Testing the Elicitation Procedure of the Minimum Acceptable Probability

Pre-Analysis Plan

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1 Introduction

The Minimum Acceptable Probability (MAP) is a threshold value for preferring to trust someone over accepting a sure payoff. It is elicited through a procedure similar to a Becker-De Groot-Marschak mechanism (Becker et al., 1964) (expressed as a required probability or absolute number of favorable outcomes).

The concept was introduced by Bohnet and Zeckhauser (2004) and it has been used—with slight variations—to elicit a determinant of trust, betrayal aversion, in a difference-in-difference design. Bohnet and Zeckhauser (2004) find that participants require a premium for being willing to trust someone compared to taking an equally risky bet with the same payoff externalities for an uninvolved person. They attribute this premium to betrayal aversion—an anticipatory disutility from being betrayed.

As Li et al. (2020) note, this attribution rests on the assumption that participants are rational expected utility maximizers. Should participants not be rational expected utility maximizers, there are several possible confounding explanations for the premium found by Bohnet and Zeckhauser (2004) and subsequent studies, such as "ambiguity attitudes, complexity, different beliefs, and dynamic optimization" (Li et al., 2020, p. 275).

In this study, we test experimentally what the contribution of one such confounding explanation is to this premium. Specifically, we test whether participants' MAPs change as a result of the underlying distribution from which the probability of success of the lottery is drawn. We remove the social and strategic aspects of a trusting decision, and study the MAP for accepting a risky lottery. The treatments exogenously vary the distribution of the winning probability, thus manipulating

participants' expectations about the lottery's winning chances.

Below we present the sample selection procedure, the experimental design, and the empirical strategy.

2 Research Strategy

This project will collect experimental data on an online platform dedicated to academic research (Prolific) in June 2021. Participants will be exposed to three treatments sequentially, in randomized order. In each of the treatments, participants have to state the MAP for which they prefer a lottery to a sure payment.

The pre-analysis plan will be registered at the AEA RCT registry before the start of the data collection.

2.1 Recruitment

Participants are registered users on the online platform Prolific. This platform is tailored for academic research, and gathers demographics about registered users. We will send an invitation to the experiment only to participants who have completed higher education, to increase the chances that task comprehension is not an issue. We will select as participants only residents of the United Kingdom.

3 Design

The study consists of three parts. The first describes the tasks and asks comprehension questions. This part pays a fixed payoff. Only those who answer the comprehension questions correctly are allowed to continue to the second part,

which is incentivized. In this part we elicit participants' MAPs in three different scenarios. After this, participants go through a survey (the third part), which is unincentivized. We resolve uncertainty at the very end, when we inform participants about their payoff for the second part.

As mentioned above, participants in the experiment are asked to state their MAP in a *Decision Problem* (Bohnet and Zeckhauser, 2004): what is their MAP for taking a gamble rather than accepting a sure payoff? The experiment uses a within-subject design.[1] The complete instructions are available in Appendix D.

Below we present the main tasks and the post-experimental survey in more detail.

3.1 Main tasks

In each treatment, subjects face a different distribution of winning probabilities. Each winning probability is represented by a wheel of fortune with 15 sectors. Sectors are either dark blue (worth the high payoff of £4) or light blue (worth the low payoff of £1). For their MAP, participants have to state an integer between 0 and 15.[2]

Each of the three treatments consists of 32 different wheels, which can be ordered by the overall expected value over all wheels in the treatment. We call the three treatments: the Good (the treatment with the highest expected value over all 32 wheels, where the distribution of the winning probability is left skewed),

[1] We will also run a between-subject analysis using the data for the first decision participants make. This is in order to check whether results in the within-subject analysis are not due to an experimenter demand effect. The sample size calculation is based on the within-subject design. For this reason, the main hypothesis refers to within-subject effects.

[2] We chose to ask participants to state integers rather than probabilities because there is evidence that participants understand such questions better (for instance, see Study 2 in Quercia, 2016).

the Bad (the treatment with the lowest expected value over all 32 wheels, where the distribution of the winning probability is right skewed), and the Uniform (the expected value is in-between the ones in the other treatments, and the distribution of the winning probability is uniform).

The Bad and the Uniform distribution were chosen to reflect potential distributions imagined by participants in Bohnet and Zeckhauser (2004) and Bohnet et al. (2008) in their *Trust Game* and in their *Decision Problem*, respectively. Specifically, the Bad distribution has an expected probability of a dark blue sector over all 32 wheels of 0.2895, close to p^* in their *Trust Game*. The Uniform distribution is plausibly what participants expected to face in their *Decision Problem*: an overall probability of a dark blue sector over the 32 wheels of 0.5, with each possible winning probability being equally likely.

Payoffs are determined by a two-stage lottery. In Stage 1, one of the 32 wheels is randomly drawn. In Stage 2, the number of dark blue sectors in the randomly selected wheel is compared with the participant's MAP. Should this number be equal to or exceed her MAP, the participant spins the virtual wheel for her payoff. Should the number be lower than her MAP, the participant does not spin it. She receives the intermediate safe payoff of £2.

Participants who have answered the comprehension questions in Part 1 correctly see the pictures in Figures 1, 2, 3 in randomized order. Each picture is accompanied by the following text:

Consider the wheels above. Which wheels do you prefer to SPIN for your bonus? Please enter an integer between 0 and 15.

I prefer to SPIN wheels which have at least ... dark blue sectors.

If the randomly selected wheel has fewer than ... dark blue sectors, I DON'T

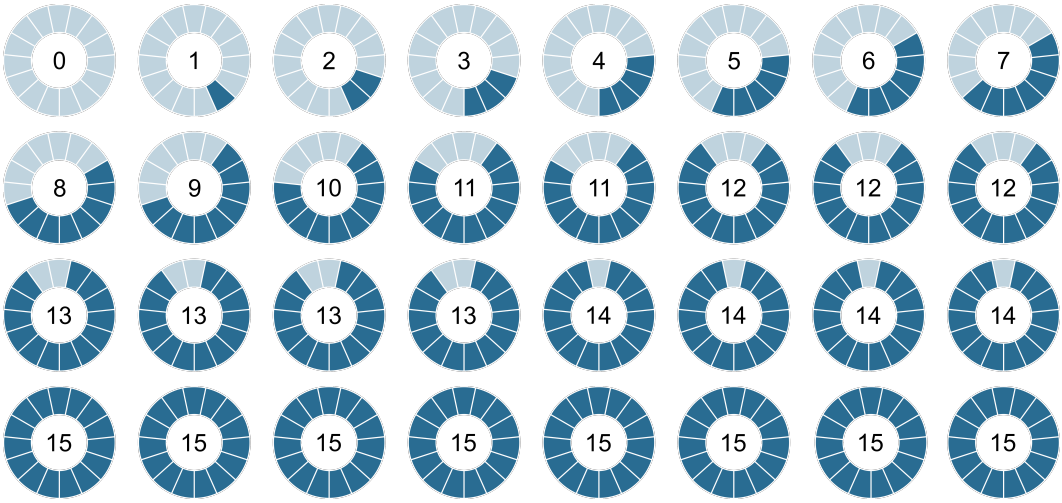

Figure 1: Left skewed distribution ('The Good')

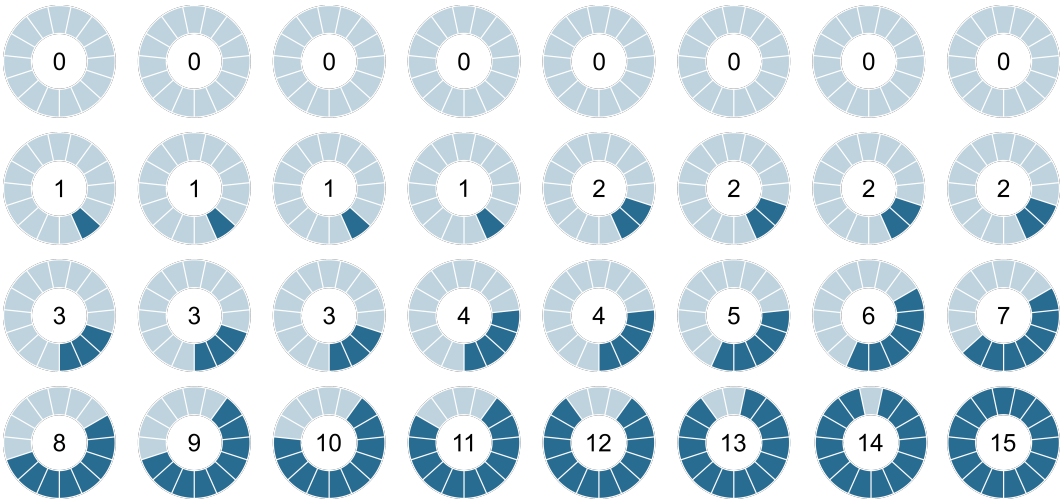

Figure 2: Right skewed distribution ('The Bad')

SPIN it. My bonus is £2.

