).
[8] Number after excluding those who reported technical problems, being a non-native English speaker, or vision impairment that interfered with survey completion (n = 17).
[9] Mean-centering was re-computed for this analysis.
[10] Number after excluding those who reported technical problems, being a non-native English speaker, or vision impairment that interfered with survey completion (n = 24).

to $30 or $0, depending on initial donation decision) and the subsequent donation amount. Results from a linear regression analysis predicting total donation amount as a function of the initial donation structure presented to the participant (0 = one-time donation, 1 = recurring donation), controlling for (mean-centered) income[11] and charity perceptions, reveals a significant effect of initial donation structure (b = -9.426, SE = 2.209, t = -4.27, $p < .0001$). Overall, individuals initially presented with the recurring donation format option (M = $24.38) contributed less to the charity, on average, than those initially presented with the one-time donation format option (M = $33.81). This suggests that presenting an initial donation request in a way that forces those who donate to give in a one-time format increased the average net donation amount by approximately $9.43 per person.

21.3 Discussion

This study examined the influence of offering only a single temporal structure option to initial donors. Consistent with prior results suggesting an anchoring effect, this study finds that recurring donors gave less than one-time donors when asked to make a second (one-time) charitable contribution to the same charity. Despite being similarly likely to make the subsequent donation, recurring donors gave 44.63% less than one-time donors.

Furthermore, this study revisits whether recurring donors may be systematically misinterpreting the temporal structure of the additional charitable donation. Supporting findings from Study 1's first follow-up experiment, we do not observe a difference between recurring donors and one-time donors with respect to interpretation of the subsequent donation request as

[11] Mean-centering was re-computed for this analysis.

temporally distributed. This provides additional evidence ruling out this alternative explanation and suggests recurring donors are not giving a smaller subsequent amount because they believe it is a recurring gift.

In this study, merely asking for an initial donation in a recurring format (versus a one-time format) did not impact the likelihood that someone would make an initial donation but did impact the average cumulative amount a person gives, in total, across both the initial and the subsequent donation requests. Whereas the PAD effect (Gourville 1998; 2003) suggests individuals may be more likely to make an initial donation to charity when the request is presented as a (temporally-dispersed) recurring contribution versus a (temporally-aggregated) one-time contribution, this study finds no difference in likelihood to give. In addition, results suggest that the average total funds charities raise per person is smaller when an initial charitable request is presented as a recurring (vs. one-time) contribution.

In sum, this study provides additional evidence that recurring donors subsequently give less than one-time donors, consistent with an anchoring-based account. In addition, this these findings suggest that restricting the initial donation to a one-time giving structure may represent an additional way to offset the reducing giving of recurring donors. To address weaknesses associated with this study's simulated giving paradigm, however, Study 5A tests the robustness of these results using a more behaviorally consequential design.

22.0 Web Appendix V (Essay 2). Study 5A Pilot Survey and Stimuli

On the next page you will read a brief scenario about a consumer experience and will then be asked questions about that experience.

Read carefully so you can answer specific questions about the scenario later.

Please try to imagine the scenario as <u>vividly</u> and <u>realistically</u> as possible.

----Next Page----

The American Society for the Prevention of Cruelty to Animals (ASPCA) is a charity that works to rescue animals from abuse, pass humane animal welfare laws, and share resources with shelters nationwide.

----Next Page----

Imagine that the ASPCA is running a new online donation campaign right now. In this campaign, the ASPCA is asking people to "sponsor" a particular animal by donating a given amount.

----Next Page----

Imagine that the ASPCA is running a new online donation campaign right now. In this campaign, the ASPCA is asking people to "sponsor" a particular animal by donating a given amount.

The ASPCA asks you to make a charitable donation and presents you with the options below.

[CONDITION: Recurring Donation Condition]
Which do you choose?

- I would make a monthly charitable gift of $5 per month for six months
- I would not make a charitable gift

[CONDITION: One-Time Donation Condition]
Which do you choose?

- I would make a one-time charitable gift of $30
- I would not make a charitable gift

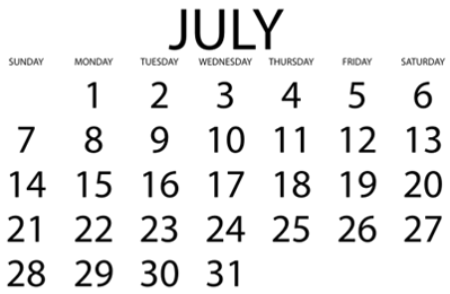
----Next Page----

Imagine that six months pass.
On the next few screens, you will simulate time passing.

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

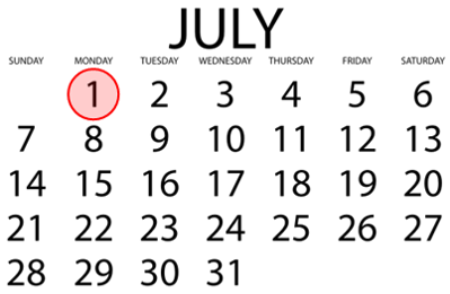
It's July!



[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

It's July!

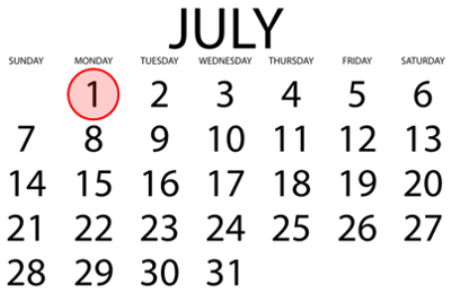
You donate $5 to the ASPCA.



[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

It's July!

You donate $30 to the ASPCA.



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[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

It's August!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

It's August!

You donate $5 to the ASPCA.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

It's August!

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

It's September!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

It's September!

You donate $5 to the ASPCA.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

It's September!

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

It's October!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

It's October!

You donate $5 to the ASPCA.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

It's October!

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

It's November!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

It's November!

You donate $5 to the ASPCA.

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

It's November!

----Next Page----

[INITIAL NON-DONORS: Chose to NOT Make Initial Donation]

It's December!

[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: Recurring Donation Condition]

It's December!

You donate $5 to the ASPCA.

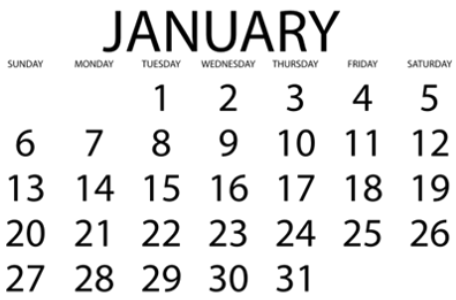
[INITIAL DONORS: Chose to Make Initial Donation & CONDITION: One-Time Donation Condition]

It's December!

----Next Page----

Six month have passed.....

...and it's now January!



The ASPCA asks you to make an additional, one-time donation.

How much would you give in response to this one-time donation request? (US $)

Don't include the "$" symbol)

_____

----Next Page----

In the previous question, you indicated you would give $[AMOUNT FROM PRIOR QUESTION]

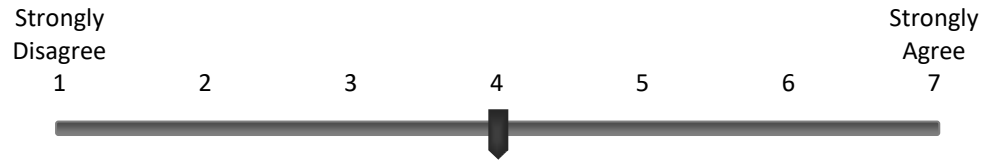
How did you interpret this donation request?

- This means I'm making a one-time donation of $[AMOUNT FROM PRIOR QUESTION]
- This means I'm making a monthly repeating donation of $[AMOUNT FROM PRIOR QUESTION]

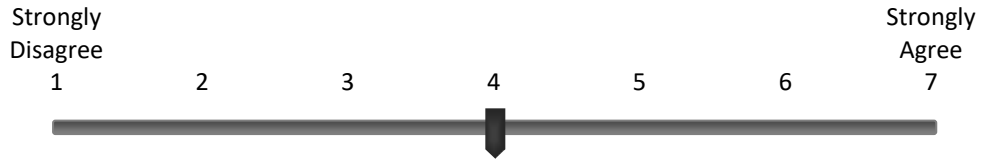
----Next Page----

Please indicate how much you agree with the following statements.

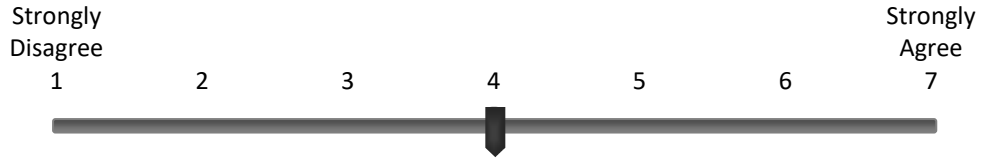
The ASPCA supports a good cause.



The ASPCA is a good charity.



The ASPCA makes a difference.



[Note for Researcher: Order of above three items is randomized.]

----Next Page----

Did you experience any technical difficulties while completing today's study?

- Yes
- No

----Next Page----

The following questions are for classification purposes only:

With which gender do you identity?

- Male
- Female
- Prefer not to answer

What is your age?

