CARNEGIE MELLON UNIVERSITY CONSENT FORM Project Title: Single-Play and Repeated-Play Decisions with Fungible and Non-Fungible Outcomes Conducted by: The H. John Heinz School of Public Policy and Management You agree to participate in the research project "Single-Play and Repeated-Play Decisions with Fungible and Non-Fungible Outcomes," conducted by Assistant Professor DeKay and Research Associate Mandy Holbrook or by students or staff under their supervision. You understand that Carnegie Mellon University Institutional Review Board (IRB) has approved the use of human participants for this Study. If, however, at any time you wish to terminate your participation in this study you have the right to do so without penalty. If you have any questions about this study, you should feel free to contact: Assistant Professor Michael L. DeKay H. John Heinz III School of Public Policy and Management Carnegie Mellon University Pittsburgh, PA 15213 412-268-1877

Research Associate Mandy Holbrook Social and Decision Sciences Carnegie Mellon University Pittsburgh, PA 15213 412-268-3249 You have the right to contact the following person and report your objections, either orally or in writing: IRB Chair/Regulatory Compliance Administration Carnegie Mellon University Warner Hall, Room 414 Pittsburgh, PA 15213 Tel: 412-268-1901 Email: irb-review@andrew.cmu.edu Purpose of the Study: The researchers are interested in how people evaluate different situations regarding fungibility of decision making outcomes. This study involves reading scenarios and answering questions, and you will be given instructions on how to complete the various tasks. The entire task is expected to take about 30 minutes, and you will be paid by a $10 money order sent by mail or $10 in cash if you come by Ms. Holbrook's office in Porter Hall 319 once it is confirmed through your email that you have completed the survey. A separate email will be sent to you once you've completed the survey to determine your payment preference. Your email address nor the payment email will be associated with your survey responses in anyway. The following procedure will be used to maintain your anonymity in analysis, publication, and presentation of any results. Participants' names will not be recorded, and the data files will be identified using code numbers rather than names. Please note, once you finish the online survey and click "next" to send your responses, your computer will automatically send its IP address with your answers. We have your email address only to confirm you have completed the survey and it will not be kept with your name or any other identifying information. We do not keep IP addresses in our data records, so no lasting link will be made to the computer you are using. No persistent "cookies" will be sent to your computer. Because this study includes an internet survey, there is no way to ensure total confidentiality and that your responses are at risk (however small) of being accessed by unauthorized parties. However, your name will not be sent in the same transmission as your survey response, limiting the risk of violation of your anonymity. By hitting "next", you give Dr. DeKay, Mandy Holbrook, and their associates permission to present this work in written and oral form, without further permission from you and acknowledge all of the conditions explained above. This Study is funded by NSF, which is supporting the costs of this research. Neither Carnegie Mellon University (CMU), nor Principal Investigator will receive any financial benefit based on the results of the Study. Thank you. This study has been reviewed and approved by the Carnegie Mellon University (CMU) IRB on 7/8/05 and expires 7/08/06.

This study is designed to explore the decisions that people make when the outcomes of those decisions are uncertain. You will be asked to imagine that you are in a specific situation and to make a particular decision. We will also ask you a number of other questions. This study should take approximately 30 minutes.

The situation may be new to you, and you may not have all the information that you would like. That's okay. We'd like you to tell us what you think anyway. Please give your honest opinion—not what you think you "should" say. These are opinion questions and there are no right or wrong answers.

If you have questions at any time during the study, please ask the facilitator individually.

Imagine that you are a participant in a study on decision making involving real money and you are asked to choose between two options, each of which involves a series of **one hundred** monetary gambles. On each gamble in option A, there is a 30% chance that you will receive $110 and a 70% chance that you will get no money. On each gamble in option B, there is a 40% chance you will receive $70 and a 60% chance that you will get no money.

These two options may be summarized as follows:

Option A:
30% chance on each gamble that you get $110
70% chance on each gamble that you get no money

Option B:
40% chance on each gamble that you get $70
60% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles. You may not choose option A for some gambles and option B for others.

1. Which option do you prefer in this situation? *Please check one*.

◯ Strongly prefer option A   ◯ - ◯ Moderately prefer option A   ◯ - ◯ Neither ◯ - ◯ Moderately prefer option B

◯ - ◯ Strongly prefer option B

2. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option A

◯ Option B

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
25% chance that on each gamble you get $60
75% chance that on each gamble you get no money

Option B:
20% chance that on each gamble you get $100
80% chance that on each gamble you get no money

Your choice between options A and B applies to all **one hundred** gambles.