If the randomly selected wheel has ... or more dark blue sectors, I SPIN it. My bonus is

- *£1 if the selected wheel lands on light blue, and*
- *£4 if it lands on dark blue.*

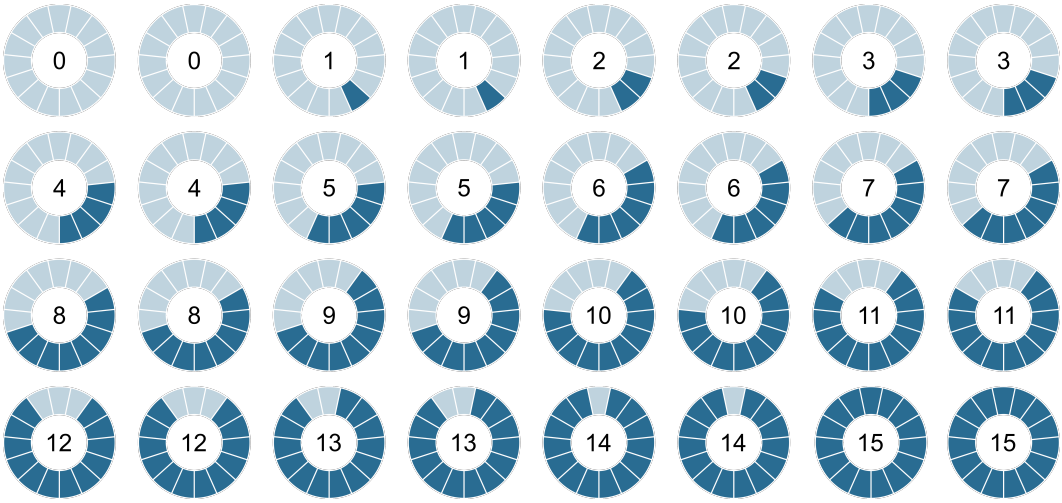

Figure 3: Uniform distribution ('The Uniform')

Participants have to fill in the text in the bold italicized sentence (which is not bold nor italicized in the version participants see). The rest of the '...' are automatically filled in (and/or updated) with the participant's input.

3.2 Survey questions

Participants answer the following type of questions:

- a question similar to the main tasks, but which is unincentivized. This question elicits their MAP in an ambiguous situation;
- an adapted cognitive reflection test (Frederick, 2005; Thomson and Oppenheimer, 2016);
- a question about the subject they studied for their most recent degree;
- a general risk taking question (Dohmen et al., 2011);

- a question about their aspiration level for earnings from participating in a survey;
- a couple of questions to check their anchoring susceptibility, from which an anchoring score can be computed (Cheek and Norem, 2017);
- a set of questions about their optimism/pessimism, the revised Life Orientation Test (Scheier et al., 1994);
- a brief sensation seeking scale, BSSS-4 (Stephenson et al., 2003).

Additional information will be requested from Prolific, who can provide data on participants' age, gender, subject for which they received their most recent degree, whether participants make household spending decisions, and investment behavior.

4 Empirical Strategy

Should participants be expected utility maximizers, their MAPs should not differ between the three treatments. This would be in line with what Bohnet and Zeckhauser (2004) and Bohnet et al. (2008) assume.

In their Appendix A, Li et al. (2020) show by means of a numerical example that if participants are not expected utility maximizers, ambiguity aversion alone could generate the pattern attributed to betrayal aversion. Since there is evidence that attitudes towards complex risks and attitudes towards ambiguity are correlated (Armantier and Treich, 2016), we redo their numerical exercise for our three distributions: the Good, the Bad, and the Uniform in Appendix A. For this calcu-

lation we assume that participants view the tasks as complex risky situations—and this underlies their inverse-s-shaped probability weighting.

The calculation leads to the main hypothesis below.

4.1 Hypotheses

4.1.1 Main hypothesis

Hypothesis 1 *The MAP in the Good treatment (more mass on high values of p^*) is lower than the MAP in the Uniform treatment (a uniform distribution over p^*), which is lower than the MAP in the Bad treatment (more mass on low values of p^*).*

$$MAP_G < MAP_U < MAP_B \tag{1}$$

An alternative hypothesis is that the MAP ordering is precisely the opposite of the one in H1. A reason for this alternative hypothesis is that participants possibly anchor their MAP on the visual cues offered by a distribution. That is, they require a higher MAP the higher the overall winning probability over the 32 wheels. If this explanation is true, we should see the reverse ordering to the one in H1, and a positive correlation between one's anchoring score and (i) displaying this reverse ordering and (ii) the effects' absolute value (both $|MAP_G - MAP_U|$ and $|MAP_B - MAP_U|$).

4.1.2 Secondary hypotheses

Since the MAP is a way to gauge (complex) risk aversion, we expect that in the same treatment females state higher MAPs than males on average.

Hypothesis 2 *Within each treatment, females require higher MAPs on average than males.*

Some of the within-subject differences between treatments could be due to difficulties in assessing complex risks. Should this be the case, we expect participants scoring lower on the CRT tasks to have higher variance in their MAPs.

Hypothesis 3 *Within individuals, the variance in MAP correlates negatively with the CRT score.*

Individuals might derive utility from spinning the wheels in the tasks. We expect those who score higher on sensation seeking to also have lower MAPs on average in each treatment.

Hypothesis 4 *Within each treatment, participants who score high on sensation seeking require lower MAPs on average than those who score low.*

Several papers find that higher aversion to complex risks is positively correlated with higher ambiguity aversion (Halevy, 2007; Armantier and Treich, 2016). The numerical example in Appendix A suggests the following hypothesis.

Hypothesis 5 *Within individuals, higher effect sizes (in absolute terms, $|MAP_G - MAP_U|$ and $|MAP_B - MAP_U|$) are positively correlated with a higher ambiguity aversion ($MAP_A - MAP_U$).*

Finally, there are two concepts for which we do not have clear directional hypotheses. We will explore the relation between the MAPs and optimism/pessimism, as well as that between the MAPs and an aspiration level for earnings.

4.2 Specifications and Analysis

We present the OLS regressions which will be used to test the main hypothesis. Additionally, we will also run appropriate non-parametric tests.

The main hypothesis will be tested using the following regression:

$$MAP_i = \beta + \beta_G \times G + \beta_B \times B + \epsilon_i \tag{2}$$

where MAP_i is the MAP chosen by participant i, G is an indicator which takes the value of 1 if the decision was made in the Good treatment, B is an indicator which is 1 if the decision was made in the Bad treatment and ϵ_i is a random error term. Standard errors in the estimation will be clustered at the individual level.

For Hypothesis 2, all terms will be interacted with indicator variable F_i, which takes the value 1 if the participant is female:

$$MAP_i = \beta + \beta^F \times F_i + \beta_G \times G + \beta_G^F \times G \times F_i + \beta_B \times B + \beta_B^F \times B \times F_i + \epsilon_i \tag{3}$$

For Hypotheses 3–5, we will calculate Pearson's correlation coefficient between the variables pertaining to each hypothesis.

The formal statements of the hypotheses are in Appendix B.

References

Armantier, O. and Treich, N. (2016). The rich domain of risk. *Management Science*, 62(7):1954–1969.

Becker, G., De Groot, M., and Marshak, J. (1964). Measuring utility by a single-response sequential method. *Behavioral Science*, 9:226–232.

Bohnet, I., Greig, F., Herrmann, B., and Zeckhauser, R. (2008). Betrayal aversion: Evidence from Brazil, China, Oman, Switzerland, Turkey, and the United States. *American Economic Review*, 98(1):294–310.

Bohnet, I. and Zeckhauser, R. (2004). Trust, risk and betrayal. *Journal of Economic Behavior & Organization*, 55(4):467–484.

Campos-Mercade, P. (2018). Power analysis through simulation in Stata: a guide for dummies. Working paper.

Cheek, N. N. and Norem, J. K. (2017). Holistic thinkers anchor less: Exploring the roles of self-construal and thinking styles in anchoring susceptibility. *Personality and Individual Differences*, 115:174–176.

