# For Online Publication

Web Appendix D. Descriptive Analyses: Complete Results From the Wave-1 Sample

Part I of this appendix reports all the main text figures and tables after restricting to the wave 1 sample. Part II reports all the additional tables and figures from Appendix C after restricting to the wave 1 sample.
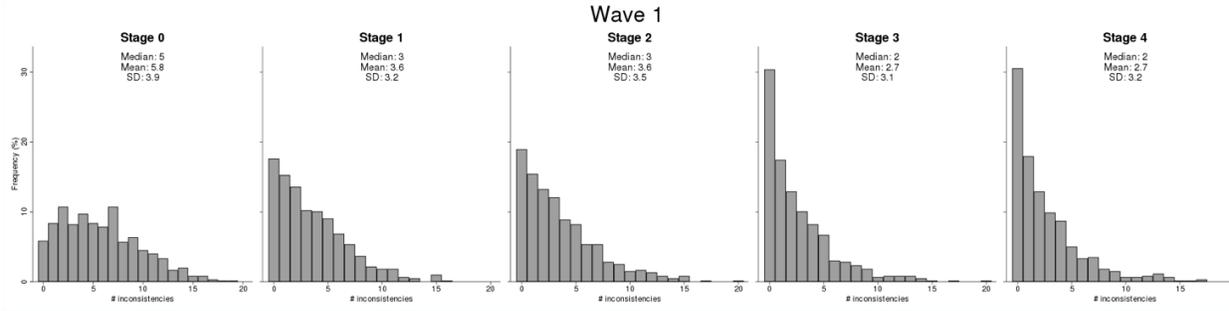
Part I

**Figure D.5.1: Flow chart for the inconsistency reconsideration procedure**
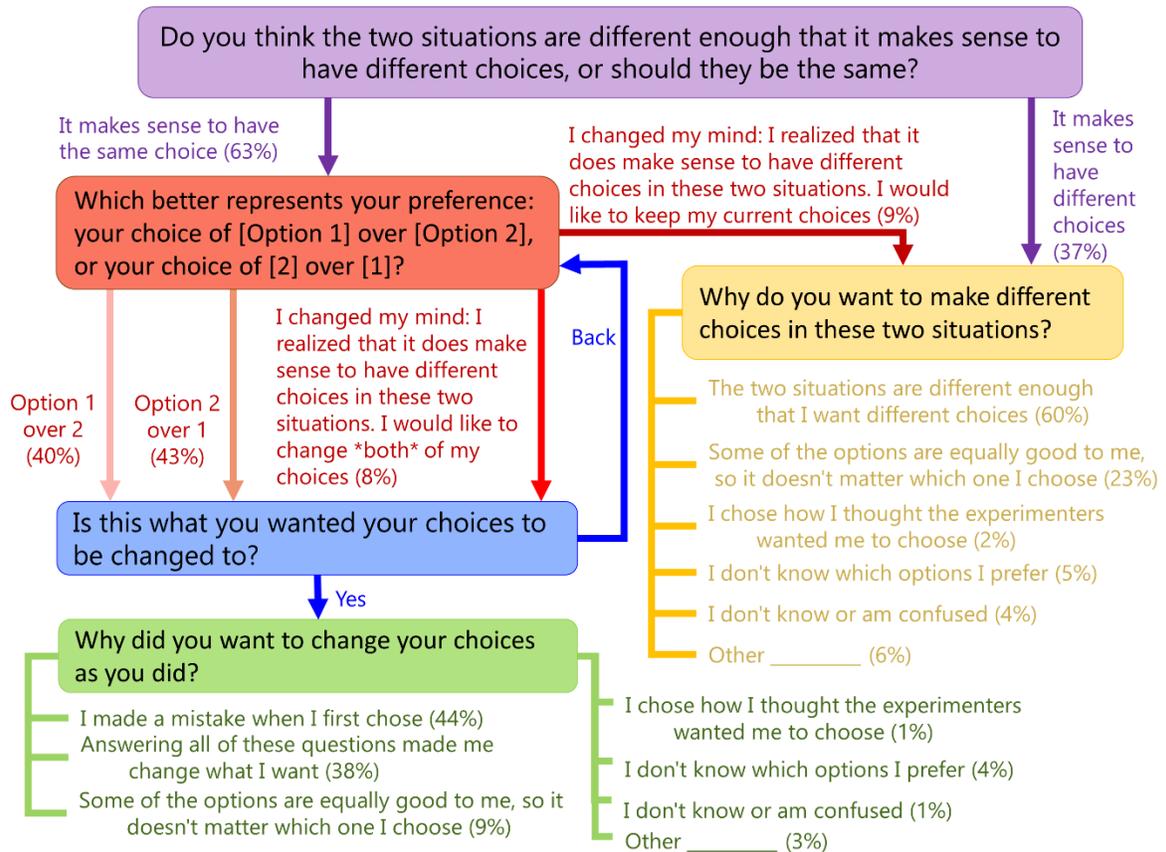
Note: The numbers in parentheses are frequencies of each choice across all instances of inconsistencies (not including placebos) in the Wave 1 sample, with the exception of the responses to "why did you want to change your choices as you did" and "why do you want to change your choices as you did." For those two questions, version 1 of the experiment collected open-ended responses rather than multiple-choice responses. Thus, the percentages for those two questions are only for individuals in version 2.