_____

Is English your first language?

- Yes
- No

What is your household's approximate annual income (in US dollars) before taxes? Please include all household earners in this approximation.

(Don't include the "$" symbol)

_____

----Next Page----

Do you have any visual impairments that made it difficult for you to view the graphics or complete the sliding scales?

(Your response will not impact your payment)

- Yes
- No

23.0 Web Appendix W (Essay 3). Summary of New Empirical Evidence (Single-Study Results)

(1) **Study**	(2) **Product**	(3) **Final Analyzed Sample**	(4) **Context**	(5) **Time Scarcity Manipulation/Measurement** TS = time scarcity, TC = time control, QS = quantity scarcity, C = control	(6) **Other Factor(s)**	(7) **Online TS Promo**	(8) **Outcome Variable**	(9) **TS Promo Effect**	(10) **Effect Details**
1	tablet computer	383 (MTurkers)	Imagined shopping online for a tablet and viewed a fictional online retailer's product description advertising the tablet at a promotional discount.	TS: "**[*countdown= 1 hr: 26 min: 40 sec*] …time left until his deal expires!** Discounted 40%" TC: "[countdown= 1 hr: 26 min: 40 sec]…time left until Gifted.com's 2 year anniversary! Discounted 40%" C: "Discounted 40%"	—	Yes	WTP (rating)	–	↓
							Purchase Intentions	=	TS = C
							Product Desirability	=	TS = C
							Product Quality	=	TS = C
							Retail Website	=	TS = C
							Product Scarcity	$+_2$	↑
							Duration of Discount Availability (hours)[1]	–	↓
2	tablet computer	159 (MTurkers)	search task paradigm adapted from Ma and Roese (2014; experiment 2).	TS: "**[*countdown= 1 hr: 26 min: 40 sec*] …time left until his deal expires!** Originally $399.99. Discounted 40%" TC: "[countdown= 1 hr: 26 min: 40 sec] …time left until Gifted.com's 2 year anniversary! Originally $399.99. Discounted 40%" C: "Originally $399.99. Discounted 40%"	—	Yes	Time searched	$+_2$	↑
							Maximizing Mindset	=	TS = C
							Desire to "Beat" Retailer	+	↑
3	tablet computer	371 (MTurkers)	(same as study 1)	**displayed randomly selected time* TS: "**[*countdown= 0 hr: 8 min: 40 sec – 1 hr: 18 min: 0 sec*] …time left until his deal expires!** Discounted 40%" C: "Discounted 40%"	Retail Context: holiday-themed (H); not holiday-themed (N) Product Recipient: self (S); other (O)	Yes	WTP ($)	=	TS = C
							Purchase Intentions	=	TS = C
							Product Quality	=	TS = C
							Retail Website	~	H: ↓ N: TS = C
							Retailer as Opponent	=	TS = C
							PK Activation	+	↑
							Time Remaining	–	↓
							Product Scarcity	+	↑
							Consumers as Opponent	=	TS = C
							Psych Reactance (freedom of choice)	=	TS = C
							Psych Reactance (freedom of behavior)	=	TS = C
							PANAS (positive)	=	TS = C
							PANAS (negative)	$\sim_2$	H = S: TS = C O: TS = C N = S: TS = C O: ↓$_2$
							Time Willing to Search	$=_2$	H = S: TS = C O: TS = C N = S: TS = C O: TS = C

(1) **Study**	(2) **Product**	(3) **Final Analyzed Sample**	(4) **Context**	(5) **Time Scarcity Manipulation/Measurement** TS = time scarcity, TC = time control, QS = quantity scarcity, C = control	(6) **Other Factor(s)**	(7) **Online TS Promo**	(8) **Outcome Variable**	(9) **TS Promo Effect**	(10) **Effect Details**
4	air purifier	93 (MBA Students)	Imagined shopping online to purchase an air purifier and viewed a fictional Amazon online product description advertising the unit at a promotional discount.	TS: "Discounted 40%. **[*countdown= 1 hr: 26 min: 40 sec*] …time left until his deal expires!"** C: "Discounted 40%"	Risk Reduction: reduction ("verified seller"); control (**no additional information)*	Yes	WTP ($)	=	TS = C
							WTP (rating)	=	TS = C
							Purchase Intentions	$+_2$	$\uparrow_2$
							Product Desirability	=	TS = C
							Product Quality	=	TS = C
							Retail Website	$+_2$	$\uparrow_2$
							Retailer as Opponent	=	TS = C
							Product Scarcity	=	TS = C
5	air purifier	190 (MTurkers)	(same as Study 4)	TS: "Discounted 40% **[*countdown= 1 hr: 26 min: 40 sec*] …time left until his deal expires!"** C: "Discounted 40%"	(same as Study 4)	Yes	WTP ($)	=	TS = C
							WTP (rating)	=	TS = C
							Purchase Intentions	$+_2$	$\uparrow_2$
							Product Desirability	=	TS = C
							Product Quality	=	TS = C
							Retail Website	=	TS = C
							Retailer as Opponent	=	TS = C
							Product Scarcity	$+_2$	$\uparrow_2$
6	iPad Mini 2	185 (MTurkers)	Imagined shopping online to purchase an iPad mini 2 and viewed a fictional Amazon online product description advertising the unit at a promotional discount.	**displayed randomly selected time* TS: "Discounted 40%. **[*countdown= 0 hr: 8 min: 40 sec – 1 hr: 18 min: 0 sec*] …time left until his deal expires!"** C: "Discounted 40%"	Elaboration: elaboration; control	Yes	WTP ($)	=	TS = C
							Purchase Intentions	=	TS = C
							Product Quality	=	TS = C
							Retail Website	$\sim_2$	E_C: TS = C E_E: ↓
							Retailer as Opponent	=	TS = C
							Time Remaining	–	↓
							Product Scarcity	=	TS = C
7	fitness tracker	133 (MTurkers)	Imagined shopping online to purchase a Fitbit Charge HR and viewed a fictional online product description from Fitbit's website advertising the fitness tracker at a promotional discount.	**displayed randomly selected time* TS: "40% off. **LIMITED TIME! [*countdown= 0 hr: 8 min: 40 sec – 1 hr: 18 min: 0 sec*] …time left until his deal expires!"** C: "40% off"	—	Yes	WTP ($)	+	↑
							Product Desirability	=	TS = C
							Product Quality	=	TS = C
							Retail Website	=	TS = C
							Retailer as Opponent	=	TS = C
							Time Remaining	–	↓
							Product Scarcity	=	TS = C
8	fitness tracker	124 (MTurkers)	(same as Study 7)	**displayed randomly selected time* TS: "40% off. **LIMITED TIME! [*countdown= 0 hr: 8 min: 40 sec – 1 hr: 18 min: 0 sec*] …time left until his deal expires!"** C: "40% off"	—	Yes	WTP ($)	=	TS = C
							Product Desirability	=	TS = C
							Product Quality	=	TS = C
							Retail Website	=	TS = C
							Retailer as Opponent	=	TS = C
							Time Remaining	–	↓
							Product Scarcity	=	TS = C
							Benefiting Self	=	TS = C
							Benefiting Retailer	=	TS = C

(1) **Study**	(2) **Product**	(3) **Final Analyzed Sample**	(4) **Context**	(5) **Time Scarcity Manipulation/Measurement** TS = time scarcity, TC = time control, QS = quantity scarcity, C = control	(6) **Other Factor(s)**	(7) **Online TS Promo**	(8) **Outcome Variable**	(9) **TS Promo Effect**	(10) **Effect Details**
9	personal choice	47 (Undergrad Students)	Identified a "wish list" item, provided details about item and online seller (e.g., price, url), viewed two online retailers' promotions for the desired item.	**displayed randomly selected time* *******within-subjects* TS: "40% Off!! **Limited Time Offer! [*countdown= 0 hr: 2 min: 0 sec – 2 hr: 0 min: 0 sec*]"** C: "40% Off!!"	—	Yes	PK Activation	+	↑
							Choice of TS Retailer	=	TS = C
10	personal choice	265 (MTurkers)	(same as Study 9)	**displayed randomly selected time* *******within-subjects* TS: "40% Off!! **Limited Time Offer! [*countdown= 0 hr: 2 min: 0 sec – 2 hr: 0 min: 0 sec*]"** C: "40% Off!!"	—	Yes	PK Activation	+	↑
							Choice of TS Retailer	–	↓
11	wireless headphones	189 (MTurkers)	Imagined shopping online to purchase Beats Solo[3] wireless headphones, viewed a fictional online product description advertising the item at a discount (with price provided), wrote about thoughts and feelings experienced when looking at ad	**displayed randomly selected time* TS: "$179.97 ~~($299.95)~~. 40% off. **[*countdown= 0 hr: 8 min: 40 sec – 1 hr: 18 min: 0 sec*] …time left until his deal expires!"** C: "$179.97 ~~($299.95)~~. 40% off."	—	Yes	Purchase Intentions	=	TS = C
							Retail Website	–	↓
							Time Remaining	–	↓
							Product Scarcity	=	TS = C
							LIWC output:		
							Analytic	=	TS = C
							Affect	–	↓
							Positive Emotions	–	↓
							Negative Emotions	=	TS = C
							Cognitive Processes	=	TS = C
							Risk	=	TS = C
							Reward	=	TS = C
							Money	=	TS = C
12**	TrackR Bravo	470 (MTurkers)	Imagined shopping online to purchase a TrackR Bravo and viewed a fictional online product description from TrackR's website advertising item at a promotional discount.	**displayed randomly selected time* TS: "40% off. **[*countdown= 0 hr: 8 min: 0 sec – 24 hr: 0 min: 0 sec*] …time left until his deal expires!"** C: "40% off."	—	Yes	WTP ($)	=	TS = C
							Retail Website	=	TS = C
							Time Remaining[3]	+	↑
							Product Scarcity[3]	=	TS = C
13**	TrackR Bravo	577 (MTurkers)	(same as Study 12)	**displayed randomly selected time* TS: "40% off. **[*countdown= 0 hr: 8 min: 0 sec – 24 hr: 0 min: 0 sec*] …time left until his deal expires!"** C: "40% off."	—	Yes	WTP ($)	=	TS = C
							Retail Website	=	TS = C
							Time Remaining[3]	+	↑
							Product Scarcity[3]	=	TS = C