3. Which option do you prefer in this situation? *Please check one.*

◯ Strongly prefer option A - ◯ Moderately prefer option A ◯ - ◯ Neither ◯ - ◯ Moderately prefer option B

◯ - ◯ Strongly prefer option B

4. If forced to decide, which option would you choose in this situation? *Please check one.*

◯ Option A

◯ Option B

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
15% chance on each gamble that you get $140
85% chance on each gamble that you get no money

Option B:
30% chance on each gamble that you get $80
70% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

5. Which option do you prefer in this situation? *Please check one*.

◯ - ◯ Moderately prefer option A   ◯ - ◯ Neither ◯ - ◯ Moderately prefer option B   ◯ -

◯ Strongly prefer option B   ◯ Strongly prefer option A

6. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option B

◯ Option A

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
2% chance on each gamble that you get $50
98% chance on each gamble that you get no money

Option B:
1% chance on each gamble that you get $120
99% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles

7. Which option do you prefer in this situation? *Please check one*.

◯ - ◯ Moderately prefer option
B
◯ Neither ◯ - ◯ Strongly prefer option
A
◯ - ◯ Moderately prefer option
A

◯ Strongly prefer option ◯ -
B

8. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option B

◯ Option A

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
50% chance on each gamble that you get $60
50% chance on each gamble that you get no money

Option B:
25% chance on each gamble that you get $90
75% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

9. Which option do you prefer in this situation? *Please check one*.

◯ Strongly prefer option A - ◯ Moderately prefer option A - ◯ Neither - ◯ Moderately prefer option B

◯ - ◯ Strongly prefer option B

10. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option A

◯ Option B

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
40% chance on each gamble that you get $80
60 % chance on each gamble that you get no money

Option B:
30% chance on each gamble that you get $70
70% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

11. Which option do you prefer in this situation? *Please check one*.

◯ Strongly prefer option A - ◯ Moderately prefer option A - ◯ Neither - ◯ Moderately prefer option B

◯ - ◯ Strongly prefer option B

12. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option A

◯ Option B

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
65% chance on each gamble that you get $150
35% chance on each gamble that you get no money

Option B:
85% chance on each gamble that you get $120
15% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

13. Which option do you prefer in this situation? *Please check one*.

◯ Strongly prefer option A - ◯ ◯ Moderately prefer option A - ◯ ◯ Neither ◯ - ◯ Moderately prefer option B

◯ - ◯ Strongly prefer option B

14. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option B

◯ Option A

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
80% change on each gamble that you get $100
20% chance on each gamble that you get no money

Option B:
100% chance on each gamble that you get $60

Your choice between options A and B applies to all **one hundred** gambles.

15. Which option do you prefer in this situation? *Please check one.*

◯ Strongly prefer option ◯ - ◯ Moderately prefer option ◯ - ◯ Neither ◯ - ◯ Moderately prefer option
A   A   B

◯ - ◯ Strongly prefer option
B

16. If forced to decide, which option would you choose in this situation? *Please check one.*

◯ Option A

◯ Option B

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
2% chance on each gamble that you get $130
98% chance on each gamble that you get no money

0ption B:
4% chance on each gamble that you get $70
96% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

17. Which option do you prefer in this situation? *Please check one*.

◯ - ◯ Strongly prefer option B   ◯ Moderately prefer option B   ◯ - ◯ Moderately prefer option A   ◯ - ◯ -

◯ Strongly prefer option A   ◯ Neither

18. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option A

◯ Option B

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
45% chance on each gamble that you get $120
55% chance on each gamble that you get no money

Option B:
90% chance on each gamble that you get $50
10% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

19. Which option do you prefer in this situation? *Please check one*.

◯ Strongly prefer option A - ◯ ◯ Moderately prefer option A - ◯ ◯ Neither ◯ - ◯ Moderately prefer option B

◯ - ◯ Strongly prefer option B

20. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option B

◯ Option A

Now imagine that you are in the same situation, but the options are different. The previous options are not available, but everything else is the same as before.

The two new options are:

Option A:
10% chance on each gamble that you get $150
90% chance on each gamble that you get no money

Option B:
25% chance on each gamble that you get $70
75% chance on each gamble that you get no money

Your choice between options A and B applies to all **one hundred** gambles.

21. Which option do you prefer in this situation? *Please check one*.

◯ Strongly prefer option A ◯ - ◯ Moderately prefer option A ◯ - ◯ Neither ◯ Moderately prefer option B ◯ -

◯ Strongly prefer option B ◯ -

22. If forced to decide, which option would you choose in this situation? *Please check one*.

◯ Option A

◯ Option B

Now we'd like you to answer some additional questions.

23. When making a particular choice between options A and B, did you ever consider the total amount of money that might be won over all one hundred gambles? *Please check one.*

◯ Yes

◯ No

24. When choosing between options A and B, did you ever try to choose the option with the higher "expected value"? *Please check one. If you are not sure what an expected value is, check No.*

◯ Yes

◯ No

25. Some people prefer to avoid risks (we call these people "risk averse"). Other people seek out risks and may actually enjoy them (we call these people "risk seeking"). To what extent are you risk averse or risk seeking? *Please check one*.