Figure D.6: Histograms of number of inconsistencies and intransitivities
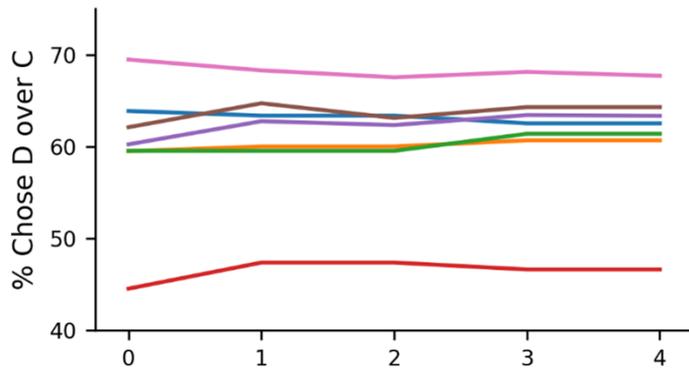
(A) Inconsistencies

(B) Intransitivities
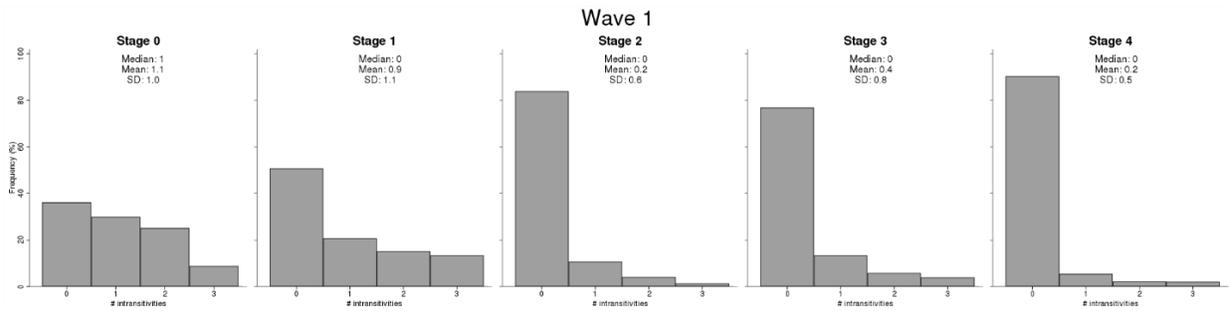
Note: Wave 1 sample.

