Experiment 1

Twenty-six participants were excluded from the analysis since they failed to meet at least one of the following criteria: (a) self-reported colorblindness, (b) failure to engage with the task by only selecting one frame during the first block in the frame selection phase, (c) failure to engage with the task by only by pressing only the 'F' key or only the 'J' key, by pressing no keys, (d) performing no better than chance on catch trials in the initial phase, (e) failing the attention check on the GRIPS survey, (f) completing the experiment more than once, and (g) failing to complete all phases of the task. Note that some participants failed more than one exclusion criterion.

Reason for exclusion	# Participants
Colorblind	3
Failed to explore in first block	3
Only selected "f" key, only selected "j" key, or selected no keys	2
Underperformed on catch trials	16
Failed attention check on GRIPS	4
Completed the experiment more than once	0
Did not finish the experiment	0

We conducted an ANOVA to compare the magnitude of framing effects between the initial phase and the frame selection phase. To achieve this, we calculated the proportion of participants selecting the risky option based on the frame and phase.

Cases	Sum of Squares	df	Mean Square	F	p
phase	0.134	1	0.134	5.480	0.021
Residuals	2.792	114	0.024		
frame	1.399	1	1.399	47.900	<.001
Residuals	3.328	114	0.029		
phase ✻ frame	0.054	1	0.054	6.017	0.016
Residuals	1.030	114	0.009		

Note. Type III Sum of Squares

We ran a mixed-effects model to determine how frame context and frame affect risky choice selection. To do this, we calculated the proportion that each participant made a risky choice in each frame in the initial phase ($Risky_p$). We then computed the proportion each participant selected the gain frame in the frame selection phase and centralized this proportion around zero ($Gain_p$). We then ran the following mixed effects model:

$$Risky_p \sim Gain_p + Frame + Gain_p X\, Frame + (1|participant)$$

Variable	Estimate	Std. Error	df	*t* value	*p*
(Intercept)	0.478	0.019	113	24.98	< .001 ***
$Gain_p$	-0.066	0.008	113	-8.08	< .001 ***
Frame	-0.098	0.115	113	-0.86	0.393
$Gain_p X\, Frame$	-0.158	0.049	113	-3.22	0.0017 **

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

We conducted a mixed-effects model analysis to assess whether participants with a gain-frame preference chose the risky option less frequently during the frame selection phase compared to the initial phase. To achieve this, we calculated the difference in risky choices between the two phases (frame selection phase - initial phase) and used this difference as our dependent variable. We then calculated the proportion of gain-frame selections in the frame selection phase for each participant, centering this proportion around zero ($Gain_p$). We ran the following mixed effects model:

$$Risk\ difference \sim Gain_p + (1|participant)$$

Variable	Estimate	Std. Error	*t* value	*p*
(Intercept)	-0.06	0.015	-3.81	<0.001 ***
gain/loss ratio	-0.41	0.09	-4.54	<.001 ***

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

Experiment 2

Twenty-two participants were excluded from the analysis since they failed to meet at least one of the following criteria as outlined above, except with the following changes. First, participants did not complete the GRIPS. Therefore, the GRIPS attention check was removed as an exclusion criterion. Second, we added colorblindness as a pre-screening criterion, so all participants who completed the experiment were not colorblind. A description of why each participant was excluded from the analysis is provided below. Note that participants could have failed more than one exclusion criterion.

Reason for exclusion	# Participants
Failed to explore in first block	0
Only selected "f" key, only selected "j" key, or selected no keys	1
Underperformed on catch trials	22
Completed the experiment more than once	0
Did not finish the experiment	0

We then ran a similar ANOVA as in Experiment 1 to compare the magnitude of framing effects between the learning phase and the frame selection phase.

Cases	Sum of Squares	df	Mean Square	F	p
phase	0.025	1	0.025	0.959	0.330
Residuals	2.513	96	0.026		
frame	0.821	1	0.821	31.013	<.001
Residuals	2.541	96	0.026		
phase ✻ frame	7.453e-5	1	7.453e-5	0.006	0.938
Residuals	1.165	96	0.012		

Note. Type III Sum of Squares

To determine frame preference, we ran a logistic mixed-effects model. Specifically, since the expected values varied, we calculated the degree to which the game frame option was better than the loss frame choice (gain/loss ratio) and centralized this ratio around zero. Therefore, when the gain/loss ratio is greater than zero, the gain frame option is better. Similarly, when the ratio is less than zero, the loss frame option is better. We then ran a logistic mixed-effects model to predict selecting the gain frame option based on the gain/loss frame, with participant as a random slope.

$$Gain\ frame\ selection \sim gain/loss\ ratio\ +\ (1|participant)$$

Variable	Estimate	Std. Error	*z* value	*p*
(Intercept)	0.176	0.075	2.34	0 .019 *
gain/loss ratio	2.010	0.078	25.86	<.001 ***

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

We then ran a similar mixed-effects model as in Experiment 1 to determine how frame context and frame affect risky choice selection. We only included trials where the gain frame option had the same expected value as the loss frame option.

Variable	Estimate	Std. Error	df	*t* value	*p*
(Intercept)	0.546	0.015	95	35.94	< .001 ***
$Gain_p$	-0.046	0.010	95	-4.62	< .001 ***
Frame	-0.209	0.081	95	-2.58	0.011 *
$Gain_p$ X $Frame$	-0.017	0.054	95	-0.31	0.758

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

We conducted a similar mixed-effects model as in Experiment 1 to assess whether participants with a gain-frame preference chose the risky option less frequently during the frame selection phase compared to the initial phase. We only included trials where the gain frame option had the same expected value as the loss frame option.

Variable	Estimate	Std. Error	*t* value	*p*
(Intercept)	-0.03	0.017	-1.80	0.076 .
gain/loss ratio	-0.32	0.09	-3.57	<.001 ***

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

We employed exploratory logistic mixed-effects models to determine frame preference for participants who learned the casinos' values (value-sensitive) and those who did not (value-insensitive). For each group, we ran the same logistic mixed-effects model as we did with all participants.

Value-sensitive group

Variable	Estimate	Std. Error	*z* value	*p*
(Intercept)	0.105	0.110	0.95	0.34
gain/loss ratio	3.68	0.118	31.15	<.001 ***

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

Value-insensitive group

Variable	Estimate	Std. Error	*z* value	*p*
(Intercept)	0.249	0.104	2.38	0.017 *
gain/loss ratio	0.435	0.108	4.04	<.001 ***

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

We conducted an exploratory logistic mixed-effects model to examine how participants from the value-sensitive and value-insensitive groups differed in their responses to frame preference.

Variable	Estimate	Std. Error	*z* value	*p*
(Intercept)	0.177	0.076	2.32	0 .02 *
gain/loss ratio	2.054	0.080	25.73	< .001 ***
learned casino	-0.073	0.076	-0.95	0.34
gain/loss ratio x learned casio	1.619	0.080	20.29	<.001 **

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*

We employed a logistic mixed-effects model to investigate frame choice selection based on how well they learned the casino values. Specifically, we calculated the proportion of trials in which participants selected the casino with the higher expected reward on same-frame trials (value-sensitivity) and included this as a predictor in the model.

Variable	Estimate	Std. Error	*z* value	*p*
(Intercept)	0.173	0.075	2.31	0 .02 *
gain/loss ratio	2.141	0.081	26.29	< .001 ***
value-sensitivity	-0.591	0.419	-1.41	0.16
gain/loss ratio x value-sensitivity	11.914	0.476	25.01	<.001 **

*Signif. Codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1*