(1) **Study**	(2) **Product**	(3) **Final Analyzed Sample**	(4) **Context**	(5) **Time Scarcity Manipulation/Measurement** TS = time scarcity, TC = time control, QS = quantity scarcity, C = control	(6) **Other Factor(s)**	(7) **Online TS Promo**	(8) **Outcome Variable**	(9) **TS Promo Effect**	(10) **Effect Details**
14	tablet computer	459 (MTurkers)	(same as Study 1 and Study 3)	TS-short: "**[*countdown= 0 hr: 8 min: 0 sec*] …time left until his deal expires!** Discounted 40%" TS-long: "**[*countdown= 1 hr: 26 min: 40 sec*] …time left until his deal expires!** Discounted 40%" TC-short: "[*countdown= 0 hr: 8 min: 0 sec*] …time left until Gifted.com's 2 year anniversary! Discounted 40%" TC-long: "[*countdown= 1 hr: 26 min: 40 sec*] …time left until Gifted.com's 2 year anniversary! Discounted 40%" C: "Discounted 40%"	—	Yes	WTP ($) Purchase Intentions Retail Website Product Scarcity Duration of Discount Availability (hours)[1]	= = = = –	TS = C TS = C TS = C TS = C T_S: ↓ T_L: ↓
15	Smart QLED TV	376 (MTurkers)	Imagined shopping online to purchase a 65" Smart QLED TV and viewed a fictional Amazon online product description advertising the TV at a promotional discount.	TS-short1: "40% off**. [*countdown= 0 hr: 12 min: 0 sec*] …time left until his deal expires!**" TS-short2: "40% off. **[*countdown= 0 hr: 48 min: 0 sec*] …time left until his deal expires!**" TS-long1: "40% off. **[*countdown= 3 hr: 12 min: 0 sec*] …time left until his deal expires!**" TS-long2: "40% off. **[*countdown= 15 hr: 12 min: 0 sec*] …time left until his deal expires!**" C: "40% off."	—	Yes	WTP ($) Purchase Intentions Product Desirability Product Quality Retail Website Product Scarcity Duration of Discount Availability (hours)[1]	= = = = ~[2] = –	TS = C TS = C TS = C TS = C T_{S1}: T_{S2}: ↓ TS = C T_{L1}: T_{L2}: ↓ TS = C TS = C T_{S1}: ↓ T_{S2}: ↓ T_{L1}: ↓ T_{L2}: ↓
16**	wireless headphones	486 (MTurkers)	Completed 3 adapted CRT items (based on Frederick 2005) with instructions prompting system 1 or 2 thinking, imagined shopping online, viewed fictional online product description advertising item at a discount	TS-short: "40% off. **[*countdown= 0 hr: 8 min: 40 sec*] …time left until his deal expires!**" TS-long: "40% off. **[*countdown= 23 hr: 8 min: 40 sec*] …time left until his deal expires!**" C: "40% off"	Mindset: system 1; system 2	Yes	WTP ($) Retail Website Time Remaining Product Scarcity	~ ~ – ~	T_S: T_L: ↓ TS = C T_S: ↓ T_L: TS = C T_S: ↓ T_L: ↓ T_S: T_L: ↓ TS = C
17**	wireless headphones	512 (MTurkers)	Answered why or how questions to manipulate construal level (adaptation of Freitas et al. 2004), imagined shopping online, viewed fictional online product description advertising item at a discount	TS-short: "40% off. **[*countdown= 0 hr: 8 min: 40 sec*] …time left until his deal expires!**" TS-long: "40% off. **[*countdown= 23 hr: 8 min: 40 sec*] …time left until his deal expires!**" C: "40% off"	Construal Level: low; high	Yes	WTP ($) Retail Website Time Remaining Product Scarcity	= – – ~	TS = C T_S: ↓ T_L: ↓ T_S: ↓ T_L: ↓ T_S: ↑ T_L: TS = C
18**	wireless headphones	543 (MTurkers)	Evaluated shopping scenario that activated high or low persuasion knowledge (Isaac & Grayson 2017 imagined shopping online, viewed fictional online product description advertising item at a discount	TS-short: "40% off. **[*countdown= 0 hr: 8 min: 40 sec*] …time left until his deal expires!**" TS-long: "40% off. **[*countdown= 23 hr: 8 min: 40 sec*] …time left until his deal expires!**" C: "40% off"	Persuasion Knowledge: low; high	Yes	WTP ($) Retail Website Time Remaining Product Scarcity	= ~ – =	TS = C $P_L = T_S$: T_L: TS = C TS = C $P_H = T_S$: ↓ T_L: ↓ T_S: ↓ T_L: ↓ TS = C

(1) **Study**	(2) **Product**	(3) **Final Analyzed Sample**	(4) **Context**	(5) **Time Scarcity Manipulation/Measurement** TS = time scarcity, TC = time control, QS = quantity scarcity, C = control	(6) **Other Factor(s)**	(7) **Online TS Promo**	(8) **Outcome Variable**	(9) **TS Promo Effect**	(10) **Effect Details**
19**	wireless headphones	517 (MTurkers)	Completed figure matching task to prompt details or gist processing (Duke et al. 2018), imagined shopping online, viewed fictional online product description advertising item at a discount	TS-short: "40% off. **[*countdown= 0 hr: 8 min: 40 sec*] …time left until his deal expires!**" TS-long: "40% off. **[*countdown= 23 hr: 8 min: 40 sec*] …time left until his deal expires!**" C: "40% off"	Processing: details; gist	Yes	WTP ($) Retail Website Time Remaining Product Scarcity	= – – =	TS = C T_S: ↓ T_L: ↓$_2$ T_S: ↓ T_L: ↓$_2$ TS = C
20**	wireless headphones	498 (MTurkers)	Completed product evaluation task to manipulate elaboration (adapted from Carmon et al. 2003), imagined shopping online, viewed fictional online product description advertising item at a discount	TS-short: "40% off. **[*countdown= 0 hr: 8 min: 40 sec*] …time left until his deal expires!**" TS-long: "40% off. **[*countdown= 23 hr: 8 min: 40 sec*] …time left until his deal expires!**" C: "40% off"	Elaboration: elaboration; control	Yes	WTP ($) Retail Website Time Remaining Product Scarcity	= ~ – +	TS = C E_C = T_S: T_L: ↑ TS = C E_E = T_S: T_L: TS = C TS = C T_S: ↓ T_L: ↓ T_S: ↑ T_L: ↑
21**	wireless headphones	537 (MTurkers)	Read and wrote about instructions priming system 1 or system 2 thinking, completed 4 CRT items (Thomson and Oppenheimer 2016), imagined shopping online, viewed fictional online product description advertising item at a discount	TS-short: "40% off. **[*countdown= 0 hr: 8 min: 40 sec*] …time left until his deal expires!**" TS-long: "40% off. **[*countdown= 23 hr: 8 min: 40 sec*] …time left until his deal expires!**" C: "40% off"	Mindset: system 1; system 2	Yes	WTP ($) Retail Website Time Remaining Product Scarcity	= ~$_2$ ~ ~	TS = C S_1 = T_S: ↓ T_L: ↓$_2$ S_2 = T_S: T_L: TS = C TS = C T_S: ↓ T_L: TS = C T_S: ↑ T_L: TS = C
22	Mturk HIT	263 (MTurkers)	Number of minutes after the initial MTurk posting that HIT was accepted	MTurk HIT Title: TS: "Only 45 minutes left to participate in this consumer behavior study! Click now!" QS: "Only a limited number of slots left to participate in this consumer behavior study! Click now!" C: "Participate in this consumer behavior study! Click now!"	—	Yes	HIT Acceptance Time (minutes from posting) HIT Completion Time MTurker Competition Desire to "Beat" MTurk Requester HIT Availability Completion Opportunity	– = = = = =	↓$_2$ TS = C TS = C TS = C TS = C TS = C
23	audio recording package	9,378 (Potential Customers)	Customers on music school mailing list received email marketing promotion advertising a holiday recording special offer	TS: "**Time is Running Out:** Create a Holiday Gift to Last a Lifetime! **Limited Time Offer:** 10% off the Holiday Hits Package of your Choice" QS: "Slots are Filling Up Fast: Create a Holiday Gift to Last a Lifetime! Limited Quantity Offer: 10% off the Holiday Hits Package of your Choice" C: "Create a Holiday Gift to Last a Lifetime! 10% off the Holiday Hits Package of your Choice"	—	Yes	Opened Unsubscribed	+ =	↑ TS = C