Figure D.7.1: Percentage of participants who make the risky choice in simple lotteries

(A) C versus D

(B) E versus F
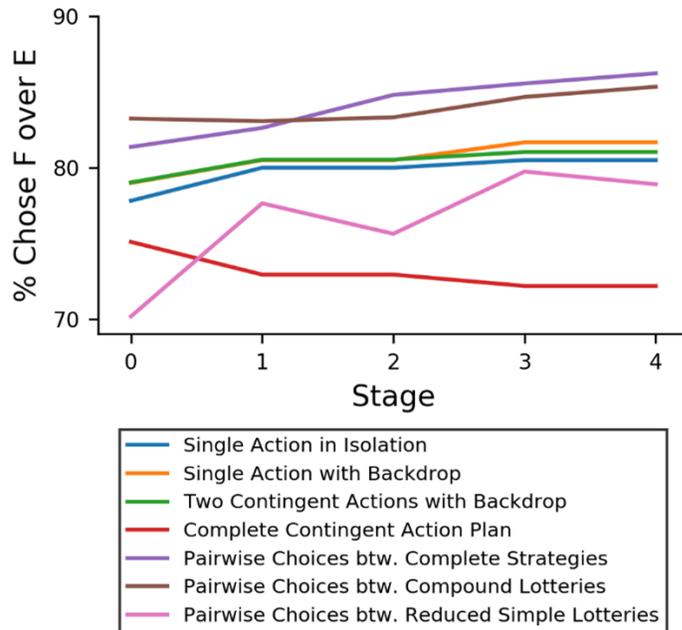
Legend:
- Single Action in Isolation
- Single Action with Backdrop
- Two Contingent Actions with Backdrop
- Complete Contingent Action Plan
- Pairwise Choices btw. Complete Strategies
- Pairwise Choices btw. Compound Lotteries
- Pairwise Choices btw. Reduced Simple Lotteries

Note: Wave 1 sample. For each of the three pairwise frames, the top panel reports the average from the two questions eliciting BCE vs. BDE and BCF vs. BDF, and bottom panel reports the average from the two questions eliciting BCE vs. BCF and BDE vs. BDF. Standard errors around each plotted point are roughly 1-3 percentage points (not shown to avoid cluttering the figure).

Table D.1: Responses after not revising an inconsistency

Axiom	Different Situation	Indiff	Expt'er Demand	IDK	Confused	Other	#Obs
Irrelevance of Background Counterfactuals	63.9%	14.8%	3.3%	6.6%	8.2%	3.3%	61
Simple Actions = State-Contingent Actions	77.3	10.7	1.3	1.3	8.0	1.3	75
Irrelevance of Counterfactual Choices	56.6	15.1	1.9	15.1	5.7	5.7	53
Fusion + Shift from Nodewise to Pairwise	62.7	18.3	1.4	8.5	5.6	3.5	142
Complete Strategies = Implied Lotteries	57.9	24.9	1.8	6.0	2.9	6.5	385
Reduction of Compound Lotteries	58.6	26.4	1.8	2.5	3.6	7.2	447
Overall	60.3	22.8	1.8	5.1	4.2	5.9	1163

Note: Wave 1 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why do you want to make different choices in these two situations?" after not revising an inconsistency are: "The two situations are different enough that I want different choices", "Some of the options are equally good to me, so it doesn't matter which one I choose", "I chose how I thought the experimenters wanted me to choose", "I don't know which options I prefer", "I don't know or am confused", or "Other". Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.2: Responses after revising an inconsistency

Axiom	Made Mistake	Learned	Indiff	Expt'er Demand	IDK	Confused	Other	#Obs
Irrelevance of Background Counterfactuals	46.7%	28.3%	11.7%	3.3%	1.7%	1.7%	6.7%	60
Simple Actions = State-Contingent Actions	36.6	34.2	12.2	0.0	9.8	2.4	4.9	41
Irrelevance of Counterfactual Choices	100.0	0.0	0.0	0.0	0.0	0.0	0.0	1
Fusion + Shift from Nodewise to Pairwise	47.3	23.6	12.7	1.8	9.1	5.5	0.0	55
Complete Strategies = Implied Lotteries	42.8	37.9	9.4	1.6	4.4	1.2	2.8	435
Reduction of Compound Lotteries	44.4	39.9	8.8	1.0	2.6	0.5	2.8	611
Overall	43.8	37.7	9.5	1.3	3.7	1.1	2.9	1203