Dohmen, T., Falk, A., Huffman, D., Sunde, U., Schupp, J., and Wagner, G. G. (2011). Individual risk attitudes: Measurement, determinants, and behavioral consequences. *Journal of the European Economic Association*, 9(3):522–550.

Frederick, S. (2005). Cognitive reflection and decision making. *Journal of Economic Perspectives*, 19(4):25–42.

Halevy, Y. (2007). Ellsberg revisited: An experimental study. *Econometrica*, 75(2):503–536.

Li, C., Turmunkh, U., and Wakker, P. P. (2020). Social and strategic ambiguity versus betrayal aversion. *Games and Economic Behavior*, 123:272–287.

Prelec, D. (1998). The probability weighting function. *Econometrica*, 66(3):497–527.

Quercia, S. (2016). Eliciting and measuring betrayal aversion using the BDM mechanism. *Journal of the Economic Science Association*, 2(1):48–59.

Scheier, M. F., Carver, C. S., and Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67(6):1063–1078.

Schneider, F. H. and Schonger, M. (2019). An experimental test of the anscombe–aumann monotonicity axiom. *Management Science*, 65(4):1667–1677.

Stephenson, M. T., Hoyle, R. H., Palmgreen, P., and Slater, M. D. (2003). Brief measures of sensation seeking for screening and large-scale surveys. *Drug and Alcohol Dependence*, 72(3):279–286.

Thomson, K. S. and Oppenheimer, D. M. (2016). Investigating an alternate form of the cognitive reflection test. *Judgment and Decision Making*, 11(1):99–113.

Appendix A Numerical Example

Li et al. (2020) show in their Appendix A that—even in the absence of betrayal aversion—a different effect of ambiguity attitudes in the *Risky Dictator Game* and in the *Trust Game* of Bohnet and Zeckhauser (2004) and Bohnet et al. (2008) may lead to the strategic premium observed in papers on betrayal aversion.

We apply their numerical example to the three distributions used in our study. We make the following assumptions:

- the utility of outcomes is fixed. We consider $U(£4) = 1$, $U(£1) = 0$, and $U(£2) = 1/3$;[3]
- participants use a probability weighting function because they perceive the tasks to involve complex risks. Similar to Li et al. (2020), we use Prelec's (1998) *compound invariance* function:

$$w(p) = (exp(-(-ln(p))^{\alpha}))^{\beta}$$

- we use $\alpha = 0.65$ and $\beta = 1.0467$, which according to Li et al. (2020) are the most common values for risky probability weighting;
- participants use "forward" evaluation: they consider the three possible outcomes, and take into account their probabilities;
- participants have the following rank-dependent utility function (Schneider

[3]We set the utility of the safe payoff such that $U(£2) = x \times U(£4) + (1 - x) \times U(£1)$, where $x \in [0, 1]$. This leads to $x^* = 1/3$.

and Schonger, 2019):

$$RDU = w(P(£4)) \times 1 + (w(P(£4) + P(£2)) - w(P(£4))) \times (1/3)$$

where $P(£4)$ is the probability of receiving the high payoff, $P(£2)$ the probability of receiving the safe payoff, and $P(£1)$ the probability of receiving the low payoff.

In this case, the MAPs which maximize participants' utility in the three treatments are: $MAP_G = 7$ ($RDU = 0.628$), $MAP_U = 8$ ($RDU = 0.495$), and $MAP_B = 9$ ($RDU = 0.439$).

Appendix B Hypothesis Testing

B.1 Hypothesis 1

$H0 : \beta_G = \beta_B = 0$

$H1 : \beta_G < 0 < \beta_B$

B.2 Hypothesis 2

Within each treatment:

$H0 : \beta^F = 0$

$H1 : \beta^F > 0$

and

$H0 : \beta^F + \beta^F_G = 0$

$H1 : \beta^F + \beta^F_G > 0$

and

$H0 : \beta^F + \beta^F_B = 0$

$H1 : \beta^F + \beta^F_B > 0$

B.3 Hypothesis 3

Within individuals:

$H0 : corr(var_{MAP}, CRT) = 0$

$H1 : corr(var_{MAP}, CRT) < 0$

where var_{MAP} is the intra-individual variance of the MAP, as calculated from the respondent's MAP_G, MAP_B and MAP_U.

B.4 Hypothesis 4

Within each treatment:

$H0 : corr(MAP, BSSS4) = 0$

$H1 : corr(MAP, BSSS4) < 0$

where $BSSS4$ is the sensation seeking score, calculated as described in Cheek and Norem (2017).

B.5 Hypothesis 5

Within individuals:

$H0 : corr(|MAP_G - MAP_U|, MAP_A - MAP_U) = 0$

$H1 : corr(|MAP_G - MAP_U|, MAP_A - MAP_U) > 0$

and

$$H0 : corr(|MAP_B - MAP_U|, MAP_A - MAP_U) = 0$$

$$H1 : corr(|MAP_B - MAP_U|, MAP_A - MAP_U) > 0$$

Appendix C Sample size calculations

The Stata code below builds heavily on Example 2 in Campos-Mercade (2018).

```
set seed 2021

clear
set matsize 1000
mat estimates = J(1000,2,.)
* Creates a matrix of 1000 rows by 2 columns. In each row, we will store the
*p-values of each simulation. In our case, since we have two treatments (G and B),
*there are two p-values per row.
local subjects=400
*We assume that about 11% of 450 participants fail the comprehension questions
*and do not make it to Part 2.
local teffect= 0.34*0.1473471
* Defines the number of subjects in our experiment, the treatment effect. We
*take the treatment effect to be 0.35 times the betrayal aversion coefficient
*reported in Bohnet, Greig, Herrmann, & Zeckhauser (AER 2008)-- henceforth BGHZ.

* First, we assume that the second and the third MAP are 'sticky', that is, they
*don't move far from the first MAP.
quietly forvalues j=1(1)1000 {
* Repeats the following code 1000 times.
clear
set obs `subjects'
gen id=_n
* Divides the subjects into six groups (there are six possible orders of going through the treatments).
gen t=runiform()
egen sequence=cut(t),group(6)
gen task1=cond(sequence==0 | sequence==3,1,cond(sequence==1 | sequence==5,0,2))
gen task2=cond(sequence==0 | sequence==4,0,cond(sequence==2 | sequence==5,1,2))
gen task3=cond(sequence==2 | sequence==3,0,cond(sequence==1 | sequence==4,1,2))
* Orders subjects randomly for each of the 3 tasks.
label define treat 0 "Uniform" 1 "Left skew" 2 "Right skew"
label values task1 treat
label values task2 treat
label values task3 treat
* Labels the treatments.
gen mu= rnormal()*0.25056*0.2
bys id: replace mu = mu[1]
gen eps1= rnormal()*0.25056*0.8
gen eps2= rnormal()*0.25056*0.8
```

```
gen eps3= rnormal()*0.25056*0.8
* Generates the individual effect and the error terms for the 3 decisions.
gen map1=rnormal(.4474194,.2362232)+mu+eps1
replace map1=map1+`teffect' if task1==1
replace map1=map1-`teffect' if task1==2
gen map2=0.8*map1+0.2*rnormal(.4474194,.2362232)+mu+eps2
*MAP2 is influenced by MAP1 (possibly due to order effects).
replace map2=map2+`teffect' if task2==1
replace map2=map2-`teffect' if task2==2
gen map3=0.7*map1+0.3*rnormal(.4474194,.2362232)+mu+eps3
*MAP3 is influenced by MAP1, but less so than MAP2 (possibly due to order effects).
replace map3=map3+`teffect' if task3==1
replace map3=map3-`teffect' if task3==2
* Assigns an observation per task to each of the subjects.

reshape long map, i(id) j(task)
gen treatment = cond(task==1,task1,cond(task==2,task2,task3))
reg map i.treatment i.task, robust cluster(id)
local q1 = _b[1.treatment]/_se[1.treatment]
scalar pvalue1 = 2*ttail(e(df_r),abs(`q1'))
local q2 = _b[2.treatment]/_se[2.treatment]
scalar pvalue2 = 2*ttail(e(df_r),abs(`q2'))
* Tests differences between the control and treated group. Stores the p-value
* of the test.
matrix estimates[`j',1] = pvalue1
matrix estimates[`j',2] = pvalue2
* Adds the p-value of the test to the row number "j" of column 1 (or 2) on the 1000x2
* matrix that we created.
noisily display `j'
* Shows you on which simulation we are at (personal preference)
}

* This experiment is repeated 1000 times.

svmat estimates, names(pvalues)
gen n=_n
* Retrieves (and adds to our dataset) the 1000x2 matrix with the p-values of all
* the simulated experiments.

gen significant=0 if n<1000
replace significant=1 if pvalues1<0.05
gen significant2=0 if n<1000
replace significant2=1 if pvalues2<0.05
* Creates a variable with value 1 if the experiment was significant.

ci means significant
ci means significant2
* It displays the percentage of experiments in which the test was significant
* (power) and its confidence interval.
```

```
set seed 2021
clear
set matsize 1000
mat estimates = J(1000,2,.)
* Creates a matrix of 1000 rows by 2 columns. In each row, we will store the
*p-values of each simulation. In our case, since we have two treatments (G and B),
*there are two p-values per row.
local subjects=400
*We assume that about 10% of 450 participants fail the comprehension questions
*and do not make it to Part 2.
local teffect= 0.42*0.1473471
* Defines the number of subjects in our experiment, the treatment effect. We
*take the treatment effect to be 0.35 times the betrayal aversion coefficient
*reported in Bohnet, Greig, Herrmann, & Zeckhauser (AER 2008)-- henceforth BGHZ.


* Next, we assume that the MAPs are not sticky.
quietly forvalues j=1(1)1000 {
* Repeats the following code 1000 times.
clear
set obs `subjects'
gen id=_n
* Divides the subjects into six groups (there are six possible orders of going through the treatments).
gen t=runiform()
egen sequence=cut(t),group(6)
gen task1=cond(sequence==0 | sequence==3,1,cond(sequence==1 | sequence==5,0,2))
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*MAP2 is influenced by MAP1 (possibly due to order effects).
replace map2=map2+`teffect' if task2==1
replace map2=map2-`teffect' if task2==2
gen map3=rnormal(.4474194,.2362232)+mu+eps3
*MAP3 is influenced by MAP1, but less so than MAP2 (possibly due to order effects).
replace map3=map3+`teffect' if task3==1
replace map3=map3-`teffect' if task3==2
```

```
* Assigns an observation per task to each of the subjects.

reshape long map, i(id) j(task)
gen treatment = cond(task==1,task1,cond(task==2,task2,task3))
reg map i.treatment i.task, robust cluster(id)
local q1 = _b[1.treatment]/_se[1.treatment]
scalar pvalue1 = 2*ttail(e(df_r),abs(`q1'))
local q2 = _b[2.treatment]/_se[2.treatment]
scalar pvalue2 = 2*ttail(e(df_r),abs(`q2'))
* Tests differences between the control and treated group. Stores the p-value
* of the test.
matrix estimates[`j',1] = pvalue1
matrix estimates[`j',2] = pvalue2
* Adds the p-value of the test to the row number "j" of column 1 (or 2) on the 1000x2
* matrix that we created.
noisily display `j'
* Shows you on which simulation we are at (personal preference)
}

* This experiment is repeated 1000 times.

svmat estimates, names(pvalues)
gen n=_n
* Retrieves (and adds to our dataset) the 1000x2 matrix with the p-values of all
* the simulated experiments.

gen significant=0 if n<1000
replace significant=1 if pvalues1<0.05
gen significant2=0 if n<1000
replace significant2=1 if pvalues2<0.05
* Creates a variable with value 1 if the experiment was significant.

ci means significant
ci means significant2
* It displays the percentage of experiments in which the test was significant
* (power) and its confidence interval.
```

