Online Appendix A: Complete experimental materials for all studies and conditions

This document has all the experimental materials for the paper "Intertemporal Uncertainty Avoidance: When the Future is Uncertain, People Prefer the Present, and When the Present is Uncertain, People Prefer the Future". The first half of the document, Section 1, contains the materials for the measures and results presented in the main paper. Several additional measures were collected and several additional studies were conducted, which were cut from the paper for brevity and clarity. Section 2 (starting on pg 11) contains the complete methods for all studies, and the materials for the additional measures (those not already covered in Section 1).

Section 1:

Experimental materials for measures and results in the main paper

[Attention check, used in all Studies 1, 2 & 3**]**

Sports Participation

Most modern theories of decision making recognize the fact that decisions do not take place in a vacuum. Individual preferences and knowledge, along with situational variables can greatly impact the decision process. In order to facilitate our research on decision making we are interested in knowing certain factors about you, the decision maker. Specifically, we are interested in whether you actually take the time to read the directions; if not, then some of our manipulations that rely on changes in the instructions will be ineffective. So, in order to demonstrate that you have read the instructions, please ignore the sports items below, as well as the continue button. Instead, simply click on the title at the top of this screen (i.e., "sports participation") to proceed to the next screen. Thank you very much.

Which of these activities do you engage in regularly?
(check all that apply)

☐ skiing	☐ soccer	☐ snowboarding	☐ running	☐ hockey
☐ football	☐ swimming	☐ tennis	☐ basketball	☐ cycling

[Intertemporal choice for small gains (under certainty), used in Studies 1-3**]**

Small Investments

Please imagine you face a set of choices about receiving $100 from investments immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:

1. ○ Receive $100 immediately OR ○ Receive $90 in 1 year
2. ○ Receive $100 immediately OR ○ Receive $100 in 1 year
3. ○ Receive $100 immediately OR ○ Receive $110 in 1 year
4. ○ Receive $100 immediately OR ○ Receive $125 in 1 year
5. ○ Receive $100 immediately OR ○ Receive $150 in 1 year
6. ○ Receive $100 immediately OR ○ Receive $200 in 1 year

[Intertemporal choice for small losses (under certainty), used in Studies 1-3**]**

Small Bills

Please imagine you face a set of choices about paying a $100 bill immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:

1. ○ Pay $100 immediately OR ○ Pay $90 in 1 year
2. ○ Pay $100 immediately OR ○ Pay $100 in 1 year
3. ○ Pay $100 immediately OR ○ Pay $110 in 1 year
4. ○ Pay $100 immediately OR ○ Pay $125 in 1 year
5. ○ Pay $100 immediately OR ○ Pay $150 in 1 year
6. ○ Pay $100 immediately OR ○ Pay $200 in 1 year

[Intertemporal choice for small gains with future uncertainty, used in Study 1**]**

Uncertain Small Investments

Please imagine you face a set of choices about receiving $100 from investments immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of receiving it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:

1. ○ Receive $100 immediately OR ○ 50% chance of receiving $180 in 1 year
2. ○ Receive $100 immediately OR ○ 50% chance of receiving $200 in 1 year
3. ○ Receive $100 immediately OR ○ 50% chance of receiving $220 in 1 year
4. ○ Receive $100 immediately OR ○ 50% chance of receiving $250 in 1 year
5. ○ Receive $100 immediately OR ○ 50% chance of receiving $300 in 1 year
6. ○ Receive $100 immediately OR ○ 50% chance of receiving $400 in 1 year

[Intertemporal choice for small losses with future uncertainty, used in Study 1**]**

Uncertain Small Bills

Please imagine you face a set of choices about paying a $100 bill immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of paying it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:

1. ○ Pay $100 immediately OR ○ 50% chance of paying $180 in 1 year
2. ○ Pay $100 immediately OR ○ 50% chance of paying $200 in 1 year
3. ○ Pay $100 immediately OR ○ 50% chance of paying $220 in 1 year
4. ○ Pay $100 immediately OR ○ 50% chance of paying $250 in 1 year
5. ○ Pay $100 immediately OR ○ 50% chance of paying $300 in 1 year
6. ○ Pay $100 immediately OR ○ 50% chance of paying $400 in 1 year

[Intertemporal choice for small gains with immediate uncertainty, used in Study 2**]**

Uncertain Small Investments

Please imagine you face a set of choices about receiving $200 from investments immediately that would be uncertain (only a 50% chance of receiving it, which would be determined randomly), or another amount 1 year from now that would be for sure. Please indicate which option you would choose in each case:

1. ○ 50% chance of receiving $200 immediately OR ○ Receive $90 for sure in 1 year
2. ○ 50% chance of receiving $200 immediately OR ○ Receive $100 for sure in 1 year
3. ○ 50% chance of receiving $200 immediately OR ○ Receive $110 for sure in 1 year
4. ○ 50% chance of receiving $200 immediately OR ○ Receive $125 for sure in 1 year
5. ○ 50% chance of receiving $200 immediately OR ○ Receive $150 for sure in 1 year
6. ○ 50% chance of receiving $200 immediately OR ○ Receive $200 for sure in 1 year

[Intertemporal choice for small losses with immediate uncertainty, used in Study 2**]**

Uncertain Small Bills

Please imagine you face a set of choices about paying a $200 bill immediately that would be uncertain (only a 50% chance of paying it, which would be determined randomly), or another amount 1 year from now that would be for sure. Please indicate which option you would choose in each case:

1. ○ 50% chance of paying $200 immediately OR ○ Pay $90 for sure in 1 year
2. ○ 50% chance of paying $200 immediately OR ○ Pay $100 for sure in 1 year
3. ○ 50% chance of paying $200 immediately OR ○ Pay $110 for sure in 1 year
4. ○ 50% chance of paying $200 immediately OR ○ Pay $125 for sure in 1 year
5. ○ 50% chance of paying $200 immediately OR ○ Pay $150 for sure in 1 year

6. ○ 50% chance of paying $200 immediately OR ○ Pay $200 for sure in 1 year

[Intertemporal choice for small gains with immediate and future uncertainty, used in Study 3**]**

Uncertain Small Investments

Please imagine you face a set of choices about uncertain investments, possibly receiving $200 from investments immediately, or another amount 1 year from now. In each case, there is only a 50% chance of actually receiving the money (determined randomly). If you choose the immediate option, you will find out immediately whether it pays off or not, whereas if you choose the future option, you will find out in one year if it pays off. Please indicate which option you would choose in each case:

1.	○ 50% chance of receiving $200 immediately	OR	○ 50% chance of receiving $180 in 1 year
2.	○ 50% chance of receiving $200 immediately	OR	○ 50% chance of receiving $200 in 1 year
3.	○ 50% chance of receiving $200 immediately	OR	○ 50% chance of receiving $220 in 1 year
4.	○ 50% chance of receiving $200 immediately	OR	○ 50% chance of receiving $250 in 1 year
5.	○ 50% chance of receiving $200 immediately	OR	○ 50% chance of receiving $300 in 1 year
6.	○ 50% chance of receiving $200 immediately	OR	○ 50% chance of receiving $400 in 1 year

[Intertemporal choice for small losses with immediate and future uncertainty, used in Study 3**]**