(1) **Study**	(2) **Product**	(3) **Final Analyzed Sample**	(4) **Context**	(5) **Time Scarcity Manipulation/Measurement** TS = time scarcity, TC = time control, QS = quantity scarcity, C = control	(6) **Other Factor(s)**	(7) **Online TS Promo**	(8) **Outcome Variable**	(9) **TS Promo Effect**	(10) **Effect Details**
24	Valentine's Day gift idea website	357 (MTurkers)	Make purchase decision regarding website access; decision is honored (amount of $ deducted from final payment)	TS: "**Time is limited!** This Valentine's Day, make the world a better place for someone you love--gift gifts that give back. Show how much you care with a Valentine's Day gift that also helps shelter pets, the planet, poor families, and others –**only available for a limited time!** Valentine's Day Gifts that Mean More" C: This Valentine's Day, make the world a better place for someone you love--gift gifts that give back. Show how much you care with a Valentine's Day gift that also helps shelter pets, the planet, poor families, and others. Valentine's Day Gifts that Mean More"	Retailer Framing: cooperation; competition; control	Yes	WTP ($) Purchase Decision	= =	TS = C TS = C
25	online fashion retail	18,157 (Facebook Users, 18+)		TS-no reason: "**TIME IS RUNNING OUT! SALE!** Take 30% off your entire order of men's and women's fashion and accessories! (Use code TIME30A). **Sale ends on June 20th!** TS-reason: "**TIME IS RUNNING OUT! SPRING SALE! Time to switch to summer fashion -- spring ends June 20th!** Take 30% off your entire order of men's and women's fashion and accessories! (Use code SPRING30A). **Spring ends on June 20th! – and so does our spring sale!** C: "SALE! Take 30% off your entire order of men's and women's fashion and accessories! (Use code SALE30A). Sale!	—	Yes	Facebook Post Engagement Facebook Page Engagement	~[2] ~[2]	D_0 = N: R: ↑[2] TS = C D_1 = N: R: TS = C TS = C D_2 = N: R: TS = C TS = C D_0 = N: R: TS = C TS = C D_1 = N: R: TS = C TS = C D_2 = N: ↓[2] R: TS = C
26**	snacks	197 (Undergrad Students)	View online ad about snack deal, make purchase decision, buy snacks (if opted to buy)	TS-short: "Snack SALE. 3 for $1. ~~1 for $1~~. Mix & Match! **FLASH DEAL! Only available for…[*countdown= 0 hr: 0 min: 20 sec*].**" TS-long: "Snack SALE. 3 for $1. ~~1 for $1~~. Mix & Match! **FLASH DEAL! Only available for…[*countdown= 3 hr: 24 min: 20 sec*].**" C: "Snack SALE. 3 for $1. ~~1 for $1~~. Mix & Match! SPECIAL DEAL!"	—	Yes	Purchase Decision	=	T_S: TS = C T_L: TS = C

[1] Duration of Discount Availability was measured as a sliding scale ranging from 0 to 100 hours in study 1 and as an open (numeric) response in studies 14 and 15.
[2] Indicates a marginal effect.
[3] In studies 12 and 13, the perceived time remaining in the promotion and the perceived product scarcity were both measured using a sliding scale ranging from 1 (Not at All) to 100 (Very Much).
** Denotes pre-registration on Open Science Framework (OSF).
Note. The results represent single-study analyses, highlighting findings directly testing the influence of time scarcity promotions (vs. control condition). See Web Appendix X for covariates included in analyses. Excluding covariates does not substantially change. In study 13, inclusion of study 12 data (as pre-registered) does not change results. All countdown timers were dynamic, with time remaining actively decreasing upon viewing the online promotion. Time displayed was selected using a categorical (specific pre-determined amount of time) or continuous (randomly selected from pre-determined range) method. All conditions were manipulated between subjects, unless otherwise indicated. In Column 9, the nature of the time scarcity effect, relative to the control condition, is indicated as follows: positive ("+"), negative ("–"), null ("="), conditional ("~"), not applicable/no control condition ("NA_a"), and not applicable/direct TS effect ("NA_b").

24.0 Web Appendix X (Essay 3). Additional Single-Study Analysis Details

Study	Sample Exclusion Criteria	Initial Sample	Analyzed Sample	Covariates
1	—	383	383	Household income, Website Perceptions (index)
2	—	159	159	—
3	—	371	371	Household income, Website Perceptions (index)
4	Tech difficulties	105	93	Financial insecurity (index), Website Perceptions (index)
5	Tech difficulties, ESL	194	190	Household income, Website Perceptions (index)
6	Tech difficulties, attn check	202	185	Household income, Website Perceptions (index)
7	Tech difficulties, attn check (before study, fitness tracker owners filtered out)	143	133	Fitness identity, Household income, Website Perceptions (index)
8	Tech difficulties, attn check, ESL (before study, fitness tracker owners filtered out)	143	124	Fitness identity, Household income, Website Perceptions (index)
9	Tech difficulties, attn check, ESL	58	47	Planned purchase, Product Price
10	Tech difficulties, attn check, ESL	304	265	Planned purchase, Product Price
11	Tech difficulties, attn check, ESL, visual problems	201	189	Household income, Website Perceptions (index), Familiarity with product
12**	Tech difficulties, attn check, ESL, visual problems (before study, TrackR owners/purchasers and participants located outside the U.S. were filtered out)	502	470	Household income, Website Perceptions (index), Familiarity with product
13**	Tech difficulties, attn check, ESL, visual problems (before study, TrackR owners/purchasers and participants located outside the U.S. were filtered out)	599	577	Household income, Website Perceptions (index), Familiarity with product
14	Tech difficulties, attn check	613	459	Household income, Website Perceptions (index)
15	Tech difficulties, attn check, visual problems, ESL	404	376	Household income, Website Perceptions (index)
16**	Tech difficulties, attn check, visual problems, ESL, own product, IMC fail, mindset attn check (before study, participants located outside the U.S. were filtered out)	613	486	Household income, Website Perceptions (index), Familiarity with product
17**	Tech difficulties, attn check, visual problems, ESL, own product, IMC fail (before study, participants located outside the U.S. were filtered out)	569	512	Household income, Website Perceptions (index), Familiarity with product
18**	Tech difficulties, attn check, visual problems, ESL, own product, IMC fail (before study, participants located outside the U.S. were filtered out)	601	543	Household income, Website Perceptions (index), Familiarity with product
19**	Tech difficulties, attn check, visual problems, ESL, own product, IMC fail (before study, participants located outside the U.S. were filtered out)	583	517	Household income, Website Perceptions (index), Familiarity with product
20**	Tech difficulties, attn check, visual problems, ESL, own product, IMC fail (before study, participants located outside the U.S. were filtered out)	565	498	Household income, Website Perceptions (index), Familiarity with product
21**	Tech difficulties, attn check, visual problems, ESL, own product, IMC fail, mindset attn check, sought CRT help (before study, participants located outside the U.S. were filtered out)	576	537	Household income, Website Perceptions (index), Familiarity with product
22	Tech difficulties, ESL	264	263	—
23	—	9,378	9,378	—
24	Tech difficulties, ESL, non-Facebook users, (before study, non-shoppers for valentine's day present filtered out)	401	357	Household income, Valentine's Day Perceptions (index)
25	—	18,157	18,157	—
26**	Tech difficulties, ESL, visual problems	229	197	Hungry, Alert, Tired, Liking of Snack Options (index)

** Denotes pre-registration on Open Science Framework (OSF).

Note. Index of website perceptions was not included as a covariate when analyzing website perceptions as the outcome variable. Casewise deletion was used for covariates containing only partial data. Use of only pre-registered exclusion criteria does not substantially change results. Excluding covariates does not substantially change results.