Note: Wave 1 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why did you want to change your choices as you did?" after not revising an inconsistency are: "I made a mistake when I first chose", "Answering all of these questions made me change what I want", "Some of the options are equally good to me, so it doesn't matter which one I choose", "I chose how I thought the experimenters wanted me to choose", "I don't know which options I prefer", "I don't know or am confused", and "Other". Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.3: Responses after not revising an intransitivity

Frame	Indiff	IDK	Real Intransitivity	Too Hard	Other	#Obs
Pairwise Choices between Complete Strategies	2.4%	33.3%	11.9%	2.4%	50.0%	42
Pairwise Choices Between Compound Lotteries	2.3	39.5	7.0	14.0	37.2	43
Pairwise Choices Between Reduced Simple Lotteries	4.2	35.4	14.6	6.3	39.6	48
Total	3.0	36.1	11.3	7.5	42.1	133

Note: Wave 1 sample. Percentages are averages across all stages in both waves. The full text of the responses to the question "Why couldn't you rank these options?" after not revising an intransitivity are: "I couldn't rank the options because they are all equally good to me", "I couldn't rank the options because I don't know which option I prefer", "I feel like Ian Trantivi on the game show. Remember Ian's story from earlier in the survey: he won a prize, and could choose between three piles of stuff, but he prefers the first pile to the second, the second pile to the third, and the third pile to the first", "I should be able to rank the options, but it's extremely hard", and "I couldn't rank the options for another reason". Among the three pairwise frames, when facing an intransitivity, the percentage of the time that participants did not revise was 31.6%, 34.7%, and 34.0%, respectively. Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.6: Direction of revising inconsistencies

Axiom	Choose Frame j	Choose Frame $j+1$	p-value $j = j+1$	No Update	Swap	#Obs
Choice in frame j was riskier						
Irrelevance of Background Counterfactuals	**25.0%**	16.2%	0.1091	57.4%	1.5%	136
Simple Actions = State-Contingent Actions	**23.0**	11.5	0.0302	62.3	3.3	122
Irrelevance of Counterfactual Choices	16.0	**26.9**	0.0685	52.9	4.2	119
Fusion + Shift from Nodewise to Pairwise	**22.1**	13.7	0.1089	58.0	6.1	131
Complete Strategies = Implied Lotteries	**29.9**	21.6	0.0075	43.5	5.1	529
Reduction of Compound Lotteries	**36.6**	17.4	<0.0001	40.1	5.9	725
Overall	**30.2**	18.5	<0.0001	46.2	5.1	1762
Choice in frame $j+1$ was riskier						
Irrelevance of Background Counterfactuals	7.5	**27.4**	0.0004	57.5	7.5	106
Simple Actions = State-Contingent Actions	13.2	**14.9**	0.7253	66.7	5.3	114
Irrelevance of Counterfactual Choices	**34.2**	17.5	0.0127	43.9	4.4	114
Fusion + Shift from Nodewise to Pairwise	20.3	**24.8**	0.3184	49.5	5.4	222
Complete Strategies = Implied Lotteries	15.8	**37.5**	<0.0001	42.0	4.7	576
Reduction of Compound Lotteries	23.7	**28.1**	0.1443	43.5	4.6	565
Overall	19.6	**29.2**	<0.0001	46.3	4.9	1697
Choices in frames j and $j+1$ were not risk-ranked						
Irrelevance of Background Counterfactuals	-	**-**	-	-	-	0
Simple Actions = State-Contingent Actions	-	**-**	-	-	-	0
Irrelevance of Counterfactual Choices	21.2	**27.3**	0.6245	48.5	3.0	33
Fusion + Shift from Nodewise to Pairwise	**22.6**	18.9	0.6740	50.9	7.5	53
Complete Strategies = Implied Lotteries	23.7	**26.3**	0.6093	45.3	4.7	190
Reduction of Compound Lotteries	**33.3**	18.4	0.0016	41.7	6.6	228
Overall	**27.8**	22.0	0.0671	44.4	5.8	504

Note: Wave 1 sample. *P*-values are from two-sided tests for differences in proportions. To facilitate reading the table, we have bolded whichever frame-*j* or frame-(*j*+1) number is larger in each row. Percentages are rounded to the nearest 0.1% and therefore row percentages may not add up to 100%.