Uncertain Small Bills

Please imagine you face a set of choices about uncertain bills, possibly paying a $200 bill immediately, or another amount 1 year from now. In each case, there is only a 50% chance of actually paying the money (determined randomly). If you choose the immediate option, you will find out immediately whether it must be paid or not, whereas if you choose the future option, you will find out in one year if it must be paid. Please indicate which option you would choose in each case:

1.	○ 50% chance of paying $200 immediately	OR	○ 50% chance of paying $180 in 1 year
2.	○ 50% chance of paying $200 immediately	OR	○ 50% chance of paying $200 in 1 year
3.	○ 50% chance of paying $200 immediately	OR	○ 50% chance of paying $220 in 1 year
4.	○ 50% chance of paying $200 immediately	OR	○ 50% chance of paying $250 in 1 year
5.	○ 50% chance of paying $200 immediately	OR	○ 50% chance of paying $300 in 1 year
6.	○ 50% chance of paying $200 immediately	OR	○ 50% chance of paying $400 in 1 year

[Demographic questions, used in Studies 1-3**]**

1. Your gender:

- Female
- Male

2. What is your age?

_____ years old

3. Your marital status:

- Single
- Living together
- Married
- Divorced or living separated
- Widowed

4. What is your annual household income? (optional)

- less than $14,999
- $15,000 - $24,999
- $25,000 - $34,999
- $35,000 - $49,999
- $50,000 - $99,999
- $100,000 - $199,999
- greater than $200,000

5. What is your highest completed level of education?

- No degree
- High school diploma
- Associate degree, occupational
- Associate degree, academic
- Bachelor's degree
- Master's degree

- Professional degree
- Doctoral degree

6. What is your primary ethnicity?

- American Indian or Alaskan Native
- Asian
- Black or African American
- Caucasian/White
- Hispanic or Latin American
- Other

7. What is your political affiliation?

- Democrat
- Republican
- Independent
- Libertarian
- Green
- Other

8. Do you smoke cigarettes or otherwise use tobacco products? If so, how often?

- Never
- Rarely
- About once a month
- About once a week
- Daily, or almost every day

9. Imagine that you had to pay an unexpected bill immediately. For example, suppose that you needed an expensive medical treatment that was not covered by insurance. Considering all possible resources available to you (including savings, borrowing, etc.), what is the **maximum** amount that you could come up with on short notice?

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10. What is your current employment status?

- Working full time
- Working part time
- Not currently employed

11. Which of the following categories best describes your current employment?

- No job / Unemployed
- Working in household
- Student
- Academic (teacher or researcher)
- Office worker
- Government employee
- Manager
- Entrepreneur
- Other

12. If you are currently working, how long have you been at your current job? Otherwise, if you are not employed, how long have you been out of the labor force?

- Less than one month
- Between one month and six months
- Between six months and one year
- Between one year and five years
- More than five years

[Additional demographic questions, collected in Study 2**]**

13. How many children do you have?

14. What is your primary ethnicity?

- Black or African American
- American Indian or Alaskan Native
- White
- Hispanic or Latin American
- Asian
- Other

15. What is your political affiliation?

- Democrat
- Republican
- Independent
- Libertarian
- Green
- Other

16. All things considered, do you now feel economically secure?

- Definitely Yes
- Yes
- Maybe yes
- Unsure
- Maybe no
- No
- Definitely No

17. How much do you agree with the following statement:
"I feel I have lost all control over my economic future."

- Strongly Agree
- Agree
- Agree a little
- Neutral
- Disagree a little

- Disagree
- Strongly Disagree

18. Which of the following categories best describes your current area of employment?

- Advertising, Branding, and Marketing
- Apparel, Textiles, and Fashions
- Automobiles and Trucks
- Cellular Telephone and Telecommunications
- Chemicals, Coatings, and Plastics
- Computers, Internet, E-Commerce, and InfoTech
- Consulting, Outsourcing, and Offshoring
- Construction
- Education
- Energy, Oil and Gas, Utilities, Renewable, and Alternative Energy
- Engineering, Research, Development, and Nanotechnology
- Entertainment and Media
- Financial Services, Banking, Insurance, Investments, Mortgages, and Real Estate
- Food, Beverages, and Tobacco
- Government and Military
- Health Care, Biotechnology, and Drugs
- Job Seekers, Careers, and Employment
- Non-profit
- Retailing
- Sports Industry
- Transportation
- Travel, Airlines, Hotels, and Tourism
- Other

19. Roughly how large is the organization that you work for? In other words, how many people are employed by your organization? Please give your best estimate.

- 1 (self employed)

- 2 to 9
- 10 to 19
- 20 to 99
- 100 to 499
- 500 or more
- N/A

20. Roughly how old is the organization that you work for? In other words, how long has your employer been in operation? Please give your best estimate.

- less than 1 year
- 1 to 5 years
- 5 to 20 years
- 20 to 50 years
- more than 50 years
- N/A

21. How much do you agree with the following statement:
"There's a good chance I could lose my job in the next couple of years."

- Strongly Agree
- Agree
- Agree a little
- Neutral
- Disagree a little
- Disagree
- Strongly Disagree

22. What is the probability you will lose your job in the next 12 months?

_____% chance

Section 2:

Full experimental methods and additional materials for all studies conducted, including those not presented in the main paper

In addition to Studies 1-4, presented in the main paper, we also ran 3 other studies, labeled below as 2S, 4S, and 5S. Study numbers were chosen for ease of exposition in the main paper. The actual chronological order we ran the studies was as follows: Study 1, Study 2S, Study 3, Study 2, Study 5S, Study 4S, Study 4.

[Study 1**]**

Method

A sample of 150 U.S. residents (mean age = 45, *SD*=15) was recruited from Amazon Mechanical Turk and Survey Sampling International for a study on decision making. Participants were only eligible to participate if they were at least 18 years old, passed an attention check (similar to Oppenheimer, Meyvis, & Davidenko, 2009) on the first page of the study, and were completing the first time from that IP address (i.e., no repeat participants). These eligibility criteria were used for all studies. Participants completed several different tasks, in counterbalanced order. The overall design was a 2 (presence of uncertainty, within subjects) x 2 (type of uncertainty, between subjects) x 2 (sign, within subjects) x 2 (magnitude, within subjects).

Studies 1, 2S, and 3 were run together with another project, exploring the effects of organizational role on decision making biases, which will not be further discussed or reported in this manuscript. Target sample sizes for each study were chosen based on intuition of what would be a healthy sample size given the number of conditions and the results (e.g., variance) of previous studies. For each study, data collection was entirely completed before commencing data analysis. Furthermore, there are no unreported ("file drawer") studies on this project – all the studies we ran are reported here.

Intertemporal choice scenarios

All participants responded to four intertemporal choice scenarios, in counterbalanced order: small gain, large gain, small loss, and large loss. In the small gain scenario, participants read the instruction, "Please imagine you face a set of choices about receiving $100 from investments immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:" This was followed by six intertemporal choices (detailed in Online Supplemental A), such as "Receive $100 immediately OR receive $110 in 1 year." In the small loss scenario, participants read the instruction, "Please imagine you face a set of choices about paying a $100 bill immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:" This was followed by six intertemporal choices (detailed in Online Supplemental A), such as "Pay $100 immediately OR pay $110 in 1 year." The large gain and large loss scenarios were identical, except that all amounts were 100 times larger. The dependent variable was the proportion of choices for the immediate option.