25.0 Web Appendix Y (Essay 3). Mean Tables for Single-Paper Meta-Analyses

Web Appendix Y (Essay 3). Table 1 Willingness to Pay: Dollar Amount

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
3A	Time Scarcity	-.0472	1.0298	190.9692	57.5676	65
(self)	Control	-.0047	1.0263	193.5500	64.0415	26
3B	Time Scarcity	-.0679	.9073	189.8116	50.7170	69
(other)	Control	.0393	.9818	195.8077	57.3710	26
4	Time Scarcity	-.0270	.9777	82.0870	30.3044	23
	Control	.2156	.8929	89.6087	27.6763	23
5	Time Scarcity	.0211	.9864	120.3617	47.3734	47
	Control	.1452	1.3710	126.3191	65.8454	47
6	Time Scarcity	-.0210	1.0238	186.3962	55.3146	53
	Control	-.0979	.8857	182.2381	47.8523	42
7	Time Scarcity	.2223	1.1199	78.3538	40.2362	65
	Control	-.2125	.8236	62.7353	29.5916	68
8	Time Scarcity	.0771	1.0055	75.5410	32.2757	61
	Control	-.0747	.9970	70.6667	32.0045	63
12	Time Scarcity	-.0336	.9562	18.3243	9.5062	237
	Control	.0342	1.0437	18.9986	10.3763	233
13	Time Scarcity	.0252	1.0137	18.3754	9.4869	392
	Control	-.0534	.9709	17.6392	9.0864	185
14	Time Scarcity	.0127	1.0407	191.9055	91.3706	254
	Control	-.0883	1.0178	183.0400	89.3625	75
15	Time Scarcity	.0014	1.0383	663.5505	579.5549	307
	Control	-.0063	.8144	659.2754	454.5443	69
16*	Time Scarcity	-.0510	.9336	97.8462	53.7407	148
	Control	.2628	1.1419	115.9090	65.7352	72
17*	Time Scarcity	-.0912	.8719	99.5391	52.4044	171
	Control	.1166	1.1266	112.0260	67.7091	80
18*	Time Scarcity	-.0540	.9835	102.4829	53.3395	186
	Control	.1036	1.0078	111.0292	54.6544	88
19*	Time Scarcity	-.0963	.9927	99.9957	57.9039	203
	Control	.1901	1.0808	116.7006	63.0404	68
20	Time Scarcity	-.0432	.9954	101.9913	58.5507	180
	Control	-.0590	.8813	101.0589	51.8386	88
21*	Time Scarcity	-.0083	.9261	91.0617	50.0078	185
	Control	.1825	1.1193	101.3677	60.4436	84
24	Time Scarcity	-.1435	.7905	.0078	.0189	60
	Control	.0449	1.1525	.0123	.0275	60

Web Appendix Y (Essay 3). Table 2 Willingness to Pay: Subjective Rating

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
1	Time Scarcity	-.2228	1.1697	5.5308	1.4900	130
	Control	.1641	.8761	6.0236	1.1160	127
4	Time Scarcity	-.2188	1.0705	2.0435	1.2605	23
	Control	.0397	.8724	2.3478	1.0273	23
5	Time Scarcity	-.0656	1.0058	3.3191	1.6433	47
	Control	.0646	.9623	3.5319	1.5722	47

Web Appendix Y (Essay 3). Table 3 Willingness to Pay (Dollar Amount) by Time Remaining in Promotion

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
4	Time Scarcity (Short)	.	.	.	.	.
	Time Scarcity (Long)	-.0270	.9777	82.0870	30.3044	23
	Control	.2156	.8929	89.6087	27.6763	23
5	Time Scarcity (Short)	.	.	.	.	.
	Time Scarcity (Long)	.0211	.9864	120.3617	47.3734	47
	Control	.1452	1.3710	126.3191	65.8454	47
14	Time Scarcity (Short)	-.0292	1.0362	188.2303	90.9771	178
	Time Scarcity (Long)	.1107	1.0515	200.5132	92.3153	76
	Control	-.0883	1.0178	183.0400	89.3625	75
15	Time Scarcity (Short)[1]	.0387	1.0920	684.3462	609.5396	78
	Time Scarcity (Long)[1]	.0697	.8728	701.6538	487.1476	78
	Control	-.0063	.8144	659.2754	454.5443	69
16	Time Scarcity (Short)	-.0964	1.0535	95.2299	60.6442	74
	Time Scarcity (Long)	-.0055	.8006	100.4626	46.0878	74
	Control	.2628	1.1419	115.9090	65.7352	72
17	Time Scarcity (Short)	-.0640	.8943	101.1700	53.7498	84
	Time Scarcity (Long)	-.1174	.8541	97.9645	51.3342	87
	Control	.1166	1.1266	112.0260	67.7091	80
18	Time Scarcity (Short)	-.1178	.9581	99.0238	51.9571	89
	Time Scarcity (Long)	.0045	1.0078	105.6567	54.6526	97
	Control	.1036	1.0078	111.0292	54.6544	88
19	Time Scarcity (Short)	-.1646	.9608	96.0120	56.0392	107
	Time Scarcity (Long)	-.0202	1.0269	104.4359	59.8951	96
	Control	.1901	1.0808	116.7006	63.0404	68
20	Time Scarcity (Short)	-.1388	.9798	96.3662	57.6329	101
	Time Scarcity (Long)	.0791	1.0080	109.1829	59.2916	79
	Control	-.0590	.8813	101.0589	51.8386	88
21	Time Scarcity (Short)	.0158	.9131	92.3630	49.3105	96
	Time Scarcity (Long)	-.0343	.9443	89.6580	50.9914	89
	Control	.1825	1.1193	101.3677	60.4436	84

[1] When a study contained multiple short and long online time scarcity conditions, the briefest option for each condition was used. Thus, in Study 15 the shorter time scarcity condition displayed 12 minutes remaining (vs. 48 minutes), and the longer time scarcity condition displayed 3 hours and 12 minutes remaining (vs. 15 hours and 12 minutes).

Note. "Shorter" online time scarcity promotions displayed less than one hour remaining in the promotion, whereas "longer" online time scarcity promotions displayed more than one hour remaining in the promotion.

Web Appendix Y (Essay 3). Table 4 Purchase Intentions

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
1	Time Scarcity	-.0278	.9754	5.7769	1.9619	130
	Control	.0361	.9952	5.9055	2.0017	127
3A	Time Scarcity	-.0830	.9802	4.0462	2.0648	65
(self)	Control	.0411	1.0293	4.3077	2.1683	26
3B	Time Scarcity	.0327	1.0680	4.2899	2.2498	69
(other)	Control	.0777	.9502	4.3846	2.0015	26
4	Time Scarcity	.4005	1.0175	4.7826	2.1523	23
	Control	-.3395	.8782	3.2174	1.8576	23
5	Time Scarcity	.0788	1.0044	5.9362	2.0044	47
	Control	-.3370	1.0718	5.1064	2.1390	47
6	Time Scarcity	.1238	.9936	5.0755	2.3846	53
	Control	-.1457	.9255	4.4286	2.2212	42
11	Time Scarcity	-.1042	1.0620	4.8444	2.0163	90
	Control	.0948	.9354	5.2222	1.7760	99
14	Time Scarcity	-.0014	.9731	5.7205	2.0130	254
	Control	-.0016	1.0440	5.7200	2.1596	75
15	Time Scarcity	-.0155	.9954	4.8436	2.3588	307
	Control	.0689	1.0246	5.0435	2.4280	69

Web Appendix Y (Essay 3). Table 5 Online Purchase

Study	Factor 1	Unstzd M	Unstzd SD	n
24	Time Scarcity	.2333	.4265	60
(Website Access)	Control	.2667	.4459	60
26	Time Scarcity	.2605	.4408	119
(Snacks)	Control	.3714	.4867	70

Note. Because outcome of interest was a proportion, values were not standardized prior to conducting SPM analysis.

Web Appendix Y (Essay 3). Table 6 Product Desirability

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
1	Time Scarcity	-.0581	1.0052	5.3769	1.2025	130
	Control	.0678	1.0731	5.5276	1.2838	127
4	Time Scarcity	-.0798	1.0022	4.0870	1.4744	23
	Control	.1567	.7621	4.4348	1.1211	23
5	Time Scarcity	-.2601	1.0428	5.4255	1.0161	47
	Control	-.3256	1.0358	5.3617	1.0092	47
7	Time Scarcity	.0793	.9354	5.1385	1.4564	65
	Control	-.0758	1.0594	4.8971	1.6494	68
8	Time Scarcity	-.0871	1.0602	5.0000	1.5706	61
	Control	.0843	.9389	5.2540	1.3908	63
15	Time Scarcity	-.0166	.9830	5.8762	1.1872	307
	Control	.0739	1.0767	5.9855	1.3004	69

Web Appendix Y (Essay 3). Table 7 Product Quality

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
1	Time Scarcity	-.0253	.9872	5.4385	1.0268	130
	Control	.0528	1.0687	5.5197	1.1116	127
3A	Time Scarcity	-.1875	1.0933	5.3692	1.0690	65
(self)	Control	-.1324	1.0093	5.4231	.9868	26
3B	Time Scarcity	.1019	.9579	5.6522	.9366	69
(other)	Control	-.0144	.8789	5.5385	.8593	26
4	Time Scarcity	-.2850	.8460	4.9565	.7674	23
	Control	-.5247	.8930	4.7391	.8100	23
5	Time Scarcity	-.2159	.9764	5.4894	.9526	47
	Control	-.4340	1.0405	5.2766	1.0151	47
6	Time Scarcity	-.0823	1.1062	5.7736	1.1543	53
	Control	.0434	1.0753	5.9048	1.1221	42
7	Time Scarcity	-.0002	.9816	5.3231	1.1873	65
	Control	.0002	1.0245	5.3235	1.2392	68
8	Time Scarcity	-.0079	.9289	5.4262	1.0872	61
	Control	.0077	1.0718	5.4444	1.2544	63
15	Time Scarcity	-.0302	1.0363	5.9511	1.0389	307
	Control	.1342	.8121	6.1159	.8141	69

Web Appendix Y (Essay 3). Table 8 Persuasion Knowledge Activation

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n	wi
3A	Time Scarcity	.2418	.9806	5.5846	.9323	65	1
(self)	Control	-.3893	.9216	4.9846	.8762	26	2
3B	Time Scarcity	-.0530	.8959	5.3043	.8517	69	3
(other)	Control	-.0576	1.0137	5.3000	.9637	26	4
9	Time Scarcity	-.0000000013	1.0000	5.7617	.7467	47	5
	Control	-.0000000027	1.0000	4.4170	.8616	47	5
10	Time Scarcity	.0000000087	1.0000	5.5781	1.0026	265	6
	Control	-.0000000054	1.0000	3.8958	1.1256	265	6

Note. Covariance for study 9: .0981 (unstandardized); .1524 (standardized). Covariance for study 10: .0483 (unstandardized); .0428 (standardized).