Appendix D Instructions

In the notes for the experimenters, the Good distribution is referred to as 'Left_Skew' and the Bad as 'Right_Skew'. Analogously, MAP_G is referred to as 'MAP_L' and MAP_B as 'MAP_R'.

The experiment will be run using Qualtrics. The .qsf file is available here (for

help on importing a .qsf file into Qualtrics, check this Qualtrics support page).

Survey Flow

Embedded Data
PROLIFIC_PIDValue will be set from Panel or URL.
High = £4.00
Low = £1.00
Safe = £2.00
ColorHigh = dark blue
ColorLow = light blue
Mobile = 0

Branch: New Branch
If
If Device Type Is Mobile

Embedded Data
Mobile = 1

End Survey: Advanced

Standard: Consent form (2 Questions)

Branch: New Branch
If
If Statement of consent In this study, you will be asked to make choices. You will also be asked t... I don't agree to participate Is Selected

End Survey: Advanced

Standard: Part 1 Intro (12 Questions)

Embedded Data
SpinClicks = ${e://Field/SpinClicks}
PracticeCorr = ${e://Field/PracticeCorr}
PracticeIncorr = ${e://Field/PracticeIncorr}

Standard: Trial 1 (12 Questions)

Embedded Data
noMistake1 = -999
Embedded Data
noMistake2 = -999

Branch: New Branch
If
If Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... I SPIN the selected wheel. Is Not Selected
Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. Is Not Selected

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... I DON'T SPIN the selected wheel. Is Selected

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/Low}. Is Selected

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/Safe}. Is Selected

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. Is Selected

Else If

If Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... I DON'T SPIN the selected wheel. Is Not Selected

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/Safe}. Is Not Selected

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... I SPIN the selected wheel. Is Selected

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/Low}. Is Selected

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. Is Selected

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. Is Selected

Else If

If Comprehension Question 3 Please select the correct statement from each of the following pairs.... Each wheel is equally likely to be selected. Is Not Selected

Or Click to write the question text I can't influence the chance that a particular wheel is selected. Is Not Selected

Or Click to write the question text I get to spin the selected wheel only if it's not in the grayed out area. Is Not Selected

Or Click to write the question text If I get to spin the selected wheel, it is equally likely to land on each sector. Is Not Selected

Or Click to write the question text My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on <strong>${e://Field/ColorHigh}. Is Not Selected

Standard: Trial 2 (10 Questions)

Embedded Data

noMistake1 = 0

noMistake2 = 0

Branch: New Branch

If

If noMistake1 Is Not Equal to 0

Embedded Data

noMistake1 = 1

Branch: New Branch

If

If Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... I SPIN the selected wheel. Is Not Displayed

And noMistake1 Is Not Equal to 1

Else If

If Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... I SPIN the selected wheel. Is Displayed

And Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... I SPIN the selected wheel. Is Selected

And Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. Is Selected

And Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... I DON'T SPIN the selected wheel. Is Not Selected

And Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... My bonus is ${e://Field/Low}. Is Not Selected

And Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... My bonus is ${e://Field/Safe}. Is Not Selected

And Your answer below is not correct. You can give it another try. Comprehension Question 1 Consi... My bonus is ${e://Field/Low} if the selected

wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. Is Not Selected

Embedded Data
noMistake2_1 = 1

Branch: New Branch
If
If Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... I DON'T SPIN the selected wheel. Is Not Displayed
And noMistake1 Is Not Equal to 1
Else If
If Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... I DON'T SPIN the selected wheel. Is Displayed
And Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... I DON'T SPIN the selected wheel. Is Selected
And Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... My bonus is ${e://Field/Safe}. Is Selected
And Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... I SPIN the selected wheel. Is Not Selected
And Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... My bonus is ${e://Field/Low}. Is Not Selected
And Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. Is Not Selected
And Your answer below is not correct. You can give it another try. Comprehension Question 2 Consi... My bonus is ${e://Field/Low} if the selected

wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. Is Not Selected

Embedded Data
noMistake2_2 = 1

Branch: New Branch
If
If Your answer(s) below is (are) not correct. You can give it another try. Comprehension Question... Each wheel is equally likely to be selected. Is Displayed
And Your answer(s) below is (are) not correct. You can give it another try. Comprehension Question... Each wheel is equally likely to be selected. Is Selected
And Click to write the question text I can't influence the chance that a particular wheel is selected. Is Selected
And Click to write the question text I get to spin the selected wheel only if it's not in the grayed out area. Is Selected
And Click to write the question text If I get to spin the selected wheel, it is equally likely to land on each sector. Is Selected
And Click to write the question text My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on <strong>${e://Field/ColorHigh}. Is Selected
Else If
If Your answer(s) below is (are) not correct. You can give it another try. Comprehension Question... Each wheel is equally likely to be selected. Is Not Displayed
And noMistake1 Is Not Equal to 1

Embedded Data
noMistake2_3 = 1

Branch: New Branch
If
If noMistake2_1 Is Equal to 1
And noMistake2_2 Is Equal to 1
And noMistake2_3 Is Equal to 1

Embedded Data
noMistake2 = 1

Branch: New Branch
If
If noMistake1 Is Equal to 1
Or noMistake2 Is Equal to 1

Standard: Part 2 Intro (4 Questions)