Intertemporal choice scenarios with future uncertainty

All participants also responded to four intertemporal choice scenarios involving uncertain future outcomes, which were structured the same as the regular intertemporal choice questions (with small and large gains and losses). Participants were randomly assigned to one of two different uncertainty conditions: probabilistic outcomes or variable outcomes.

In the probabilistic condition, the future options were twice as large, but only had a 50% chance of occurring (for the complete list of choice options, see Online Supplemental A). Thus, the expected value of the options was the same in the certainty and uncertainty conditions. For example, at the beginning of the small probabilistic gain scenario, participants read the

instruction, "Please imagine you face a set of choices about receiving $100 from investments immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of receiving it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:" The instructions for the large magnitude condition were the same except that the amount was $10,000, and the instructions for the loss conditions were the same except that they concerned paying a bill. There were six intertemporal choice pairs for each scenario, such as "Receive $100 immediately OR 50% chance of receiving $220 in 1 year."

In the variability condition, all outcomes were certain to occur, but the exact amounts of the future outcomes were uncertain. (Specifically, the uncertain amounts ranged from -50% to +50% of the base amount.) For example, the instructions in the small gain condition were "Please imagine you face a set of choices about receiving $100 from investments immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly, one year from now.) Please indicate which option you would choose in each case:" An example choice pair was "Receive $100 immediately OR receive $55 to $165 in 1 year." The instructions and choice pairs for the loss scenarios were similar.

[The following are the Study 1 stimuli that are not already listed above in Section 1.]

[Intertemporal choice for large gains (under certainty), used in Studies 1, 2S, 2, and 3**]**

Large Investments

Please imagine you face a set of choices about receiving $10,000 from investments immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:

1. ○ Receive $10,000 immediately OR ○ Receive $9,000 in 1 year
2. ○ Receive $10,000 immediately OR ○ Receive $10,000 in 1 year
3. ○ Receive $10,000 immediately OR ○ Receive $11,000 in 1 year
4. ○ Receive $10,000 immediately OR ○ Receive $12,500 in 1 year
5. ○ Receive $10,000 immediately OR ○ Receive $15,000 in 1 year
6. ○ Receive $10,000 immediately OR ○ Receive $20,000 in 1 year

[Intertemporal choice for large losses (under certainty), used in Studies 1, 2S, 2, and 3**]**

Large Bills

Please imagine you face a set of choices about paying a $10,000 bill immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:

1. ○ Pay $10,000 immediately OR ○ Pay $9,000 in 1 year
2. ○ Pay $10,000 immediately OR ○ Pay $10,000 in 1 year
3. ○ Pay $10,000 immediately OR ○ Pay $11,000 in 1 year
4. ○ Pay $10,000 immediately OR ○ Pay $12,500 in 1 year
5. ○ Pay $10,000 immediately OR ○ Pay $15,000 in 1 year
6. ○ Pay $10,000 immediately OR ○ Pay $20,000 in 1 year

[Intertemporal choice for large gains with future uncertainty, used in Studies 1 and 2**]**

Uncertain Large Investments

Please imagine you face a set of choices about receiving $10,000 from investments immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of receiving it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:

1. ○ Receive $10,000 immediately OR ○ 50% chance of receiving $18,000 in 1 year
2. ○ Receive $10,000 immediately OR ○ 50% chance of receiving $20,000 in 1 year
3. ○ Receive $10,000 immediately OR ○ 50% chance of receiving $22,000 in 1 year
4. ○ Receive $10,000 immediately OR ○ 50% chance of receiving $25,000 in 1 year
5. ○ Receive $10,000 immediately OR ○ 50% chance of receiving $30,000 in 1 year
6. ○ Receive $10,000 immediately OR ○ 50% chance of receiving $40,000 in 1 year

[Intertemporal choice for large losses with future uncertainty, used in Studies 1 and 2**]**

Uncertain Large Bills

Please imagine you face a set of choices about paying a $10,000 bill immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of paying it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:

1. ○ Pay $10,000 immediately OR ○ 50% chance of paying $18,000 in 1 year
2. ○ Pay $10,000 immediately OR ○ 50% chance of paying $20,000 in 1 year
3. ○ Pay $10,000 immediately OR ○ 50% chance of paying $22,000 in 1 year
4. ○ Pay $10,000 immediately OR ○ 50% chance of paying $25,000 in 1 year
5. ○ Pay $10,000 immediately OR ○ 50% chance of paying $30,000 in 1 year
6. ○ Pay $10,000 immediately OR ○ 50% chance of paying $40,000 in 1 year

[Intertemporal choice for small gains with future variability, used in Studies 1 and 2**]**

Variable Small Investments

Please imagine you face a set of choices about receiving $100 from investments immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly, one year from now.) Please indicate which option you would choose in each case:

1. ○ Receive $100 immediately OR ○ Receive $45 to $135 in 1 year
2. ○ Receive $100 immediately OR ○ Receive $50 to $150 in 1 year
3. ○ Receive $100 immediately OR ○ Receive $55 to $165 in 1 year
4. ○ Receive $100 immediately OR ○ Receive $63 to $188 in 1 year
5. ○ Receive $100 immediately OR ○ Receive $75 to $225 in 1 year
6. ○ Receive $100 immediately OR ○ Receive $100 to $300 in 1 year

[Intertemporal choice for large gains with future variability, used in Studies 1 and 2**]**

Variable Large Investments

Please imagine you face a set of choices about receiving $10,000 from investments immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly, one year from now.) Please indicate which option you would choose in each case:

1. ○ Receive $10,000 immediately OR ○ Receive $4,500 to $13,500 in 1 year
2. ○ Receive $10,000 immediately OR ○ Receive $5,000 to $15,000 in 1 year
3. ○ Receive $10,000 immediately OR ○ Receive $5,500 to $16,500 in 1 year
4. ○ Receive $10,000 immediately OR ○ Receive $6,250 to $18,750 in 1 year
5. ○ Receive $10,000 immediately OR ○ Receive $7,500 to $22,500 in 1 year
6. ○ Receive $10,000 immediately OR ○ Receive $10,000 to $30,000 in 1 year

[Intertemporal choice for small losses with future variability, used in Studies 1 and 2**]**

Variable Small Bills

Please imagine you face a set of choices about paying a $100 bill immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly, one year from now.) Please indicate which option you would choose in each case:

1. ○ Pay $100 immediately OR ○ Pay $45 to $135 in 1 year
2. ○ Pay $100 immediately OR ○ Pay $50 to $150 in 1 year
3. ○ Pay $100 immediately OR ○ Pay $55 to $165 in 1 year
4. ○ Pay $100 immediately OR ○ Pay $63 to $188 in 1 year
5. ○ Pay $100 immediately OR ○ Pay $75 to $225 in 1 year
6. ○ Pay $100 immediately OR ○ Pay $100 to $300 in 1 year

[Intertemporal choice for large losses with future variability, used in Studies 1 and 2**]**