◯ Very risk averse ◯ - ◯ Moderately risk averse ◯ - ◯ Neither ◯ - ◯ Moderately risk seeking ◯ -

◯ Very risk seeking

Consider a choice between options like the choices you made earlier. As before, each option involves a series of **one hundred** monetary gambles. We'd like you to think about this type of choice in general terms, so we have not specified the amount of money that could be won on each gamble.

The two options are:

Option A:
40% chance on each gamble that you get some amount of money
60% chance on each gamble that you get no money

Option B:
25% chance on each gamble that you get a larger amount of money
75% chance on each gamble that you get no money

Your choice between options A and B would apply to all **one hundred** gambles. Of course, we'd have to tell you the amounts of money involved before you could really make a choice, but we'd like to know what you think about this type of choice, regardless of the details.

26. When choosing between options A and B in a situation like this, to what extent is it reasonable to consider the money won on some gambles as offsetting the fact that no money is won on other gambles? *Please check one.*

◯ Not at all reasonable ◯ - ◯ Slightly reasonable ◯ - ◯ Moderately reasonable ◯ - ◯ Very reasonable

◯ - ◯ Completely reasonable

27. When choosing between options A and B in a situation like this, to what extent is it appropriate to consider the total amount of money won over all one hundred gambles? *Please check one.*

◯ Not at all appropriate ◯ - ◯ Slightly appropriate ◯ - ◯ Moderately appropriate ◯ - ◯ Very appropriate

◯ - ◯ Completely appropriate

28. When choosing between options A and B in a situation like this, to what extent is it meaningful to consider the average amount of money won over all one hundred gambles? *Please check one.*

◯ Not at all meaningful ◯ - ◯ Slightly meaningful ◯ - ◯ Moderately meaningful ◯ - ◯ Very meaningful

◯ - ◯ Completely meaningful

Please indicate the extent to which you agree or disagree with each of the following statements.

29. What really matters is the outcome on each gamble, not the performance over all one hundred gambles.

◯ - ◯ Neither ◯ - ◯ Moderately agree ◯ - ◯ Strongly agree ◯ Strongly disagree ◯ -

◯ Moderately disagree

30. It makes a lot of sense to add up the money over the one hundred gambles.

◯ Strongly disagree ◯ - ◯ Moderately disagree ◯ - ◯ Neither ◯ - ◯ Moderately agree ◯ -

◯ Strongly agree

31. It doesn't matter which gambles are won, so long as the total amount of money won is large.

◯ Strongly disagree ◯ - ◯ Moderately disagree ◯ - ◯ Neither ◯ - ◯ Moderately agree ◯ -

◯ Strongly agree

32. Combining outcomes for the one hundred gambles is an error in logic.

◯ Strongly disagree ◯ - ◯ Moderately disagree ◯ - ◯ Neither ◯ - ◯ Moderately agree ◯ -

◯ Strongly agree

We would now like you to consider a way of graphing the outcomes of an option over **one hundred** monetary gambles. We'd like you to think about this type of graph in general terms, but we need to specify a particular option as an example in order to show you a graph.

The example option may be described as follows:

30% chance on each gamble that you get $70
70% chance on each gamble that you get no money

Total amount of money won over one hundred gambles. The graph below shows the chance that a specific amount of money will be won over all one hundred gambles. The total amount of money won is calculated by adding up the money won on each of the one hundred gambles. For example, there is about a 23% chance that $1400 will be won and about a 0.001% chance (a 1-in-100,000 chance) that $7000 will be won.