Embedded Data
Sequence = ${e://Field/Sequence}

Branch: New Branch
If
If Sequence Is Equal to 1

Standard: Left_skew (3 Questions)
Standard: Uniform (3 Questions)
Standard: Right_skew (3 Questions)

Branch: New Branch
If
If Sequence Is Equal to 2

Standard: Uniform (3 Questions)
Standard: Right_skew (3 Questions)
Standard: Left_skew (3 Questions)

Branch: New Branch
If
If Sequence Is Equal to 3

Standard: Right_skew (3 Questions)
Standard: Left_skew (3 Questions)
Standard: Uniform (3 Questions)

Branch: New Branch
If
If Sequence Is Equal to 4

Standard: Left_skew (3 Questions)
Standard: Right_skew (3 Questions)
Standard: Uniform (3 Questions)

Branch: New Branch
If
If Sequence Is Equal to 5

Standard: Right_skew (3 Questions)
Standard: Uniform (3 Questions)
Standard: Left_skew (3 Questions)

Branch: New Branch
If
If Sequence Is Equal to 6

Standard: Uniform (3 Questions)

Standard: Left_skew (3 Questions)
Standard: Right_skew (3 Questions)

Embedded Data
PracticeMapLCorr = ${e://Field/PracticeMapLCorr}
PracticeMapLIncorr = ${e://Field/PracticeMapLIncorr}
PracticeMapUCorr = ${e://Field/PracticeMapUCorr}
PracticeMapUIncorr = ${e://Field/PracticeMapUIncorr}
PracticeMapRCorr = ${e://Field/PracticeMapRCorr}
PracticeMapRIncorr = ${e://Field/PracticeMapRIncorr}

Standard: Ambiguity aversion (5 Questions)

Embedded Data
PracticeMapAmbigCorr = ${e://Field/PracticeMapAmbigCorr}
PracticeMapAmbigIncorr = ${e://Field/PracticeMapAmbigIncorr}

Standard: CRT_adapted (5 Questions)
Standard: Risk + degree (3 Questions)
Standard: Aspiration (4 Questions)

Block Randomizer: 1 - Evenly Present Elements

Standard: Anchoring_HighSun_LowTemp (7 Questions)
Standard: Anchoring_LowSun_HighTemp (7 Questions)

Standard: Optimism (4 Questions)
Standard: Sensation_seeking (2 Questions)
Standard: Resolution (4 Questions)

Embedded Data
PaidDecisionLUR = ${e://Field/Decision}
Chances = ${e://Field/Chances}
PaidMAP = ${e://Field/PaidMAP}

Branch: New Branch
If
If Chances Is Less Than ${e://Field/PaidMAP}

Embedded Data
Bonus = 2

Branch: New Branch
If
If Chances Is Greater Than or Equal to ${e://Field/PaidMAP}

Standard: Spin (2 Questions)

Embedded Data

SectorColor = ${e://Field/SectorColor}
Bonus = ${e://Field/Bonus}
TryOutClicks = ${e://Field/TryOutClicks}

Standard: Success (3 Questions)

Branch: New Branch
If
If noMistake1 Is Not Equal to 1
And noMistake2 Is Not Equal to 1

Standard: Failed_both_trials (3 Questions)

Page Break

Start of Block: Consent form

consent **Statement of consent** In this study, you will be asked to make decisions. You will also be asked to answer comprehension questions, reasoning questions, and questions about yourself. Your data will remain anonymous in accordance with GDPR (the European Union's personal data protection law).
This study follows the guidelines of the BEELab at Maastricht University. This means that all information you receive during the study is truthful. To continue, please select "I agree to participate".

- I agree to participate (1)
- I don't agree to participate (0)

Q2 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Consent form

Start of Block: Part 1 Intro

id Before you start, please switch off your phone/e-mail/music so you can focus on this study. Thank you!

Please enter your Prolific ID:

_____

Q4 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

Q5 **Part 1**

This part explains what the study is about and presents examples. We will test your understanding of the situation with some questions.

To continue to Part 2, you have to answer these questions correctly.

Q6 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Q7 Click to write the question text
Browser (1)
Version (2)
Operating System (3)
Screen Resolution (4)
Flash Version (5)
Java Support (6)
User Agent (7)

Page Break

JS

Q8 Consider a wheel of fortune like the one below. The wheel is equally likely to land on each sector. The pointer indicates the result: it's the sector which ends up at 12 o'clock when the wheel stops spinning. Give it a try!

Spin the wheel!

Q9 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

JS

Q10
In Part 2, you will see more such wheels. All wheels have **15 sectors** in total, which are either ${e://Field/ColorLow} or ${e://Field/ColorHigh}. The number in the middle is the **number of ${e://Field/ColorHigh} sectors** in a wheel.

Below is an example with five wheels.

One of the wheels will be randomly selected. Each wheel is **equally likely to be selected**. If the selected wheel is spun, it is **equally likely to land on each sector**.

You will have the following options for your bonus:

DON'T SPIN	You don't spin the selected wheel. Your bonus is ${e://Field/Safe}..
SPIN	You spin the selected wheel. Your bonus is ${e://Field/High} if the wheel lands on ${e://Field/ColorHigh}, and ${e://Field/Low} if it lands on ${e://Field/ColorLow}.

Let us consider some examples. If the selected wheel has

- 15 ${e://Field/ColorHigh} sectors, if you **SPIN** it your bonus is ${e://Field/High} for sure. If you **DON'T SPIN** it, you are guaranteed to receive ${e://Field/Safe}.
- 0 ${e://Field/ColorHigh} sectors, if you **DON'T SPIN** it you are guaranteed ${e://Field/Safe}. If you **SPIN** it, your bonus is ${e://Field/Low} for sure.

Without knowing which wheel has been selected, you will be asked which wheels you want to **SPIN** for your bonus, and which ones you **DON'T** want to **SPIN**.

Q11 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

practice

You will be asked the following question:

Which wheels do you prefer to SPIN for your bonus?

I prefer to SPIN wheels which have at ☐ *least ${e://Field/ColorHigh} sectors.*

*If the randomly selected wheel has **fewer than … ${e://Field/ColorHigh} sectors**, I **DON'T SPIN** it. I receive ${e://Field/Safe}.*
*If the randomly selected wheel has **… or more ${e://Field/ColorHigh} sectors**, I **SPIN** it. I receive ${e://Field/High} if the wheel lands on ${e://Field/ColorHigh}, and ${e://Field/Low} if it lands on ${e://Field/ColorLow}.*

Q13 You can **practice** by introducing integers between 0 and 15 in the box above. When you introduce a number, all wheels with fewer ${e://Field/ColorHigh} sectors than your answer will be grayed out, indicating that you prefer DON'T SPIN for those wheels. The wheels with the same number or more ${e://Field/ColorHigh} sectors than your answer will not be affected, indicating that you prefer SPIN if one of those wheels is selected.

At the end of the study you will be told which wheel has been selected. Its number of ${e://Field/ColorHigh} sectors will be compared to your answer, and your bonus will be determined by the relevant option (SPIN or DON'T SPIN).

Your **input on this screen** is simply for you to practice and it **doesn't affect your bonus**. You **don't have to memorize** this explanation: a non-interactive version like the one linked below under "View explanation" will be available whenever relevant.

View explanation

Q14 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Part 1 Intro

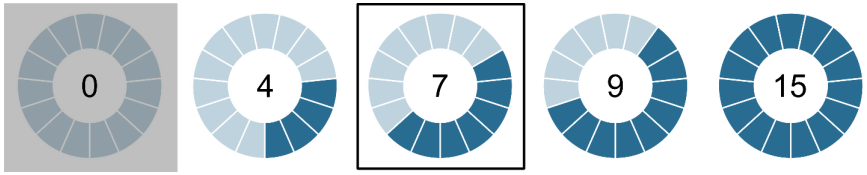
Start of Block: Trial 1

Q15
The comprehension questions will start on the next screen.

Q16 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

comp1First



Comprehension Question 1

Consider the wheels above. Let's assume you stated that you want to SPIN wheels with at least 3 ${e://Field/ColorHigh} sectors for your bonus. For this reason, wheels with fewer than 3 ${e://Field/ColorHigh} sectors are grayed out. The wheel with 7 ${e://Field/ColorHigh} sectors has been randomly selected (the wheel with a black border).

Please select **all that apply**.