Variable Large Bills

Please imagine you face a set of choices about paying a $10,000 bill immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly, one year from now.) Please indicate which option you would choose in each case:

1. ○ Pay $10,000 immediately OR ○ Pay $4,500 to $13,500 in 1 year
2. ○ Pay $10,000 immediately OR ○ Pay $5,000 to $15,000 in 1 year
3. ○ Pay $10,000 immediately OR ○ Pay $5,500 to $16,500 in 1 year
4. ○ Pay $10,000 immediately OR ○ Pay $6,250 to $18,750 in 1 year
5. ○ Pay $10,000 immediately OR ○ Pay $7,500 to $22,500 in 1 year
6. ○ Pay $10,000 immediately OR ○ Pay $10,000 to $30,000 in 1 year

[Study 2S**]**

This study was originally labelled Study 2 in an earlier version of the manuscript. However, after stripping out the variability condition and the large magnitude condition for the simplified paper, the remaining sample size was unacceptably small and some of the effects of interest were non-significant (though still in the predicted direction). Therefore, in the main manuscript, we replaced this study with another one (the current Study 2) which included the exact same experimental conditions and had a much larger sample size.

Method

A sample of 76 participants was recruited in the same manner as Study 1. The intertemporal choice questions were the same as in Study 1, except that the immediate outcomes were

uncertain rather than the future outcomes. Participants also answered a series of risky choice questions in which both outcomes were immediate. The small magnitude questions were always presented before the large magnitude questions, but the order of the gain and loss questions was counterbalanced. Participants read the instruction "Please imagine you are actually faced with the following choices, and indicate which option you would prefer each case:" Participants then made choices between the following options: "50% chance to receive $200 and 50% chance to receive nothing OR receive $100 for sure", "50% chance to receive $20,000 and 50% chance to receive nothing OR receive $10,000 for sure", "50% chance to pay $200 and 50% chance to pay nothing OR pay $100 for sure", and "50% chance to pay $20,000 and 50% chance to pay nothing OR pay $10,000 for sure."

[Intertemporal choice for large gains with immediate uncertainty, used in Studies 2s and 2**]**

Uncertain Large Investments

Please imagine you face a set of choices about receiving $20,000 from investments immediately that would be uncertain (only a 50% chance of receiving it, which would be determined randomly), or another amount 1 year from now that would be for sure. Please indicate which option you would choose in each case:

1.	50% chance of receiving $20,000 immediately	OR	Receive $9,000 for sure in 1 year
2.	50% chance of receiving $20,000 immediately	OR	Receive $10,000 for sure in 1 year
3.	50% chance of receiving $20,000 immediately	OR	Receive $11,000 for sure in 1 year
4.	50% chance of receiving $20,000 immediately	OR	Receive $12,500 for sure in 1 year
5.	50% chance of receiving $20,000 immediately	OR	Receive $15,000 for sure in 1 year
6.	50% chance of receiving $20,000 immediately	OR	Receive $20,000 for sure in 1 year

[Intertemporal choice for large losses with immediate uncertainty, used in Studies 2s and 2**]**

Uncertain Large Bills

Please imagine you face a set of choices about paying a $20,000 bill immediately that would be uncertain (only a 50% chance of paying it, which would be determined randomly), or another amount 1 year from now that would be for sure. Please indicate which option you would choose in each case:

1. ○ 50% chance of paying $20,000 immediately OR ○ Pay $9,000 for sure in 1 year
2. ○ 50% chance of paying $20,000 immediately OR ○ Pay $10,000 for sure in 1 year
3. ○ 50% chance of paying $20,000 immediately OR ○ Pay $11,000 for sure in 1 year
4. ○ 50% chance of paying $20,000 immediately OR ○ Pay $12,500 for sure in 1 year
5. ○ 50% chance of paying $20,000 immediately OR ○ Pay $15,000 for sure in 1 year
6. ○ 50% chance of paying $20,000 immediately OR ○ Pay $20,000 for sure in 1 year

[Intertemporal choice for small gains with immediate variability, used in Studies 2s and 2**]**

Variable Small Investments

Please imagine you face a set of choices about receiving $50 to $150 from investments immediately (the exact amount would be determined randomly), or another amount 1 year from now that would be certain. Please indicate which option you would choose in each case:

1. ○ Receive $50 to $150 immediately OR ○ Receive $90 in 1 year
2. ○ Receive $50 to $150 immediately OR ○ Receive $100 in 1 year
3. ○ Receive $50 to $150 immediately OR ○ Receive $110 in 1 year
4. ○ Receive $50 to $150 immediately OR ○ Receive $125 in 1 year
5. ○ Receive $50 to $150 immediately OR ○ Receive $150 in 1 year

6. ○ Receive $50 to $150 immediately OR ○ Receive $200 in 1 year

[Intertemporal choice for large gains with immediate variability, used in Studies 2s and 2**]**

Variable Large Investments

Please imagine you face a set of choices about receiving $5,000 to $15,000 from investments immediately (the exact amount would be determined randomly), or another amount 1 year from now that would be certain. Please indicate which option you would choose in each case:

1. ○ Receive $5,000 to $15,000 immediately OR ○ Receive $9,000 in 1 year
2. ○ Receive $5,000 to $15,000 immediately OR ○ Receive $10,000 in 1 year
3. ○ Receive $5,000 to $15,000 immediately OR ○ Receive $11,000 in 1 year
4. ○ Receive $5,000 to $15,000 immediately OR ○ Receive $12,500 in 1 year
5. ○ Receive $5,000 to $15,000 immediately OR ○ Receive $15,000 in 1 year
6. ○ Receive $5,000 to $15,000 immediately OR ○ Receive $20,000 in 1 year

[Intertemporal choice for small losses with immediate variability, used in Studies 2s and 2**]**

Variable Small Bills

Please imagine you face a set of choices about paying a $50 to $150 bill immediately (the exact amount would be determined randomly), or another amount 1 year from now that would be certain. Please indicate which option you would choose in each case:

1. ○ Pay $50 to $150 immediately OR ○ Pay $90 in 1 year
2. ○ Pay $50 to $150 immediately OR ○ Pay $100 in 1 year
3. ○ Pay $50 to $150 immediately OR ○ Pay $110 in 1 year
4. ○ Pay $50 to $150 immediately OR ○ Pay $125 in 1 year
5. ○ Pay $50 to $150 immediately OR ○ Pay $150 in 1 year

6. ○ Pay $50 to $150 immediately OR ○ Pay $200 in 1 year

[Intertemporal choice for large losses with immediate variability, used in Studies 2s and 2**]**

Variable Large Bills

Please imagine you face a set of choices about paying a $5,000 to $15,000 bill immediately (the exact amount would be determined randomly), or another amount 1 year from now that would be certain. Please indicate which option you would choose in each case:

1. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $9,000 in 1 year
2. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $10,000 in 1 year
3. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $11,000 in 1 year
4. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $12,500 in 1 year
5. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $15,000 in 1 year
6. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $20,000 in 1 year

[Risky choice for small and large gains, used in Studies 2s and 2**]**

Risk Preferences for Gains

Please imagine you are actually faced with the following choices, and indicate which option you would prefer each case:

1. ○ 50% chance to receive $200
50% chance to receive nothing OR ○ receive $100 for sure

2. ○ 50% chance to receive $20,000
50% chance to receive nothing OR ○ receive $10,000 for sure

[Risky choice for small and large losses, used in Studies 2s and 2**]**

Risk Preferences for Losses

Please imagine you are actually faced with the following choices, and indicate which option you would prefer each case:

1. ○ 50% chance to pay $200
50% chance to pay nothing OR ○ pay $100 for sure

2. ○ 50% chance to pay $20,000
50% chance to pay nothing OR ○ pay $10,000 for sure

[Study 2**]**

Method

A national sample of U.S. residents (180 current MBAs and 762 non-MBAs) was recruited through a Qualtrics panel partner. Participants were only eligible to participate if they passed several attention checks. Participants were randomly assigned to an uncertainty type condition (probability or variability) and an uncertainty time condition (immediate uncertainty, future uncertainty, or both). All participants completed four intertemporal choice scenario (small and large gains and losses), four risky choice scenarios, and four intertemporal choice plus uncertainty scenarios, in counterbalanced order.

[Intertemporal choice for uncertain large gains, used in Studies 2 and 3**]**

Uncertain Large Investments

Please imagine you face a set of choices about uncertain investments, possibly receiving $20,000 from investments immediately, or another amount 1 year from now. In each case, there is only a 50% chance of actually receiving the money (determined randomly). If you choose the immediate option, you will find out immediately whether it pays off or not, whereas if you choose the future option, you will find out in one year if it pays off. Please indicate which option you would choose in each case:

1.	○ 50% chance of receiving $20,000 immediately	OR	○ 50% chance of receiving $18,000 in 1 year
2.	○ 50% chance of receiving $20,000 immediately	OR	○ 50% chance of receiving $20,000 in 1 year
3.	○ 50% chance of receiving $20,000 immediately	OR	○ 50% chance of receiving $22,000 in 1 year
4.	○ 50% chance of receiving $20,000 immediately	OR	○ 50% chance of receiving $25,000 in 1 year
5.	○ 50% chance of receiving $20,000 immediately	OR	○ 50% chance of receiving $30,000 in 1 year
6.	○ 50% chance of receiving $20,000 immediately	OR	○ 50% chance of receiving $40,000 in 1 year

[Intertemporal choice for uncertain large losses, used in Studies 2 and 3**]**

Uncertain Large Bills

Please imagine you face a set of choices about uncertain bills, possibly paying a $20,000 bill immediately, or another amount 1 year from now. In each case, there is only a 50% chance of actually paying the money (determined randomly). If you choose the immediate option, you will find out immediately whether it must be paid or not, whereas if you choose the future option, you will find out in one year if it must be paid. Please indicate which option you would choose in each case:

1.	○ 50% chance of paying $20,000 immediately	OR	○ 50% chance of paying $18,000 in 1 year
2.	○ 50% chance of paying $20,000 immediately	OR	○ 50% chance of paying $20,000 in 1 year
3.	○ 50% chance of paying $20,000 immediately	OR	○ 50% chance of paying $22,000 in 1 year
4.	○ 50% chance of paying $20,000 immediately	OR	○ 50% chance of paying $25,000 in 1 year
5.	○ 50% chance of paying $20,000 immediately	OR	○ 50% chance of paying $30,000 in 1 year
6.	○ 50% chance of paying $20,000 immediately	OR	○ 50% chance of paying $40,000 in 1 year

[Intertemporal choice for variable small gains, used in Studies 2 and 3**]**

Variable Small Investments

Please imagine you face a set of choices about receiving $50 to $150 from investments immediately, or another amount 1 year from now that would also be variable. (The exact amounts would be determined randomly, at the time received.) Please indicate which option you would choose in each case:

1. ○ Receive $50 to $150 immediately OR ○ Receive $45 to $135 in 1 year
2. ○ Receive $50 to $150 immediately OR ○ Receive $50 to $150 in 1 year
3. ○ Receive $50 to $150 immediately OR ○ Receive $55 to $165 in 1 year
4. ○ Receive $50 to $150 immediately OR ○ Receive $63 to $188 in 1 year
5. ○ Receive $50 to $150 immediately OR ○ Receive $75 to $225 in 1 year
6. ○ Receive $50 to $150 immediately OR ○ Receive $100 to $300 in 1 year

[Intertemporal choice for variable large gains, used in Studies 2 and 3**]**

Variable Large Investments

Please imagine you face a set of choices about receiving $5,000 to $15,000 from investments immediately, or another amount 1 year from now that would also be variable. (The exact amounts would be determined randomly, at the time received.) Please indicate which option you would choose in each case:

1.	○ Receive $5,000 to $15,000 immediately	OR	○ Receive $4,500 to $13,500 in 1 year
2.	○ Receive $5,000 to $15,000 immediately	OR	○ Receive $5,000 to $15,000 in 1 year
3.	○ Receive $5,000 to $15,000 immediately	OR	○ Receive $5,500 to $16,500 in 1 year
4.	○ Receive $5,000 to $15,000 immediately	OR	○ Receive $6,250 to $18,750 in 1 year
5.	○ Receive $5,000 to $15,000 immediately	OR	○ Receive $7,500 to $22,500 in 1 year
6.	○ Receive $5,000 to $15,000 immediately	OR	○ Receive $10,000 to $30,000 in 1 year

[Intertemporal choice for variable small losses, used in Studies 2 and 3**]**

Variable Small Bills

Please imagine you face a set of choices about paying a $50 to $150 bill immediately, or another amount 1 year from now that would also be variable. (The exact amounts would be determined randomly, at the time received.) Please indicate which option you would choose in each case:

1. ○ Pay $50 to $150 immediately OR ○ Pay $45 to $135 in 1 year
2. ○ Pay $50 to $150 immediately OR ○ Pay $50 to $150 in 1 year
3. ○ Pay $50 to $150 immediately OR ○ Pay $55 to $165 in 1 year
4. ○ Pay $50 to $150 immediately OR ○ Pay $63 to $188 in 1 year
5. ○ Pay $50 to $150 immediately OR ○ Pay $75 to $225 in 1 year
6. ○ Pay $50 to $150 immediately OR ○ Pay $100 to $300 in 1 year

[Intertemporal choice for variable large losses, used in Studies 2 and 3**]**

Variable Large Bills

Please imagine you face a set of choices about paying a $5,000 to $15,000 bill immediately, or another amount 1 year from now that would also be variable. (The exact amounts would be determined randomly, at the time received.) Please indicate which option you would choose in each case:

1. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $4,500 to $13,500 in 1 year
2. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $5,000 to $15,000 in 1 year
3. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $5,500 to $16,500 in 1 year
4. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $6,250 to $18,750 in 1 year
5. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $7,500 to $22,500 in 1 year

6. ○ Pay $5,000 to $15,000 immediately OR ○ Pay $10,000 to $30,000 in 1 year

[Risky choice for variable gains, used in Study 2**]**

Risk Preferences for Gains

Please imagine you are actually faced with the following choices, and indicate which option you would prefer each case. (For the variable options below, the actual amount would be randomly determined, with an equal chance of each amount in the range.):

1. ○ receive $100 OR ○ receive a random amount between $50 and $150

2. ○ receive $10,000 OR ○ receive a random amount between $5,000 and $15,000

[Risky choice for variable losses, used in Study 2**]**

Risk Preferences for Losses

Please imagine you are actually faced with the following choices, and indicate which option you would prefer each case. (For the variable options below, the actual amount would be randomly determined, with an equal chance of each amount in the range.):

1. ○ pay $100 OR ○ pay a random amount between $50 and $150

2. ○ pay $10,000 OR ○ pay a random amount between $5,000 and $15,000

[NOTE: All scenarios with variability in Study 2 included the phrase "(For the variable options below, the actual amount would be randomly determined, with an equal chance of each amount in the range.)"]