Web Appendix Y (Essay 3). Table 9 Perceiving Retailer as Opponent

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
3A	Time Scarcity	.2002	1.0926	3.3667	1.2336	65
(self)	Control	-.1075	.7925	3.0192	.8948	26
3B	Time Scarcity	.0830	.9955	3.2343	1.1240	69
(other)	Control	-.1302	.7872	2.9936	.8888	26
4	Time Scarcity	-.2898	1.0504	2.9493	1.1320	23
	Control	-.0747	.8275	3.1812	.8918	23
5	Time Scarcity	.0959	1.1018	2.6950	1.3037	47
	Control	.1498	1.0442	2.7589	1.2355	47
6	Time Scarcity	-.0626	.9825	2.7421	1.1480	53
	Control	.0120	1.0517	2.8294	1.2289	42
7	Time Scarcity	.0861	1.0380	2.9846	1.3106	65
	Control	-.0823	.9627	2.7721	1.2155	68
8	Time Scarcity	.1659	1.0553	3.0301	1.2688	61
	Control	-.1606	.9235	2.6376	1.1102	63

Web Appendix Y (Essay 3). Table 10 General Product Scarcity Perceptions

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
1	Time Scarcity	.1320	1.0182	2.4154	1.3106	130
	Control	-.1111	.9681	2.1024	1.2462	127
3A	Time Scarcity	.1897	1.0629	2.6615	1.4714	65
(self)	Control	.0175	1.1224	2.4231	1.5537	26
3B	Time Scarcity	.1411	1.1444	2.5942	1.5841	69
(other)	Control	-.2048	.8983	2.1154	1.2434	26
4	Time Scarcity	.1122	.9818	2.3043	1.0632	23
	Control	-.0484	1.0892	2.1304	1.1795	23
5	Time Scarcity	-.0282	1.0994	2.3617	1.4953	47
	Control	-.1064	.9632	2.2553	1.3100	47
6	Time Scarcity	.0499	1.1151	2.6226	1.7122	53
	Control	.0941	1.0617	2.6905	1.6303	42
7	Time Scarcity	.0593	.9939	3.2923	1.4971	65
	Control	-.0567	1.0099	3.1176	1.5213	68
8	Time Scarcity	.0794	1.0879	3.6230	1.6849	61
	Control	-.0769	.9090	3.3810	1.4077	63
11	Time Scarcity	.0332	1.0546	2.9556	1.6139	90
	Control	-.0302	.9520	2.8586	1.4569	99
14	Time Scarcity	.0104	1.0218	2.1850	1.2735	254
	Control	-.0204	.8917	2.1467	1.1113	75
15	Time Scarcity	-.0141	1.0091	2.5016	1.4058	307
	Control	.0627	.9632	2.6087	1.3418	69
16	Time Scarcity	.0424	1.0558	2.6284	1.5574	148
	Control	.0966	1.0578	2.7083	1.5604	72
17	Time Scarcity	-.0438	.9430	2.6199	1.3726	171
	Control	.0284	1.0368	2.7250	1.5093	80
18	Time Scarcity	.0243	1.0663	2.6237	1.5061	186
	Control	.0172	.9863	2.6136	1.3932	88
19	Time Scarcity	.0567	.9806	2.6847	1.4382	203
	Control	.1012	1.0429	2.7500	1.5296	68
20	Time Scarcity	.1511	1.0118	2.7833	1.4809	180
	Control	-.3221	.9187	2.0909	1.3445	88
21	Time Scarcity	.1398	1.0225	2.8000	1.5065	185
	Control	-.1123	.9900	2.4286	1.4585	84

Web Appendix Y (Essay 3). Table 11 Perceived Time Remaining to Purchase Product

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
3A	Time Scarcity	-.3172	.8988	2.7231	1.2810	65
(self)	Control	.6327	.8401	4.0769	1.1974	26
3B	Time Scarcity	-.4381	.7755	2.5507	1.1053	69
(other)	Control	.8486	.8437	4.3846	1.2026	26
6	Time Scarcity	-.5029	.8152	2.3962	1.3205	53
	Control	.6489	.8301	4.2619	1.3445	42
7	Time Scarcity	-.5319	.9565	2.3538	1.4730	65
	Control	.5084	.7479	3.9559	1.1517	68
8	Time Scarcity	-.6239	.9229	2.1311	1.2971	61
	Control	.6041	.6371	3.8571	.8955	63
11	Time Scarcity	-.5652	.8414	2.2000	1.3171	90
	Control	.5138	.8458	3.8889	1.3239	99
16	Time Scarcity	-.3124	.9158	2.2973	1.3725	148
	Control	.3697	.7826	3.3194	1.1728	72
17	Time Scarcity	-.2678	.9347	2.3743	1.3592	171
	Control	.4118	.8493	3.3625	1.2350	80
18	Time Scarcity	-.3069	.9531	2.3065	1.3587	186
	Control	.4984	.7362	3.4545	1.0495	88
19	Time Scarcity	-.2173	.9406	2.3990	1.3871	203
	Control	.5192	.9261	3.4853	1.3658	68
20	Time Scarcity	-.2987	.9448	2.3778	1.4729	180
	Control	.6836	.9105	3.9091	1.4194	88
21	Time Scarcity	-.3147	1.0149	2.4000	1.6590	185
	Control	.4675	.7487	3.6786	1.2239	84

Web Appendix Y (Essay 3). Table 12 Retail Website Perceptions

Study	Factor 1	Stzd M	Stzd SD	Unstzd M	Unstzd SD	n
1	Time Scarcity	-.0698	1.1261	3.8487	.7552	130
	Control	.0696	.9395	3.9423	.6301	127
3A	Time Scarcity	.1303	.8500	3.9128	.5213	65
(self)	Control	-.1038	.9447	3.7692	.5794	26
3B	Time Scarcity	-.0741	.9729	3.7874	.5968	69
(other)	Control	.0007	1.0454	3.8333	.6412	26
4	Time Scarcity	.2852	.9483	3.9565	.6301	23
	Control	-.2601	.9680	3.5942	.6432	23
5	Time Scarcity	.0126	.9151	4.0780	.5698	47
	Control	-.2038	1.0065	3.9433	.6268	47
6	Time Scarcity	.0471	1.0588	4.2893	.6306	53
	Control	-.0122	.8898	4.2540	.5299	42
7	Time Scarcity	.0786	1.0314	4.0821	.7145	65
	Control	-.0752	.9707	3.9755	.6724	68
8	Time Scarcity	-.0855	1.0317	3.9617	.6239	61
	Control	.0828	.9693	4.0635	.5862	63
11	Time Scarcity	-.1925	1.0621	3.6667	.8465	90
	Control	.1750	.9105	3.9596	.7257	99
12	Time Scarcity	.0257	.9633	3.6765	.6606	237
	Control	-.0262	1.0374	3.6409	.7114	233
13	Time Scarcity	.0102	.9825	3.6599	.6797	392
	Control	-.0216	1.0384	3.6378	.7184	185
14	Time Scarcity	-.0272	.9762	3.6877	.6794	254
	Control	-.0127	1.0058	3.6978	.7000	75
15	Time Scarcity	-.0540	1.0141	3.8545	.6843	307
	Control	.2403	.9030	4.0531	.6094	69
16	Time Scarcity	-.0351	1.0859	3.7883	.7571	148
	Control	.1490	.7934	3.9167	.5531	72
17	Time Scarcity	-.1021	1.0256	3.7388	.7272	171
	Control	.2075	.9620	3.9583	.6820	80
18	Time Scarcity	-.0083	.9355	3.7957	.6083	186
	Control	.0030	1.0241	3.8030	.6660	88
19	Time Scarcity	.0042	1.0066	3.7767	.7156	203
	Control	.1804	1.0565	3.9020	.7510	68
20	Time Scarcity	-.0062	1.0237	3.7796	.7997	180
	Control	-.0829	.9373	3.7197	.7322	88
21	Time Scarcity	-.0999	.9987	3.6613	.7302	185
	Control	.2982	.9707	3.9524	.7097	84

26.0 Web Appendix Z (Essay 3). Items Used in Single-Paper Meta-Analyses

Web Appendix Z (Essay 3). Table 1 Willingness to Pay (Dollar Amount)