Table D.8. Results from structural estimation

A. Pairwise Choices Between Complete Strategies	(1)	(2)	(3)
	ln(CRRA)	ln(SD(error))	$\sigma_v^2 + \sigma_{\eta_1}^2$
stage	0.00411	-0.101	
	(0.0104)	(0.0102)	
constant	0.135	0.374	1.989
	(0.131)	(0.0837)	(0.332)

B. Pairwise Choices Between Compound Lotteries	(1)	(2)	(3)
	ln(CRRA)	ln(SD(error))	$\sigma_v^2 + \sigma_{\eta_1}^2$
stage	0.0326	-0.108	
	(0.0120)	(0.0101)	
constant	-0.0369	0.498	2.205
	(0.151)	(0.0870)	(0.384)

C. Pairwise Choices Between Reduced Simple Lotteries	(1)	(2)	(3)
	ln(CRRA)	ln(SD(error))	$\sigma_v^2 + \sigma_{\eta_1}^2$
stage	0.0104	-0.118	
	(0.0121)	(0.0101)	
constant	0.0671	0.569	2.049
	(0.138)	(0.0836)	(0.346)

Note: Wave 1 sample. #Obs is 26,820 choices. Standard errors in parentheses. Column (3) reports estimates of $\sigma_v^2 + \sigma_{\eta_1}^2$ because with only wave 1 data, we cannot separately identify $\sigma_{\eta_1}^2$ (the component uncorrelated with wave-2 responses) and σ_v^2 (the covariance between wave-1 and wave-2 responses).

Part II

Figure D.5.2: Flow chart for the placebo reconsideration procedure
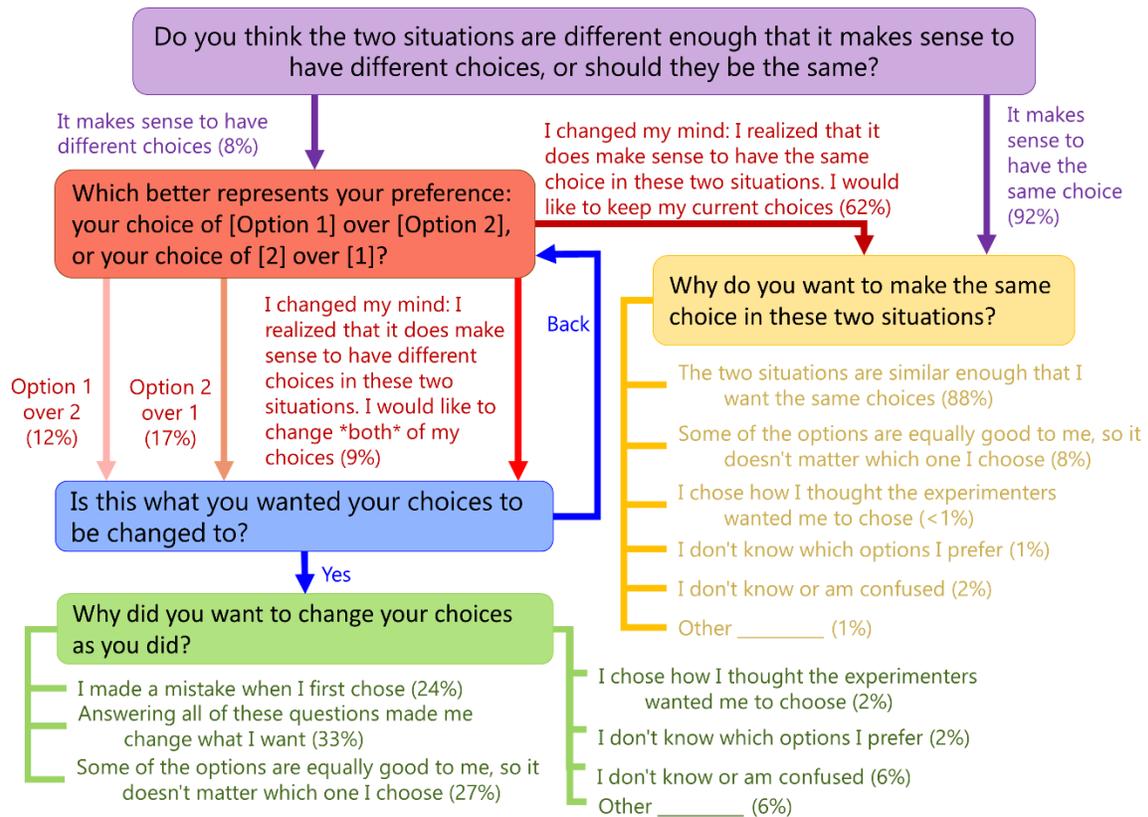
Note: The numbers in parentheses are frequencies of each choice across all instances of placebos in the Wave 1 sample, with the exception of the responses to "why did you want to change your choices as you did" and "why do you want to change your choices as you did." For those two questions, version 1 of the experiment collected open-ended responses rather than multiple-choice responses. Thus, the percentages for those two questions are only for individuals in version 2.