Please consider this graph and then answer the questions that follow. Remember, we are interested in what you think about this type of graph, not whether you think the example option is good or bad.
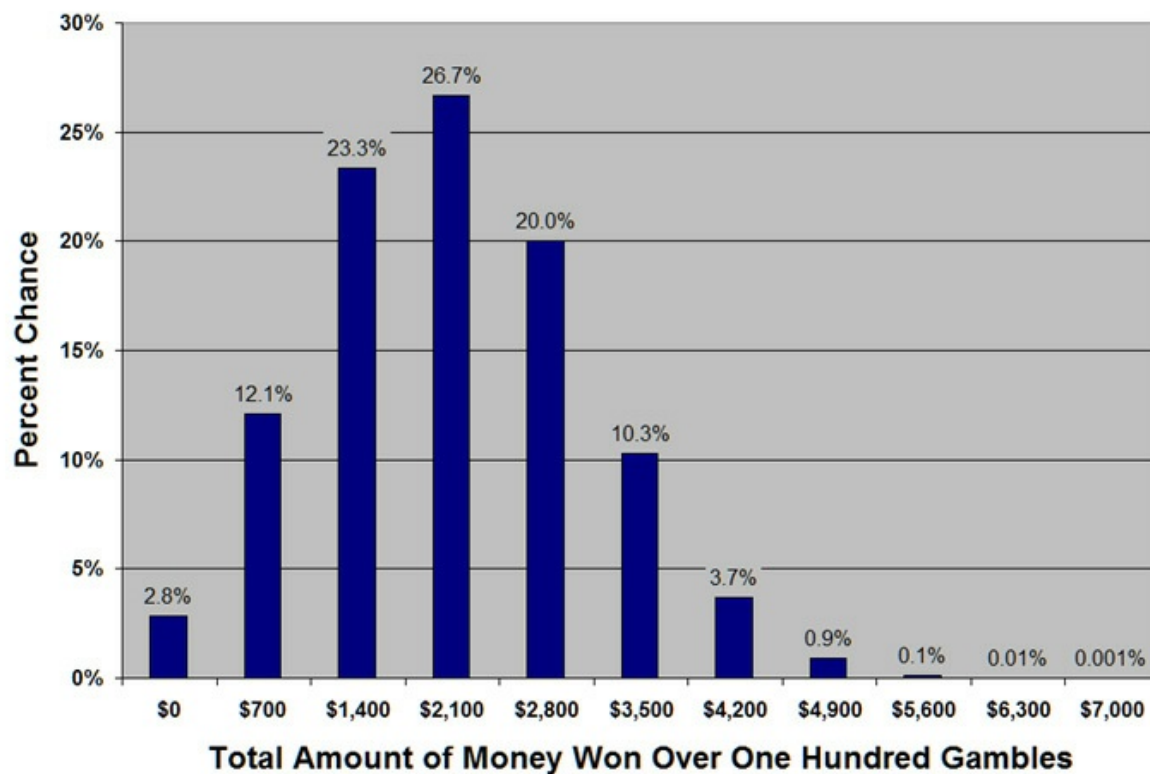
33. In comparing this option to another option, how appropriate would it be to consider the total amount of money that might be won over all one hundred gambles, as presented in this graph?

◯ Moderately appropriate ◯ - ◯ Very appropriate ◯ - ◯ Completely appropriate ◯ Not at all appropriate

◯ - ◯ Slightly appropriate ◯ -

34. To what extent does the above graph accurately represent the actual monetary gains that you would experience as the result of the gambles?

◯ Not at all accurately ◯ - ◯ Slightly accurately ◯ - ◯ Moderately accurately ◯ - ◯ Very accurately ◯ -

◯ Completely accurately

Finally, we would like you to answer a few questions about yourself. This information will be very useful in helping us describe the types of people who participated in our study.

35. To what extent are you politically liberal or politically conservative? *Please check one.*

◯ Very liberal ◯ - ◯ Moderately liberal ◯ - ◯ Neither ◯ - ◯ Moderately conservative ◯ -

◯ Very conservative

36. How important is religion in your daily life? *Please check one.*

◯ Not at all important ◯ - ◯ Moderately important ◯ - ◯ Very important

37. What is your sex? *Please check one.*

◯ Male

◯ Female

38. What is your age in years?

[   ]

39. Are you Hispanic or Latino? *Please check one.*

◯ Yes

◯ No

40. How would you describe your race? *Please check all that apply.*

☐ American Indian or Alaska Native

☐ Asian

☐ Black or African American

☐ Native Hawaiian or Other Pacific Islander

☐ White

☐ Other (please specify)

[   ]

41. Is English your first language? *Please check one*.

◯ Yes

◯ No

42. What is the highest level of education you have completed? *Please check one*.

◯ Grade school

◯ High-school degree or GED

◯ Two-year college degree

◯ Trade-school or professional-school degree

◯ Bachelor's degree

◯ Graduate degree

43. Are you currently a full-time student at a college or university? *Please check one*. **If you are a full-time student, but you are not currently taking classes, check one of the Yes boxes.**

◯ Yes, I am an undergraduate student.

◯ Yes, I am a graduate student.

◯ No, I am not a full-time student at a college or university.

44. What is your annual household (family) income? *Please check one*. **If you are claimed as a dependent by your parents, please report your parents' household income.**

◯ Less than $15,000

◯ $15,001 to $30,000

◯ $30,001 to $45,000

◯ $45,001 to $60,000

◯ $60,001 to $75,000

◯ $75,001 to $90,000

◯ More than $90,000

45. Do you have any final comments regarding this survey? If so, please write your comments here.

46. How would you like to be paid for your participation?

◯ money order (you will be sent an email requesting your mailing address)

◯ cash (arrangement for payment to be determined via email)

47. How did you hear about this survey?

◯ CMU bboard

◯ Tepper email

◯ Flier

◯ Word of Mouth

◯ Other (please specify)

Thank you for participating in this study! Please see the facilitator for payment.