[Study 3**]**

Method

A sample of 102 participants was recruited from Amazon Mechanical Turk. The intertemporal choice scenarios were the same as before, except that in this case, both the immediate and future outcomes were uncertain.

[Study 4P**]**

This study was a pilot study for Study 4. The indifference point methodology ended up being somewhat flawed, making the results difficult to interpret. Many participants gave irrational (dominated) answers to the initial indifference point question. We remedied this in the Study 4S.

Methods

A sample of 59 participants was recruited from Amazon Mechanical Turk in the same manner as other studies. Participants were randomly assigned to the gains condition or the losses condition. All participants read the following:

Please imagine you had to choose between a sure thing or a risky thing. Please fill in the amount below that would make you indifferent between the two options.

Receive [Lose] $1000 today for sure	OR	50% chance to receive [lose] $[ ] today and 50% chance to receive [lose] $0 today

Their answer was recorded by the computer and automatically entered into questions two and three, individually tailored for each participant. The second question was:

Which would you choose?

Receive [Lose] $1000 today for sure	OR	50% chance to receive [lose] $X in one month and 50% chance to receive [lose] $0 in one month

The $X was filled in with the indifference point that the participant had previously specified for the immediate outcomes. The third question (in counterbalanced order with question two) was:

Which would you choose?

Receive [Lose] $1000 in one month for sure	OR	50% chance to receive [lose] $X today and 50% chance to receive [lose] $0 today

[Risk preference indifference point measure for immediate gains, used in Study 4**]**

Please imagine you had to choose between a sure thing or a risky thing. Please fill in the amount below that would make you **indifferent** between the two options.

Receive $[ ] today for sure	OR	50% chance to receive $2000 today and 50% chance to receive $0 today

(Your answer must be greater than 0 and less than 2000.)

[Risk preference indifference point measure for immediate losses, used in Study 4**]**

Please imagine you had to choose between a sure thing or a risky thing. Please fill in the amount below that would make you **indifferent** between the two options.

Lose $[ ] today for sure	OR	50% chance to lose $2000 today and 50% chance to lose $0 today

(Your answer must be greater than 0 and less than 2000.)

[Study 4**]**

Method

A sample of 186 participants was recruited from Amazon Mechanical Turk in the same manner as Study 1. Participants were randomly assigned to the gains condition or the losses condition. All participants read the following:

> Please imagine you had to choose between a sure thing or a risky thing. Please fill in the amount below that would make you indifferent between the two options.
>
> | | | |
> |---|---|---|
> | Receive [Lose] $_____ today for sure | OR | 50% chance to receive [lose] $2000 today and 50% chance to receive [lose] $0 today |
>
> (Your answer must be greater than 0 and less than 2000.)

Participants were only allowed to proceed if their answer was greater than $0 and less than $2000. Their answer was recorded by the computer and automatically entered into questions two and three, individually tailored for each participant. The second question was:

> Which would you choose?
>
> | | | |
> |---|---|---|
> | Receive [Lose] $X today for sure | OR | 50% chance to receive [lose] $2000 in one month and 50% chance to receive [lose] $0 in one month |

The $X was filled in with the indifference point that the participant had previously specified for the immediate outcomes. The third question (in counterbalanced order with question two) was:

> Which would you choose?
>
> | | | |
> |---|---|---|
> | Receive [Lose] $X in one month for sure | OR | 50% chance to receive [lose] $2000 today and 50% chance to receive [lose] $0 today |

[Study 5S**]**

This study explores the psychological process underlying the intertemporal uncertainty avoidance effect. It also replicates the effects of interest, found in Studies 1 and 2. It was cut from the main manuscript for brevity and simplicity.

Method

A sample of 115 U.S. residents was recruited via Amazon Mechanical Turk, in the same manner as Study 1.

The materials and methods were almost identical to those used in previous studies. Participants were randomly assigned to an uncertainty type condition (probability or variability) and an uncertainty time condition (immediate uncertainty or future uncertainty). All participants completed two intertemporal choice scenario (gains and losses), two risky choice scenarios, and two intertemporal choice plus uncertainty scenarios, in counterbalanced order.

After every choice scenario, participants answered two or three questions designed to investigate the mechanism underlying their choices. Each set of mechanism questions began with the introduction "Please consider the choice you just made between these options: [Pay $1,000 immediately] OR [50% chance of paying $2,200 in 1 year]." (The choice pair was copied from the middle pair on the previous page. Based on previous studies, this pair should be closest to participants' indifference points.) Participants were then asked "How simple and straightforward do you find the option on the left?" and "How simple and straightforward do you find the option on the right?", each answered with a 7-point scale going from "very simple" to "very complicated". If one of the options included uncertainty, participants answered a third question, "Suppose that you chose the option on the right [left]. How much would you expect to pay

[receive], on average?", which was answered with a free response dollar amount. This was intended to measure their expectations for each uncertain outcome.

Subsequently, participants completed the short version of the Need for Cognition scale (Cacioppo, Petty, & Feng Kao, 1984), the Berlin Numeracy Task (Cokely, Galesic, Schulz, Ghazal, & Garcia-Retamero, 2012), and a demographic questionnaire.

[Attention check, used in Study 5S**]**

Important Instructions

The question at the bottom of this page is a test, to be sure you are reading carefully. Please ignore the question below and put the word "reader" (without quotes) as your answer, to demonstrate that you have read these instructions. Thank you for reading carefully.

Roughly many times a day do you think about things you need to do? _____

[Intertemporal choice with gains (under certainty), used in Study 5S**]**

Gains

Please imagine you face a set of choices about receiving $1,000 from investments immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:

1.	○ Receive $1,000 immediately	OR	○ Receive $750 in 1 year
2.	○ Receive $1,000 immediately	OR	○ Receive $900 in 1 year
3.	○ Receive $1,000 immediately	OR	○ Receive $1,000 in 1 year
4.	○ Receive $1,000 immediately	OR	○ Receive $1,100 in 1 year
5.	○ Receive $1,000 immediately	OR	○ Receive $1,250 in 1 year
6.	○ Receive $1,000 immediately	OR	○ Receive $1,500 in 1 year
7.	○ Receive $1,000 immediately	OR	○ Receive $2,000 in 1 year

[Process measures for intertemporal choice with gains (under certainty), used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Receive $1,000 immediately OR Receive $1,100 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated

○ ○ ○ ○ ○ ○ ○

[Intertemporal choice with losses (under certainty), used in Study 5S**]**

Losses

Please imagine you face a set of choices about paying a $1,000 bill immediately, or another amount 1 year from now. Please indicate which option you would choose in each case:

1. ○ Pay $1,000 immediately OR ○ Pay $750 in 1 year
2. ○ Pay $1,000 immediately OR ○ Pay $900 in 1 year
3. ○ Pay $1,000 immediately OR ○ Pay $1,000 in 1 year
4. ○ Pay $1,000 immediately OR ○ Pay $1,100 in 1 year
5. ○ Pay $1,000 immediately OR ○ Pay $1,250 in 1 year
6. ○ Pay $1,000 immediately OR ○ Pay $1,500 in 1 year
7. ○ Pay $1,000 immediately OR ○ Pay $2,000 in 1 year

[Process measures for intertemporal choice with losses (under certainty), used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Pay $1,000 immediately OR Pay $1,100 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very	simple	a little	neither simple	a little	complicated	very

simple simple nor complicated complicated complicated

[Risky choice with uncertain gains, used in Study 5S**]**

Risk Preferences for Gains

Please imagine you are actually faced with the following choices, and indicate which option you would prefer in each case:

receive $1,000 for sure OR 50% chance to receive $2,000
50% chance to receive nothing

[Process measures for risky choice with uncertain gains, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

receive $1,000 for sure OR 50% chance to receive $2,000
50% chance to receive nothing

1. How simple and straightforward do you find the option on the left?

very simple | simple | a little simple | neither simple nor complicated | a little complicated | complicated | very complicated

2. How simple and straightforward do you find the option on the right?

very simple | simple | a little simple | neither simple nor complicated | a little complicated | complicated | very complicated

3. Suppose that you chose the option on the right. How much would you expect to receive, on

average?

$

[Risky choice with variable gains, used in Study 5S**]**

Risk Preferences for Gains

Please imagine you are actually faced with the following choices, and indicate which option you would prefer in each case. (For the variable option below, the actual amount would be randomly determined, with and equal chance of each amount in the range.):

○ receive $1,000 OR ○ receive a random amount between $500 and $1,500

[Process measures for risky choice with variable gains, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

receive $1,000 OR receive a random amount between $500 and $1,500

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to receive, on average?

$ [ ]

[Risky choice with uncertain losses, used in Study 5S**]**

Risk Preferences for Losses

Please imagine you are actually faced with the following choices, and indicate which option you would prefer in each case:

○ pay $1,000 for sure OR ○ 50% chance to pay $2,000
50% chance to pay nothing

[Process measures for risky choice with uncertain losses, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

pay $1,000 for sure OR 50% chance to pay $2,000
50% chance to pay nothing

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to pay, on average?

$

[Risky choice with variable losses, used in Study 5S**]**

Risk Preferences for Losses

Please imagine you are actually faced with the following choices, and indicate which option you would prefer in each case. (For the variable option below, the actual amount would be randomly determined, with an equal chance of each amount in the range.):

○ pay $1,000 OR ○ pay a random amount between $500 and $1,500

[Process measures for risky choice with variable losses, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

pay $1,000 OR pay a random amount between $500 and $1,500

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to pay, on average?

$ _____

[Intertemporal choice with future uncertain gains, used in Study 5S**]**

Uncertain Gains

Please imagine you face a set of choices about receiving $1,000 from investments immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of receiving it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:

1. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $1,500 in 1 year
2. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $1,800 in 1 year
3. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $2,000 in 1 year
4. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $2,200 in 1 year
5. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $2,500 in 1 year
6. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $3,000 in 1 year
7. ○ Receive $1,000 immediately OR ○ 50% chance of receiving $4,000 in 1 year

[Process measures for intertemporal choice with future uncertain gains, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Receive $1,000 immediately OR 50% chance of receiving $2,200 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to receive, on average?

$

[Intertemporal choice with future variable gains, used in Study 5S**]**

Variable Gains

Please imagine you face a set of choices about receiving $1,000 from investments immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly at the time received, with an equal chance of receiving any amount in the range.) Please indicate which option you would choose in each case:

1. ○ Receive $1,000 immediately OR ○ Receive $375 to $1,125 in 1 year
2. ○ Receive $1,000 immediately OR ○ Receive $450 to $1,350 in 1 year
3. ○ Receive $1,000 immediately OR ○ Receive $500 to $1,500 in 1 year
4. ○ Receive $1,000 immediately OR ○ Receive $550 to $1,650 in 1 year
5. ○ Receive $1,000 immediately OR ○ Receive $625 to $1,875 in 1 year
6. ○ Receive $1,000 immediately OR ○ Receive $750 to $2,250 in 1 year
7. ○ Receive $1,000 immediately OR ○ Receive $1,000 to $3,000 in 1 year

[Process measures for intertemporal choice with future variable gains, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Receive $1,000 immediately OR Receive $550 to $1,650 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to receive, on average?

$

[Intertemporal choice with future uncertain losses, used in Study 5S**]**

Uncertain Losses

Please imagine you face a set of choices about paying a $1,000 bill immediately, or another amount 1 year from now that would be uncertain (only a 50% chance of paying it, which would be determined randomly, one year from now). Please indicate which option you would choose in each case:

1. ○ Pay $1,000 immediately OR ○ 50% chance of paying $1,500 in 1 year
2. ○ Pay $1,000 immediately OR ○ 50% chance of paying $1,800 in 1 year
3. ○ Pay $1,000 immediately OR ○ 50% chance of paying $2,000 in 1 year
4. ○ Pay $1,000 immediately OR ○ 50% chance of paying $2,200 in 1 year
5. ○ Pay $1,000 immediately OR ○ 50% chance of paying $2,500 in 1 year
6. ○ Pay $1,000 immediately OR ○ 50% chance of paying $3,000 in 1 year
7. ○ Pay $1,000 immediately OR ○ 50% chance of paying $4,000 in 1 year

[Process measures for intertemporal choice with future uncertain losses, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Pay $1,000 immediately OR 50% chance of paying $2,200 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to pay, on average?

$

[Intertemporal choice with future variable losses, used in Study 5S**]**

Variable Losses

Please imagine you face a set of choices about paying a $1,000 bill immediately, or another amount 1 year from now that would be a variable amount. (The exact amount would be determined randomly at the time paid, with an equal chance of paying any amount in the range.) Please indicate which option you would choose in each case:

1. ○ Pay $1,000 immediately OR ○ Pay $375 to $1,125 in 1 year
2. ○ Pay $1,000 immediately OR ○ Pay $450 to $1,350 in 1 year
3. ○ Pay $1,000 immediately OR ○ Pay $500 to $1,500 in 1 year
4. ○ Pay $1,000 immediately OR ○ Pay $550 to $1,650 in 1 year
5. ○ Pay $1,000 immediately OR ○ Pay $625 to $1,875 in 1 year
6. ○ Pay $1,000 immediately OR ○ Pay $750 to $2,250 in 1 year
7. ○ Pay $1,000 immediately OR ○ Pay $1,000 to $3,000 in 1 year

[Process measures for intertemporal choice with future variable losses, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Pay $1,000 immediately OR Pay $550 to $1,650 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the right. How much would you expect to pay, on average?