Study	Item	Response Options
3A (self)	How much would you be willing to pay for this tablet? ($ US Dollars)	sliding scale: $0 – $600 (additional labels every $60)
3B (other)	How much would you be willing to pay for this tablet? ($ US Dollars)	**same as Study 3A*
4	Average air purifiers from this brand have been seen selling on this discount website for approximately $119. How much would you be willing to pay for this air purifier? ($ US Dollars)	**same as Study 3A*
5	Average air purifiers from this brand have been seen selling on this discount website for approximately $119. How much would you be willing to pay for this air purifier? ($ US Dollars)	**same as Study 3A*
6	On average, tablets from this brand have been seen selling on this website for approximately $250 (US Dollars). How much would you be willing to pay for this tablet? ($ US Dollars)	**same as Study 3A*
7	How much would you be willing to pay for this product? ($ US Dollars)	sliding scale: $0 – $300 (additional labels every $50)
8	How much would you be willing to pay for this product? ($ US Dollars)	**same as Study 7*
12	How much would you be willing to pay for this product?	sliding scale: $0 – $50 (additional labels every $12.50)
13	How much would you be willing to pay for this product?	**same as Study 12*
14	How much would you be willing to pay for this tablet?	**same as Study 3A*
15	How much, specifically, would you be willing to pay for this QLED TV? (after any discounts are applied) (please type only a whole number; don't put the "$" symbol)	$ _____
16	How much would you be willing to pay for this product?	sliding scale: $0 – $400 (additional labels every $100)
17	How much would you be willing to pay for this product?	**same as Study 16*
18	How much would you be willing to pay for this product?	**same as Study 16*
19	How much would you be willing to pay for this product?	**same as Study 16*
20	How much would you be willing to pay for this product?	**same as Study 16*
21	How much would you be willing to pay for this product?	**same as Study 16*
24	How much of your bonus would you like to spend to access the specialty gift curations website immediately after this question?	Options for each $.01 value from $.00 to $.10

Web Appendix Z (Essay 3). Table 2 Willingness to Pay (Subjective Rating)

Study	Item	Response Options
1	Average tablets from this brand have been seen selling on this discount website for approximately $119 (US Dollars). How much would you be willing to pay for the tablet?	**same for all studies* 7-point scale (1 – Much Less than $119, 2 – Less than $119, 3 – A Little Less than $119, 4 – Exactly $119, 5 – A Little More than $119, 6 – More than $119, 7 – Much More than $119)
4	Average air purifiers from this brand have been seen selling on this discount website for approximately $119 (US Dollars). How much would you be willing to pay for this air purifier?	
5	Average air purifiers from this brand have been seen selling on this discount website for approximately $119 (US Dollars). How much would you be willing to pay for this air purifier?	

Web Appendix Z (Essay 3). Table 3 Purchase Intentions

Study	Item	Response Options
1	How likely would you be to buy this tablet for your significant other right now?	**same for all studies* 7-point scale (1 –Very Unlikely, 7 –Very Likely)
3A (self)	How likely are you to buy this tablet right now?	
3B (other)	How likely are you to buy this tablet right now?	
4	How likely would you be to buy this air purifier for your significant other right now?	
5	How would you be to buy this air purifier for your significant other right now?	
6	How likely are you to buy this tablet right now?	
11	How likely are you to purchase this product?	
14	How likely would you be to buy this tablet for your significant other right now?	
15	How likely would you be to buy this TV right now?	

Web Appendix Z (Essay 3). Table 4 Online Purchase

Study	Item	Response Options
24	How much of your bonus would you like to spend to access the specialty gift curations website immediately after this question?	Options for each $.01 value from $.00 to $.10; Coded as: $.00 (decision not to purchase) = 0 $.01 – $.10 (decision to purchase) = 1
26	Do you want to purchase 3 snacks (of your choice) for $1?	Don't Buy = 0; Buy = 1

Web Appendix Z (Essay 3). Table 5 Product Desirability

Study	Item	Response Options
1	Overall, how desirable is this tablet?	**same for all studies* 7-point scale (1 – Not at All Desirable, 7 – Extremely Desirable)
4	Overall, how desirable is this air purifier?	
5	Overall, how desirable is this air purifier?	
7	How desirable is this product?	
8	How desirable is this product?	
15	Overall, how desirable is this TV?	

Web Appendix Z (Essay 3). Table 6 Product Quality

Study	Item	Response Options
1	How would you rate the quality of this tablet?	**same for all studies* 7-point scale (1 – Very Poor Quality, 7 – Very High Quality)
3A (self)	How would you rate the quality of this tablet?	
3B (other)	How would you rate the quality of this tablet?	
4	How would you rate the quality of this air purifier?	
5	How would you rate the quality of this air purifier?	
6	How would you rate the quality of this tablet?	
7	How would you rate the quality of this product?	
8	How would you rate the quality of this product?	
15	How would you rate the quality of this TV?	

Web Appendix Z (Essay 3). Table 7 Persuasion Knowledge Activation

Study	*α*	Items	Response Options
3A (self)	.7840	Mean Index of 5 Items: • When looking at the discounted tablet, it was pretty obvious that the retailer was trying to persuade me. • The purpose of how the deal was presented was to influence my behavior. • It was clear that the retailer was trying to get me to buy the product. • I'm skeptical how good this deal is. • This promotion used manipulative persuasion tactics.	**same for all items* **same for all studies* 7-point scale (1 – Strongly Disagree, 7 – Strongly Agree)
3B (other)	.7690		
9	.6214		
10	.6970		

Note. For studies 9 and 10, which used a within-subjects time scarcity manipulation, the reported α in the table is for all persuasion knowledge item across both retailers. When calculating persuasion knowledge index separately for each retailer, the estimates do not substantively change for either the retailer using time using time scarcity (study 9: α = .5970; study 10: α = .7616) or the retailer not using time scarcity (study 9: α = .6377; study 10: α = .7665)

Web Appendix Z (Essay 3). Table 8 Perceiving Retailer as Opponent

Study	α	Items	Response Options
3A (self) 3B (other) 4 5 6 7 8	.8564 .8161 .8310 .8911 .8717 .8941 .8952	Mean Index of 6 Items: • The retailer is trying to rip me off. • I don't trust this retailer. • I want to "beat" the retailer by finding a better deal elsewhere. • This retailer feels like an adversary. • Purchasing the tablet from this retailer would feel like "giving in." • Purchasing the product feels like a contest: me vs. the retailer.	*same for all items *same for all studies 7-point scale (1 – Strongly Disagree, 7 – Strongly Agree)

Web Appendix Z (Essay 3). Table 9 General Product Scarcity Perceptions

Study	Item	Response Options
1	How scarce do you think this tablet is?	7-point scale (1 – Not at All Scarce, 7 – Extremely Scarce)
3A (self)	How scarce is this tablet?	*same as Study 1
3B (other)	How scarce is this tablet?	*same as Study 1
4	How scarce do you think this air purifier is?	*same as Study 1
5	How scarce do you think this air purifier is?	*same as Study 1
6	How scarce is this tablet?	*same as Study 1
7	How scarce is this product?	*same as Study 1
8	How scarce is this product?	*same as Study 1
11	How scarce is this product?	*same as Study 1
12	The number of products remining in this promotion is scarce.	sliding scale: 1 – 100 (1 – Not at All, 100 – Very Much)
13	The number of products remining in this promotion is scarce.	*same as Study 12
14	How scarce do you think this tablet is?	*same as Study 1
15	How scarce do you think this TV is?	*same as Study 1
16	How scarce is this product?	*same as Study 1
17	How scarce is this product?	*same as Study 1
18	How scarce is this product?	*same as Study 1
19	How scarce is this product?	*same as Study 1
20	How scarce is this product?	*same as Study 1
21	How scarce is this product?	*same as Study 1

Note. Due to different response scales used, Studies 12 and 13 were not included in primary SPM Analysis.

Web Appendix Z (Essay 3). Table 10 Perceived Time Remaining to Purchase Product

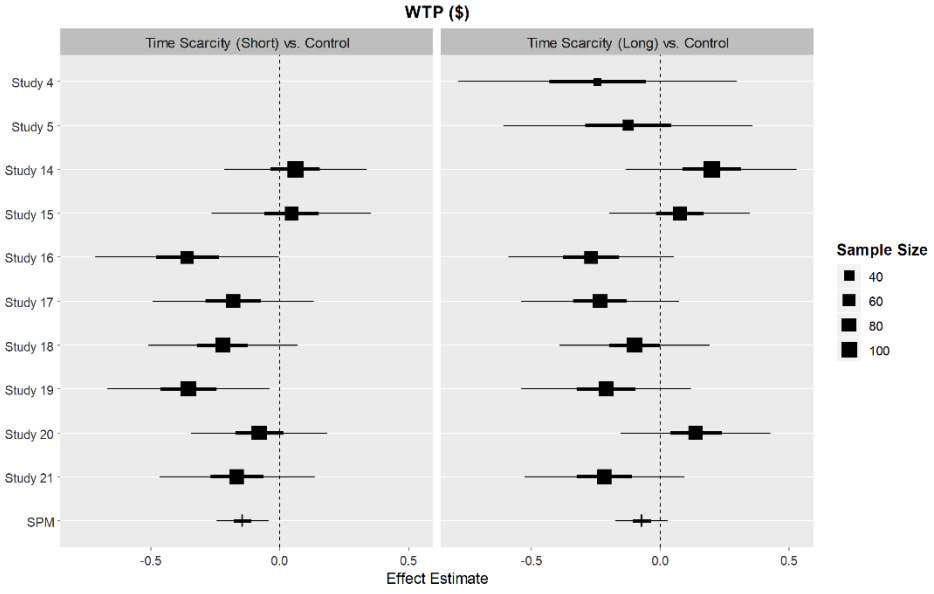
Study	Item	Response Options
1	How long (in hours) do you expect the discount offer you were shown to be available?	sliding scale: 0 – 100 (additional labels every 10 hours)
3A (self)	How much time is left to purchase this tablet?	7-point scale (1 – Not Long at All, 7 – Extremely Long)
3B (other)	How much time is left to purchase this tablet?	**same as Study 3A*
6	How much time is left to purchase this tablet?	**same as Study 3A*
7	How much time is left to purchase this product?	**same as Study 3A*
8	How much time is left to purchase this product?	**same as Study 3A*
11	How much time is left to purchase this product?	**same as Study 3A*
12	The amount of time remaining in this promotion is scarce.	sliding scale: 1 – 100 (1 – Not at All, 100 – Very Much)
13	The amount of time remaining in this promotion is scarce.	**same as Study 12*
14	How long (in minutes) do you expect the discount offer you were shown to be available?	**converted into hours metric* Hours(s): _____ Minutes(s): _____
15	How long (in minutes) do you expect the discount offer you were shown to be available?	**same as Study 14*
16	How much time is left to purchase this product?	**same as Study 3A*
17	How much time is left to purchase this product?	**same as Study 3A*
18	How much time is left to purchase this product?	**same as Study 3A*
19	How much time is left to purchase this product?	**same as Study 3A*
20	How much time is left to purchase this product?	**same as Study 3A*
21	How much time is left to purchase this product?	**same as Study 3A*