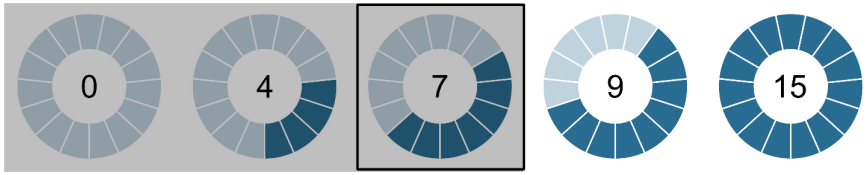
View explanation

- I DON'T SPIN the selected wheel. (1)
- I SPIN the selected wheel. (2)
- My bonus is ${e://Field/Low}. (3)
- My bonus is ${e://Field/Safe}. (4)
- My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. (5)
- My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. (6)

Q18 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

comp2First



Comprehension Question 2

Consider the wheels above. Let's assume you stated that you want to SPIN wheels with at least 8 ${e://Field/ColorHigh} sectors for your bonus. For this reason, wheels with fewer than 8 ${e://Field/ColorHigh} sectors are grayed out. The wheel with 7 ${e://Field/ColorHigh} sectors has been randomly selected (the wheel with a black border).

Please select **all that apply**.

View explanation

- [ ] I DON'T SPIN the selected wheel. (1)
- [ ] I SPIN the selected wheel. (2)
- [ ] My bonus is ${e://Field/Low}. (3)
- [ ] My bonus is ${e://Field/Safe}. (4)
- [ ] My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. (5)
- [ ] My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. (6)

Q20 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

comp3First Comprehension Question 3
Please select the correct statement from each of the following pairs.

View explanation

- Each wheel is **equally likely** to be selected. (1)
- Some wheels are **more likely** to be selected than others. (0)

comp4First

- I **can** influence the chance that a particular wheel is selected. (0)
- I **can't** influence the chance that a particular wheel is selected. (1)

comp5First

- I get to spin the selected wheel **regardless of** whether it is in the grayed out area or not. (0)
- I get to spin the selected wheel **only if** it's not in the grayed out area. (1)

comp6First

- If I get to spin the selected wheel, it is **equally likely** to land on each sector. (1)
- If I get to spin the selected wheel, it is **more likely** to land on sectors which are initially around 12 o'clock. (0)

comp7First

- ○ My bonus is ${e://Field/High} if the selected wheel is in the **grayed out** area and the selected wheel lands on **${e://Field/ColorLow}**. (0)
- ○ My bonus is ${e://Field/High} if the selected wheel is in the **non-grayed out** area and the selected wheel lands on **${e://Field/ColorHigh}**. (1)

Q26 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Trial 1

Start of Block: Trial 2

Display This Question:

If Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... != I SPIN the selected wheel.

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... != My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}.

Or If

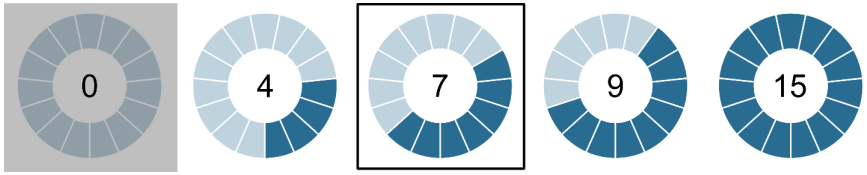
Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... = I DON'T SPIN the selected wheel.

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... = My bonus is ${e://Field/Low}.

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... = My bonus is ${e://Field/Safe}.

Or Comprehension Question 1 Consider the wheels above. Let's assume you stated that you want to... = My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}.

comp1Sec
Your answer below is not correct. You can give it another try.



Comprehension Question 1
Consider the wheels above. Let's assume you stated that you want to SPIN wheels with at least 3 ${e://Field/ColorHigh} sectors for your bonus. For this reason, wheels with fewer than 3 ${e://Field/ColorHigh} sectors are grayed out. The wheel with 7 ${e://Field/ColorHigh} sectors has been randomly selected (the wheel with a black border).

Please select **all that apply**.

View explanation

- ☐ I DON'T SPIN the selected wheel. (1)
- ☐ I SPIN the selected wheel. (2)
- ☐ My bonus is ${e://Field/Low}. (3)
- ☐ My bonus is ${e://Field/Safe}. (4)
- ☐ My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. (5)
- ☐ My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. (6)

Q28 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

Display This Question:

If Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... != I DON'T SPIN the selected wheel.

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... != My bonus is ${e://Field/Safe}.

Or If

Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... = I SPIN the selected wheel.

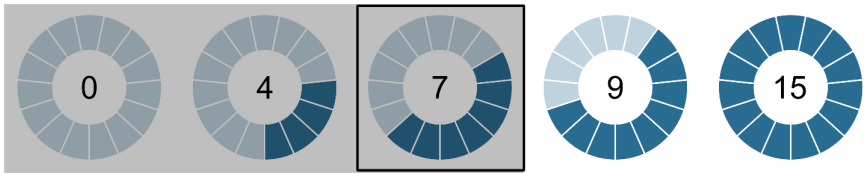
Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... = My bonus is ${e://Field/Low}.

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... = My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}.

Or Comprehension Question 2 Consider the wheels above. Let's assume you stated that you want to... = My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}.

JS X→

comp2Sec
Your answer below is not correct. You can give it another try.



Comprehension Question 2

Consider the wheels above. Let's assume you stated that you want to SPIN wheels with at least 8 ${e://Field/ColorHigh} sectors for your bonus. For this reason, wheels with fewer than 8 ${e://Field/ColorHigh} sectors are grayed out. The wheel with 7 ${e://Field/ColorHigh} sectors has been randomly selected (the wheel with a black border).

Please select **all that apply**.

View explanation

- [ ] I DON'T SPIN the selected wheel. (1)
- [ ] I SPIN the selected wheel. (2)
- [ ] My bonus is ${e://Field/Low}. (3)
- [ ] My bonus is ${e://Field/Safe}. (4)
- [ ] My bonus is ${e://Field/High} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Low} if it lands on ${e://Field/ColorLow}. (5)
- [ ] My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorHigh}, ${e://Field/Safe} if it lands on ${e://Field/ColorLow}. (6)

Q30 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

Display This Question:

If Comprehension Question 3 Please select the correct statement from each of the following pairs.... != Each wheel is equally likely to be selected.

Or Click to write the question text != I can't influence the chance that a particular wheel is selected.

Or Click to write the question text != I get to spin the selected wheel only if it's not in the grayed out area.

Or Click to write the question text != If I get to spin the selected wheel, it is equally likely to land on each sector.

Or Click to write the question text != My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on ${e://Field/ColorHigh}.

JS X→

comp3Sec
Your answer(s) below is (are) not correct. You can give it another try.

Comprehension Question 3
Please select the correct statement from each of the following pairs.
View explanation

- ( ) Each wheel is **equally likely** to be selected. (1)
- ( ) Some wheels are **more likely** to be selected than others. (0)

Display This Question:

If Comprehension Question 3 Please select the correct statement from each of the following pairs.... != Each wheel is equally likely to be selected.

Or Click to write the question text != I can't influence the chance that a particular wheel is selected.

Or Click to write the question text != I get to spin the selected wheel only if it's not in the grayed out area.

Or Click to write the question text != If I get to spin the selected wheel, it is equally likely to land on each sector.

Or Click to write the question text != My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on ${e://Field/ColorHigh}.

JS X→

comp4Sec

- I **can** influence the chance that a particular wheel is selected. (0)
- I **can't** influence the chance that a particular wheel is selected. (1)

Display This Question:

If Comprehension Question 3 Please select the correct statement from each of the following pairs.... != Each wheel is equally likely to be selected.

Or Click to write the question text != I can't influence the chance that a particular wheel is selected.

Or Click to write the question text != I get to spin the selected wheel only if it's not in the grayed out area.

Or Click to write the question text != If I get to spin the selected wheel, it is equally likely to land on each sector.

Or Click to write the question text != My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on ${e://Field/ColorHigh}.

JS X→

comp5Sec

- I get to spin the selected wheel **regardless of** whether it is in the grayed out area or not. (0)
- I get to spin the selected wheel **only if** it's not in the grayed out area. (1)

Display This Question:

If Comprehension Question 3 Please select the correct statement from each of the following pairs.... != Each wheel is equally likely to be selected.

Or Click to write the question text != I can't influence the chance that a particular wheel is selected.

Or Click to write the question text != I get to spin the selected wheel only if it's not in the grayed out area.

Or Click to write the question text != If I get to spin the selected wheel, it is equally likely to land on each sector.

Or Click to write the question text != My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on ${e://Field/ColorHigh}.