$

[Intertemporal choice with immediate uncertain gains, used in Study 5S**]**

Uncertain Gains

Please imagine you face a set of choices about receiving $2,000 from investments immediately that would be uncertain (only a 50% chance of receiving it, which would be determined randomly), or another amount 1 year from now that would be for sure. Please indicate which option you would choose in each case:

1.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $750 for sure in 1 year
2.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $900 for sure in 1 year
3.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $1,000 for sure in 1 year
4.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $1,100 for sure in 1 year
5.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $1,250 for sure in 1 year
6.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $1,500 for sure in 1 year
7.	○ 50% chance of receiving $2,000 immediately	OR	○ Receive $2,000 for sure in 1 year

[Process measures for intertemporal choice with immediate uncertain gains, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

50% chance of receiving $2,000 immediately OR Receive $1,100 for sure in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the left. How much would you expect to receive, on average?

$

[Intertemporal choice with immediate variable gains, used in Study 5S**]**

Variable Gains

Please imagine you face a set of choices about receiving $500 to $1,500 from investments immediately (the exact amount would be determined randomly, with an equal chance of receiving any amount in the range), or another amount 1 year from now that would be certain. Please indicate which option you would choose in each case:

1. ○ Receive $500 to $1,500 immediately OR ○ Receive $750 in 1 year
2. ○ Receive $500 to $1,500 immediately OR ○ Receive $900 in 1 year
3. ○ Receive $500 to $1,500 immediately OR ○ Receive $1,000 in 1 year
4. ○ Receive $500 to $1,500 immediately OR ○ Receive $1,100 in 1 year
5. ○ Receive $500 to $1,500 immediately OR ○ Receive $1,250 in 1 year
6. ○ Receive $500 to $1,500 immediately OR ○ Receive $1,500 in 1 year
7. ○ Receive $500 to $1,500 immediately OR ○ Receive $2,000 in 1 year

[Process measures for intertemporal choice with immediate variable gains, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Receive $500 to $1,500 immediately OR Receive $1,100 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the left. How much would you expect to receive, on average?

$

[Intertemporal choice with immediate uncertain losses, used in Study 5S**]**

Uncertain Losses

Please imagine you face a set of choices about paying a $2,000 bill immediately that would be uncertain (only a 50% chance of paying it, which would be determined randomly), or another amount 1 year from now that would be for sure. Please indicate which option you would choose in each case:

1. ○ 50% chance of paying $2,000 immediately OR ○ Pay $750 for sure in 1 year
2. ○ 50% chance of paying $2,000 immediately OR ○ Pay $900 for sure in 1 year
3. ○ 50% chance of paying $2,000 immediately OR ○ Pay $1,000 for sure in 1 year
4. ○ 50% chance of paying $2,000 immediately OR ○ Pay $1,100 for sure in 1 year
5. ○ 50% chance of paying $2,000 immediately OR ○ Pay $1,250 for sure in 1 year
6. ○ 50% chance of paying $2,000 immediately OR ○ Pay $1,500 for sure in 1 year
7. ○ 50% chance of paying $2,000 immediately OR ○ Pay $2,000 for sure in 1 year

[Process measures for intertemporal choice with immediate uncertain losses, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

50% chance of paying $2,000 immediately OR Pay $1,100 for sure in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the left. How much would you expect to pay, on average?

$

[Intertemporal choice with immediate variable losses, used in Study 5S**]**

Variable Losses

Please imagine you face a set of choices about paying a $500 to $1,500 bill immediately (the exact amount would be determined randomly, with an equal chance of receiving any amount in the range), or another amount 1 year from now that would be certain. Please indicate which option you would choose in each case:

1. ○ Pay $500 to $1,500 immediately OR ○ Pay $750 in 1 year
2. ○ Pay $500 to $1,500 immediately OR ○ Pay $900 in 1 year
3. ○ Pay $500 to $1,500 immediately OR ○ Pay $1,000 in 1 year
4. ○ Pay $500 to $1,500 immediately OR ○ Pay $1,100 in 1 year
5. ○ Pay $500 to $1,500 immediately OR ○ Pay $1,250 in 1 year
6. ○ Pay $500 to $1,500 immediately OR ○ Pay $1,500 in 1 year
7. ○ Pay $500 to $1,500 immediately OR ○ Pay $2,000 in 1 year

[Process measures for intertemporal choice with immediate variable losses, used in Study 5S**]**

About the Options

Please consider the choice you just made between these options:

Pay $500 to $1,500 immediately OR Pay $1,100 in 1 year

1. How simple and straightforward do you find the option on the left?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

2. How simple and straightforward do you find the option on the right?

very simple	simple	a little simple	neither simple nor complicated	a little complicated	complicated	very complicated
○	○	○	○	○	○	○

3. Suppose that you chose the option on the left. How much would you expect to pay, on average?

$

[Numeracy scale, used in Study 5S**]**

About Yourself

Please indicate your degree of agreement or disagreement with each of the statements listed below.

1. I would prefer complex to simple problems.
[Answer is a select box with 9 options, from "very strong agreement" to "very strong disagreement".]

2. I like to have the responsibility of handling a situation that requires a lot of thinking.

3. Thinking is not my idea of fun.

4. I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.

5. I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.

6. I find satisfaction in deliberating hard and for long hours.

7. I only think as hard as I have to.

8. I prefer to think about small, daily projects to long-term ones.

9. I like tasks that require little thought once I've learned them.

10. The idea of relying on thought to make my way to the top appeals to me.

11. I really enjoy a task that involves coming up with new solutions to problems.

12. Learning new ways to think doesn't excite me very much.

13. I prefer my life to be filled with puzzles that I must solve.

14. The notion of thinking abstractly is appealing to me.

15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.

16. I feel relief rather than satisfaction after completing a task that required a lot of mental effort.

17. It's enough for me that something gets the job done; I don't care how or why it works.

18. I usually end up deliberating about issues even when they do not affect me personally.

[Numeracy scale, used in Study 5S**]**

[Note that this test is adaptive, as per (Cokely, Galesic, Schulz, Ghazal, & Garcia-Retamero, 2012), and each participant only sees two or three of the following four questions.]

Math Problem

Please do your best to correctly answer the question below.

Out of 1,000 people in a small town 500 are members of a choir. Out of these 500 members in the choir 100 are men. Out of the 500 inhabitants that are not in the choir 300 are men. What is the probability that a randomly drawn man is a member of the choir? (Please indicate the probability in percent.)

☐ %

Math Problem

Please do your best to correctly answer the question below.

Imagine we are throwing a five-sided die 50 times. On average, out of these 50 throws how many times would this five-sided die show an odd number (1, 3 or 5)?

☐ throws

Math Problem

Please do your best to correctly answer the question below.

Imagine we are throwing a loaded die (6 sides). The probability that the die shows a 6 is twice as high as the probability of each of the other numbers. On average, out of these 70 throws how many times would the die show the number 6?

☐ throws

Math Problem

Please do your best to correctly answer the question below.

In a forest 20% of mushrooms are red, 50% brown and 30% white. A red mushroom is poisonous with a probability of 20%. A mushroom that is not red is poi- sonous with a

probability of 5%. What is the probability that a poisonous mushroom in the forest is red? (Please indicate the probability in percent.)

_____ %