Figure D.7.2: Percentage of participants who make the risky choice in simple lotteries, adjusted by monetary level

(A) C versus D
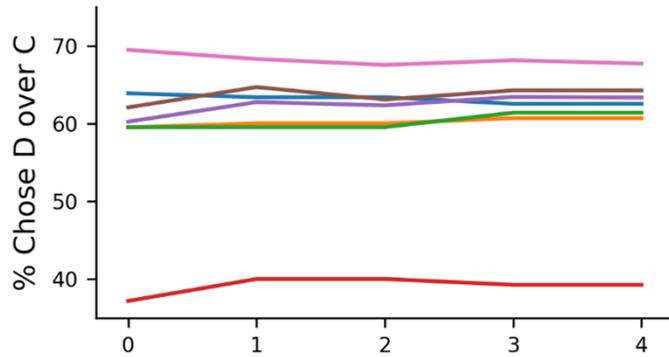
(B) E versus F
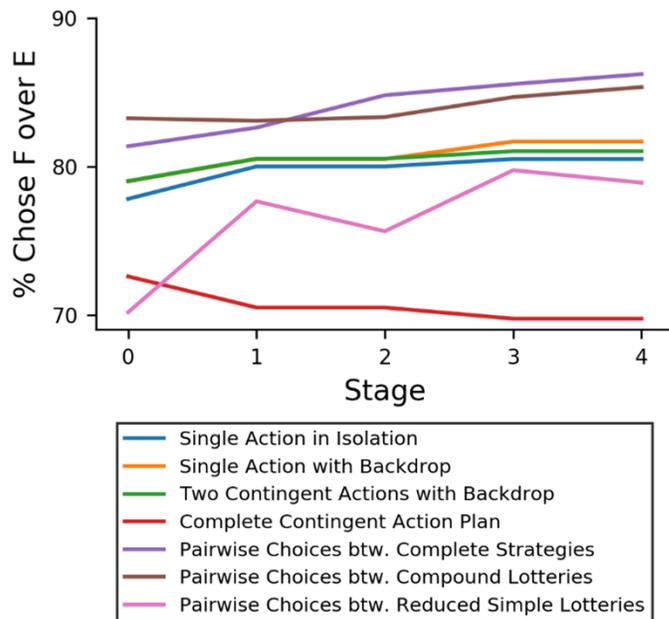
Legend:
- Single Action in Isolation
- Single Action with Backdrop
- Two Contingent Actions with Backdrop
- Complete Contingent Action Plan
- Pairwise Choices btw. Complete Strategies
- Pairwise Choices btw. Compound Lotteries
- Pairwise Choices btw. Reduced Simple Lotteries

Note: Wave 1 sample. For each of the three pairwise frames, the top panel reports the average from the two questions eliciting BCE vs. BDE and BCF vs. BDF, and bottom panel reports the average from the two questions eliciting BCE vs. BCF and BDE vs. BDF. Standard errors around each plotted point are roughly 1-3 percentage points (not shown to avoid cluttering the figure). To control for monetary level, we took the following steps: first, we regressed the participants' choices on indicators for monetary level separately for each frame. Then, we obtained the residuals. Finally, we standardized the residual to have the same mean and standard deviation as the original distribution.