JS X→

comp6Sec

- If I get to spin the selected wheel, it is **equally likely** to land on each sector. (1)
- If I get to spin the selected wheel, it is **more likely** to land on sectors which are initially around 12 o'clock. (0)

Display This Question:

If Comprehension Question 3 Please select the correct statement from each of the following pairs.... != Each wheel is equally likely to be selected.

Or Click to write the question text != I can't influence the chance that a particular wheel is selected.

Or Click to write the question text != I get to spin the selected wheel only if it's not in the grayed out area.

Or Click to write the question text != If I get to spin the selected wheel, it is equally likely to land on each sector.

Or Click to write the question text != My bonus is ${e://Field/High} if the selected wheel is in the non-grayed out area and the selected wheel lands on <strong>${e://Field/ColorHigh}.

JS X→

comp7Sec

- My bonus is ${e://Field/High} if the selected wheel is in the **grayed out** area and the selected wheel lands on **${e://Field/ColorLow}**. (0)
- My bonus is ${e://Field/High} if the selected wheel is in the **non-grayed out** area and the selected wheel lands on **${e://Field/ColorHigh}**. (1)

Q36 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Trial 2

Start of Block: Part 2 Intro

Q37
You have answered all questions in Part 1 correctly.
You will now be directed to Part 2.

JS

Q38 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

Q39 **Part 2**

In this part, you will be asked

- How you want your bonus to be determined **in three different situations**. Choose your most preferred option from those available. There are no right or wrong answers to these questions.
- Reasoning questions and questions about yourself.

At the end of Part 2, **one of the three situations will be randomly selected**, and your bonus will be determined according to your answer in that situation. Each of the three situations is equally likely to be selected.

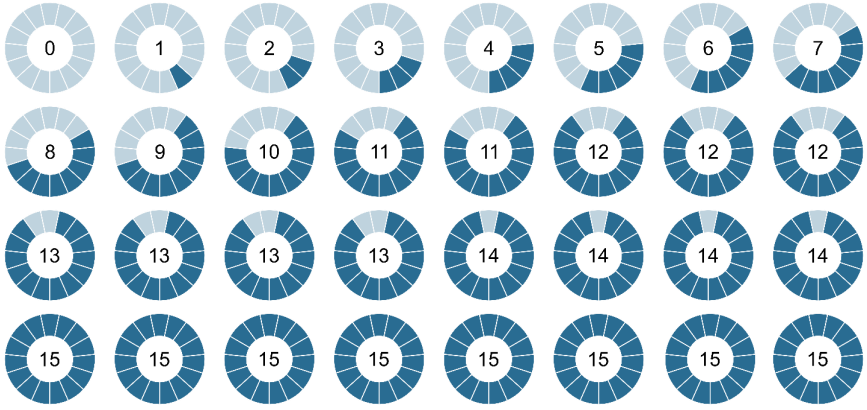
Q40 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Part 2 Intro

Start of Block: Left_skew

JS

mapL



Consider the wheels above. Which wheels do you prefer to SPIN for your bonus?
Please enter an integer between 0 and 15.

I prefer to SPIN wheels which have at least ____ ${e://Field/ColorHigh} sectors.

JS

Q42 If the randomly selected wheel has fewer than ... ${e://Field/ColorHigh} sectors, I DON'T SPIN it. My bonus is ${e://Field/Safe}.
If the randomly selected wheel has ... or more ${e://Field/ColorHigh} sectors, I SPIN it. My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorLow}, and ${e://Field/High} if it lands on ${e://Field/ColorHigh}.
View explanation

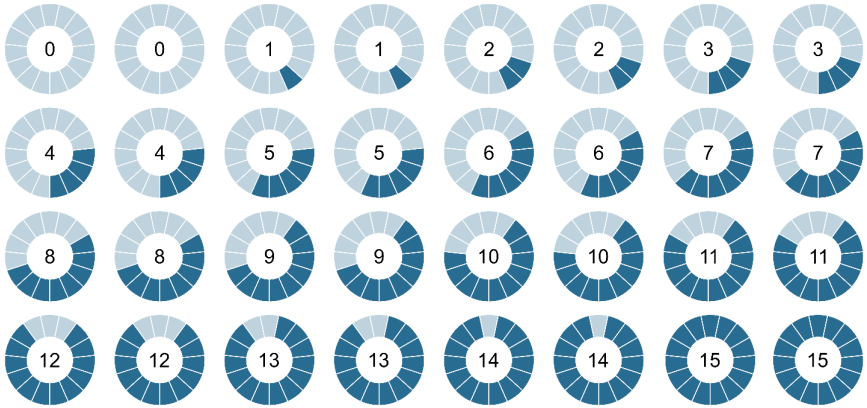
Q43 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Left_skew

Start of Block: Uniform

JS

mapU



Consider the wheels above. Which wheels do you prefer to SPIN for your bonus?
Please enter an integer between 0 and 15.

I prefer to SPIN wheels which have at least ____ ${e://Field/ColorHigh} sectors.

JS

Q45 If the randomly selected wheel has fewer than ... ${e://Field/ColorHigh} sectors, I DON'T SPIN it. My bonus is ${e://Field/Safe}.
If the randomly selected wheel has ... or more ${e://Field/ColorHigh} sectors, I SPIN it. My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorLow}, and ${e://Field/High} if it lands on ${e://Field/ColorHigh}.
View explanation

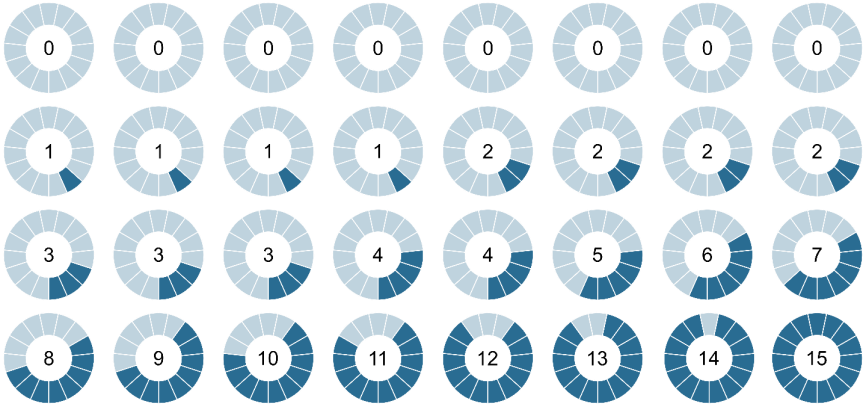
Q46 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Uniform

Start of Block: Right_skew

JS

mapR



Consider the wheels above. Which wheels do you prefer to SPIN for your bonus?
Please enter an integer between 0 and 15.

I prefer to SPIN wheels which have at least ____ ${e://Field/ColorHigh} sectors.

JS

Q48 If the randomly selected wheel has fewer than ... ${e://Field/ColorHigh} sectors, I DON'T SPIN it. My bonus is ${e://Field/Safe}.
If the randomly selected wheel has ... or more ${e://Field/ColorHigh} sectors, I SPIN it. My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorLow}, and ${e://Field/High} if it lands on ${e://Field/ColorHigh}.
View explanation

Q49 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Right_skew

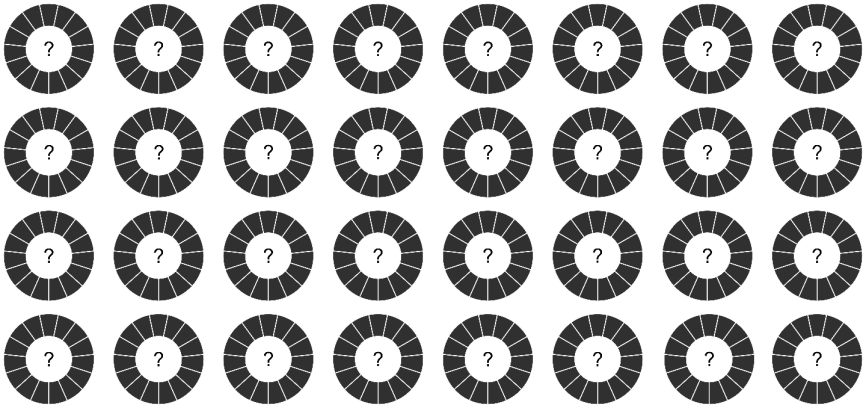
Start of Block: Ambiguity aversion

Q50
The reasoning questions and questions about yourself will start on the next screen.