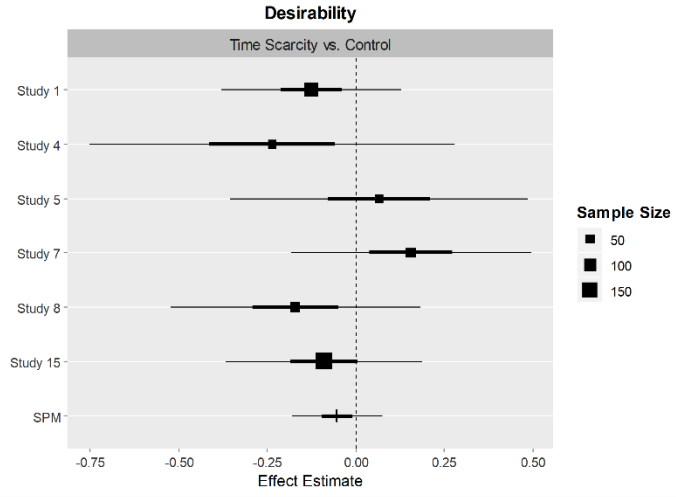
Note. Due to different response scales used, Studies 1, 12, 13, 14, and 15 were not included in primary SPM Analysis.

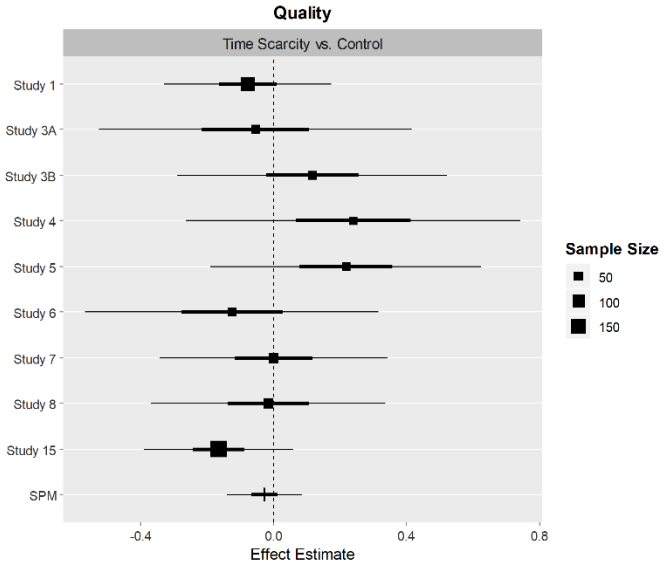
Web Appendix Z (Essay 3). Table 11 Retail Website Perceptions

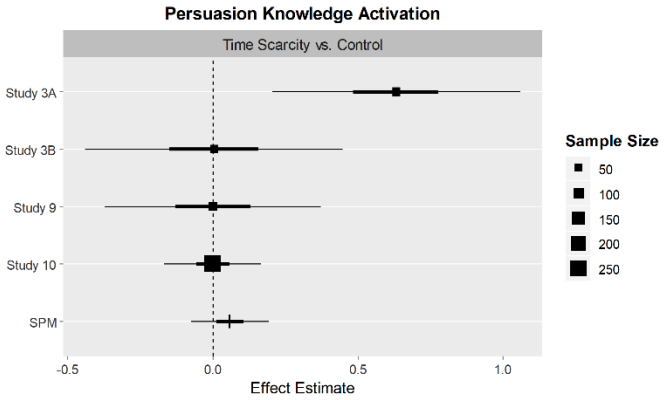
Study	α	Items	Response Options
1	.7939	Mean Index of 3 Items: • This website is professional. • This website is easy to understand. • This website is visually attractive.	**same for all items* **same for all studies* 5-point scale (1 – Strongly Disagree, 5 – Strongly Agree)
3A (self)	.6392		
3B (other)	.7177		
4	.6382		
5	.7792		
6	.8116		
7	.8507		
8	.7594		
11	.7860		
12	.7073		
13	.6820		
14	.7665		
15	.7512		
16	.7301		
17	.7253		
18	.6891		
19	.7080		
20	.7750		
21	.7069		

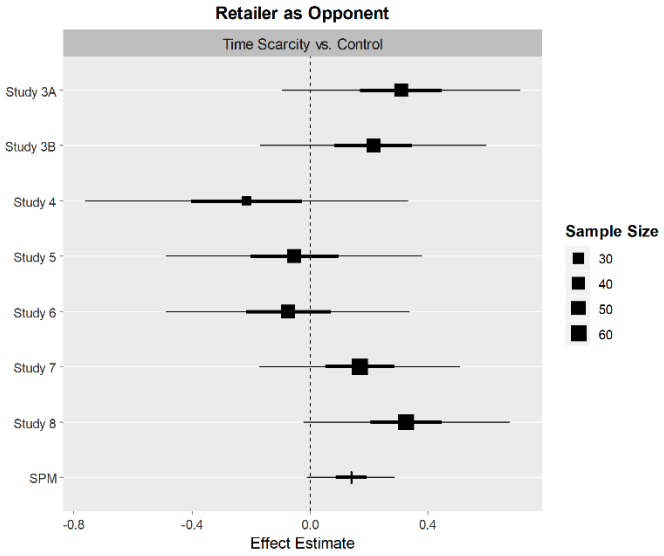
27.0 Web Appendix AA (Essay 3). Additional Visuals Depicting SPM Results

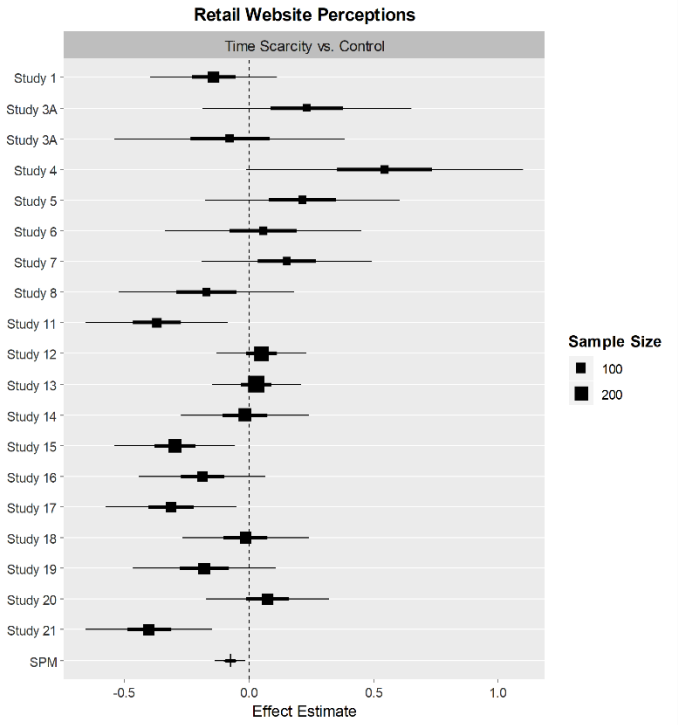





Quality
Time Scarcity vs. Control
Study 1
Study 3A
Study 3B
Study 4
Study 5
Study 6
Study 7
Study 8
Study 15
SPM
-0.4
0.0
0.4
0.8
Effect Estimate
Sample Size
50
100
150


Persuasion Knowledge Activation
Time Scarcity vs. Control
Study 3A
Study 3B
Study 9
Study 10
SPM
-0.5
0.0
0.5
1.0
Effect Estimate
Sample Size
50
100
150
200
250


Retailer as Opponent
Time Scarcity vs. Control
Study 3A
Study 3B
Study 4
Study 5
Study 6
Study 7
Study 8
SPM
-0.8
-0.4
0.0
0.4
Effect Estimate
Sample Size
30
40
50
60



Note. Single-study effect estimates are represented by squares; Single-Paper Meta-Analysis (SPM) estimate is represented by vertical bar. Thick and thin lines represent the 50% and 95% confidence intervals, respectively. Square size reflects the average sample size per condition in each study.