Table D.9: Untutored choices by frame and randomization into the upside-down orientation

Option 1 vs. Option 2	% Chose Option 1		Diff	P-value H_0: Diff = 0	#Obs
	Rightside-Up Orientation	Upside-Down Orientation			
Single Action in Isolation					
C vs. D	37.0%	35.4%	1.5%	0.6984	595
E vs. F	23.6	21.0	2.5	0.4566	595
Single Action with Backdrop					
C vs. D	38.8	42.0	-3.2	0.4232	595
E vs. F	19.2	22.6	-3.4	0.3154	595
Two Contingent Actions with Backdrop					
C vs. D	39.1	41.6	-2.5	0.5353	593
E vs. F	19.1	22.6	-3.4	0.3048	596
Complete Contingent Action Plan					
A vs. other options	15.4	16.2	-0.7	0.8078	581
BCE vs. other options	3.3	6.5	-3.2	0.0808	581
BCF vs. other options	23.9	25.6	-1.7	0.6426	581
BDE vs. other options	5.9	9.4	-3.5	0.1154	581
BDF vs. other options	51.5	42.4	9.1	0.0287	581
Pairwise Choices Between Complete Strategies					
A vs. BCE	18.1	27.0	-8.8	0.0104	595
A vs. BCF	16.6	16.0	0.6	0.8385	596
A vs. BDE	23.5	26.6	-3.2	0.3731	596
A vs. BDF	17.0	17.2	-0.2	0.9455	595
BCE vs. BCF	17.0	15.7	1.3	0.6702	596
BCE vs. BDE	40.4	39.5	0.9	0.8166	596
BCE vs. BDF	31.8	34.5	-2.7	0.4838	596
BCF vs. BDE	70.4	65.8	4.6	0.2342	596
BCF vs. BDF	40.1	39.2	0.9	0.8255	596
BDE vs. BDF	20.6	21.3	-0.7	0.8254	596
Pairwise Choices Between Compound Lotteries					
A vs. BCE	21.7	21.9	-0.3	0.9337	596
A vs. BCF	19.9	16.0	3.9	0.2187	596

A vs. BDE	26.4	22.9	3.5	0.3267	596
A vs. BDF	15.9	15.7	0.2	0.9441	596
BCE vs. BCF	14.1	13.8	0.3	0.9059	595
BCE vs. BDE	38.3	41.5	-3.2	0.4215	595
BCE vs. BDF	30.0	31.0	-1.1	0.7776	596
BCF vs. BDE	63.8	68.9	-5.1	0.1897	594
BCF vs. BDF	35.7	36.1	-0.3	0.9374	596
BDE vs. BDF	19.5	19.5	0.0	0.9994	595

Pairwise Choices Between Simple Lotteries

A vs. BCE	23.1	19.2	3.9	0.2421	595
A vs. BCF	25.0	27.3	-2.3	0.5304	595
A vs. BDE	22.7	22.6	0.2	0.9599	596
A vs. BDF	21.3	21.6	-0.3	0.9221	596
BCE vs. BCF	20.2	25.8	-5.6	0.1087	595
BCE vs. BDE	33.6	39.5	-5.9	0.1350	596
BCE vs. BDF	33.6	33.5	0.0	0.9935	596
BCF vs. BDE	40.8	45.0	-4.2	0.3058	595
BCF vs. BDF	22.4	26.0	-3.6	0.3029	596
BDE vs. BDF	37.2	35.7	1.4	0.7147	596

Note: Wave 1 sample. *P*-values are two-sided and from two-sample *t*-tests for differences in proportions between choices made by participants who saw the rightside-up orientation of screens (i.e., choice A is at the top and choices E vs. F are at the bottom of the screen) and choices made by participants who saw the upside-down orientation (i.e., choice A is at the bottom and choices E vs. F are at the top of the screen).