Q51 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

mapA



The scenario described below is **hypothetical**: your answer **doesn't influence your bonus**. Imagine 32 wheels of fortune with 15 sectors each. Like before, their sectors are either ${e://Field/ColorLow} (worth ${e://Field/Low}) or ${e://Field/ColorHigh} (worth ${e://Field/High}). However, the sectors' color is hidden, so you **don't know how many ${e://Field/ColorHigh}** or **${e://Field/ColorLow} sectors** each wheel has. One of the 32 wheels will be selected at random: depending on your answer to the question below, you SPIN the wheel or you DON'T SPIN it.

In this case, which wheels would you prefer to SPIN for your bonus?
Please enter an integer between 0 and 15.

I prefer to SPIN wheels which have at least ____ ${e://Field/ColorHigh} sectors.

Q53 If the randomly selected wheel has fewer than ... ${e://Field/ColorHigh} sectors, I DON'T SPIN it. My bonus is ${e://Field/Safe}.
If the randomly selected wheel has ... or more ${e://Field/ColorHigh} sectors, I SPIN it. My bonus is ${e://Field/Low} if the selected wheel lands on ${e://Field/ColorLow}, and ${e://Field/High} if it lands on ${e://Field/ColorHigh}.

Q54 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Ambiguity aversion

Start of Block: CRT_adapted

crtPlants Please answer the following questions.

Simon had 17 plants at home and all but 8 died. How many are left?

crtClaire Claire's grandmother has three granddaughters. The first two are named April and May. What is the third granddaughter's name?

crtRace
If you're running a race and you pass the person in second place, what place are you in? (type in the **number** of the place)

crtPetri A scientist grows bacteria on a Petri dish. Every day, the area covered by bacteria doubles in size. If it takes 6 days for the entire dish to be covered, how long would it take for half of the dish to be covered?

_____

Q59 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: CRT_adapted

Start of Block: Risk + degree

subject What subject did you study for your most recent degree?

▼ Accounting (1) ... Veterinary Medicine (57)

JS X→

riskAversion
How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks? completely unwilling to take risks very willing to take risks

- 0 (0)
- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 (6)
- 7 (7)
- 8 (8)
- 9 (9)
- 10 (10)

Q62 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Risk + degree

Start of Block: Aspiration

JS

anyAspiration Which of the following do you take into consideration when deciding whether to take part in a study? Please select all that apply.

- [ ] Total pay (1)
- [ ] Pay per hour (2)
- [ ] Other things, such as (3) _____

Display This Question:

If Which of the following do you take into consideration when deciding whether to take part in a stu... = Total pay

JS ✱

aspirTotal What is the **minimum total pay** for which you are willing to take part in a study?

_____

Display This Question:

If Which of the following do you take into consideration when deciding whether to take part in a stu... = Pay per hour

JS ✱

aspirPerHour What is the **minimum pay per hour** for which you are willing to take part in a study?

_____

Q66 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Aspiration

Start of Block: Anchoring_HighSun_LowTemp

Q67 The next questions are about general facts that you may or may not know. Please give your best estimates. We also ask that you please not look up the answers; we are interested in people's estimates, whether or not they are accurate.

anchorTempL Do you think that the **average daily temperature in June** in Amsterdam, the Netherlands, between 1971 and 2020 was higher or lower than 14°C?

- ○ Higher (1)
- ○ Lower (2)

JS ✱

quantTempL What do you think was the **average daily temperature** in June in Amsterdam in this period?

_____°C

anchorSunH Do you think that the number of **average daily hours of sunshine in June** in Amsterdam, the Netherlands, between 1971 and 2020 was higher or lower than 10?

- ○ Higher (1)
- ○ Lower (2)

JS ✱

quantSunHHour What do you think was the number of **average daily hours of sunshine in June** in Amsterdam in this period?

_____ hour(s) and

✱

quantSunHMin

_____ minute(s)

Q73 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Anchoring_HighSun_LowTemp

Start of Block: Anchoring_LowSun_HighTemp

Q74 The next questions are about general facts that you may or may not know. Please give your best estimates. We also ask that you please not look up the answers; we are interested in people's estimates, whether or not they are accurate.

anchorTempH Do you think that the **average daily temperature in June** in Amsterdam, the Netherlands, between 1971 and 2020 was higher or lower than 17°C?

- Higher (1)
- Lower (2)

JS *

quantTempH What do you think was the **average daily temperature** in June in Amsterdam in this period?

_____°C

anchorSunL Do you think that the number of **average daily hours of sunshine in June** in Amsterdam, the Netherlands, between 1971 and 2020 was higher or lower than 4?

- Higher (1)
- Lower (2)

JS *

quantSunLHour What do you think was the number of **average daily hours of sunshine in June** in Amsterdam in this period?

_____ hour(s)
and

*

quantSunLMin

_____ minute(s)

Q80 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Anchoring_LowSun_HighTemp

Start of Block: Optimism

JS

Q81
For the questions below, please be as honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no

"correct" or "incorrect" answers. Answer according to your own feelings, rather than how you think "most people" would answer.

	I disagree a lot (1)	I disagree a little (2)	I neither agree nor disagree (3)	I agree a little (4)	I agree a lot (5)
In uncertain times, I usually expect the best. (optim1)	○	○	○	○	○
It's easy for me to relax. (optim2)	○	○	○	○	○
If something can go wrong for me, it will. (optim3)	○	○	○	○	○
I'm always optimistic about my future. (optim4)	○	○	○	○	○
I enjoy my friends a lot. (optim5)	○	○	○	○	○

Q82 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

JS

Q83 Click to write the question text

	I disagree a lot (1)	I disagree a little (2)	I neither agree nor disagree (3)	I agree a little (4)	I agree a lot (5)
It's important for me to keep busy. (optim6)	○	○	○	○	○
I hardly ever expect things to go my way. (optim7)	○	○	○	○	○
I don't get upset too easily. (optim8)	○	○	○	○	○
I rarely count on good things happening to me. (optim9)	○	○	○	○	○
Overall, I expect more good things to happen to me than bad. (optim10)	○	○	○	○	○

Q84 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Optimism

Start of Block: Sensation_seeking

JS

Q85 Click to write the question text

	I disagree a lot (1)	I disagree a little (2)	I neither agree nor disagree (3)	I agree a little (4)	I agree a lot (5)
I would like to explore strange places. (sensSeek1)	○	○	○	○	○
I like to do frightening things. (sensSeek2)	○	○	○	○	○
I like new and exciting experiences, even if I have to break the rules. (sensSeek3)	○	○	○	○	○
I prefer friends who are exciting and unpredictable. (sensSeek4)	○	○	○	○	○

Q86 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Sensation_seeking

Start of Block: Resolution

Q87
On the next screen, you will be informed

- **which of three situation**s has been selected, and
- **which wheel** from that situation has been selected.

Q88 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

Page Break

JS

Q89 The situation below has been randomly selected. In this situation, you stated that you prefer to spin the wheel if it has **at least** . The randomly selected wheel is the one surrounded by a black border.

Note: The image displayed here depends on (1) which of the three distributions is randomly drawn to matter for the participant's payoff, (2) the participant's MAP in that situation and (3) which wheel is randomly selected. Depending on how (2) and (3) compare, the participant either earns £2 or spins wheel (3) on the following screen.

Q90 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Resolution

Start of Block: Spin

JS

finalSpin Spin the selected wheel to determine your bonus. If you wish, you can try it out a couple of times before the final spin, which is the one that counts.

Note: The wheel displayed here is the randomly selected wheel, provided that the participant's MAP is lower or equal to the number of dark blue sectors in the selected wheel.

Q92 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Spin

Start of Block: Success

JS

commSuccess
We thank you for your time spent taking this survey. Your response has been recorded.
If you have any comments, please write them in the box below.

_____

_____

_____

_____

_____

JS

distrSuccess If you would like to be informed about the earnings of all participants in this study, please select the option below. We will send you the earnings distribution via Prolific no later than a week after the last submission.

○ I would like to be informed about the earnings distribution in this study. (1)

Q95 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Success

Start of Block: Failed_both_trials

Q96
This is the end of Part 1. Some of your answers were incorrect, so this is also the end of the

study.
We thank you or your time spent taking this survey.

JS

distrFail If you would like to be informed about the earnings of all participants in this study please select the option below. We will send you the earnings distribution via Prolific no later than a week after the last submission.

- ○ I would like to be informed about the earnings distribution in this study. (1)

Q98 Timing
First Click (1)
Last Click (2)
Page Submit (3)
Click Count (4)

End of Block: Failed_both_trials