Table D.10: Percentage of participants who make the risky choice in simple lotteries

Frame	Wave 1				
	Stage 0	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**
% Choose D over C					
Single Action in Isolation	63.9%	63.4%	63.4%	62.5%	62.5%
	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Single Action with Backdrop	59.5	60.0	60.0	60.7	60.7
	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Two Contingent Actions with Backdrop	59.5	59.5	59.5	61.4	61.4
	(2.0)	(2.0)	(2.0)	(2.0)	(2.0)
Complete Contingent Action Plan	44.5	47.4	47.4	46.6	46.6
	(3.1)	(3.1)	(3.1)	(3.1)	(3.1)
Pairwise Choices B/t Complete Strategies	60.2	62.8	62.3	63.4	63.3
	(1.7)	(1.7)	(1.8)	(1.8)	(1.8)
Pairwise Choices B/t Compound Lotteries	62.1	64.7	63.1	64.3	64.3
	(1.7)	(1.7)	(1.8)	(1.8)	(1.8)
Pairwise Choices B/t Reduced Lotteries	69.5	68.3	67.5	68.1	67.7
	(1.5)	(1.6)	(1.7)	(1.7)	(1.7)
% Choose F over E					
Single Action in Isolation	77.8	80.0	80.0	80.5	80.5
	(1.7)	(1.6)	(1.6)	(1.6)	(1.6)
Single Action with Backdrop	79.0	80.5	80.5	81.7	81.7
	(1.7)	(1.6)	(1.6)	(1.6)	(1.6)
Two Contingent Actions with Backdrop	79.0	80.5	80.5	81.0	81.0
	(1.7)	(1.6)	(1.6)	(1.6)	(1.6)
Complete Contingent Action Plan	75.1	72.9	72.9	72.2	72.2
	(2.7)	(2.7)	(2.7)	(2.8)	(2.8)
Pairwise Choices B/t Complete Strategies	81.4	82.6	84.8	85.6	86.2
	(1.3)	(1.3)	(1.2)	(1.2)	(1.2)
Pairwise Choices B/t Compound Lotteries	83.2	83.1	83.3	84.7	85.4
	(1.3)	(1.2)	(1.3)	(1.2)	(1.2)
Pairwise Choices B/t Reduced Lotteries	70.2	77.6	75.6	79.7	78.9
	(1.5)	(1.3)	(1.4)	(1.3)	(1.4)

Note: Wave 1 sample. Data shown were used to generate Figure D.7.1. Percentage of participants who chose the riskier option (D or F) are displayed. Standard errors are in parentheses.

Table D.11: Regression of risky choice on stage of experiment

	(1) Pooled choices	(2) Chose D over C	(3) Chose F over E
Stage	0.00479	0.00174	0.00784
	(0.00102)	(0.00143)	(0.00137)
Frames:			
Single Action with Backdrop	-0.0103	-0.0296	0.00908
	(0.00653)	(0.00972)	(0.00810)
Two Contingent Actions with Backdrop	-0.0107	-0.0286	0.00672
	(0.00854)	(0.0128)	(0.0121)
Complete Contingent Action Plan	0.0268	0.0155	0.0381
	(0.0125)	(0.0175)	(0.0164)
Pairwise Choices B/t Complete Strategies	0.0183	-0.00710	0.0436
	(0.0109)	(0.0170)	(0.0138)
Pairwise Choices B/t Compound Lotteries	0.0236	0.00571	0.0417
	(0.0115)	(0.0177)	(0.0153)
Pairwise Choices B/t Reduced Lotteries	0.00872	0.0510	-0.0334
	(0.0118)	(0.0173)	(0.0160)
Constant	0.700	0.626	0.774
	(0.0137)	(0.0190)	(0.0160)
#Obs	40751	20373	20378

Note: Wave 1 sample. Regression of choice of D or F on the stage of the experiment. Frame fixed effects were included. Standard errors are clustered at the participant-level and displayed in parentheses.