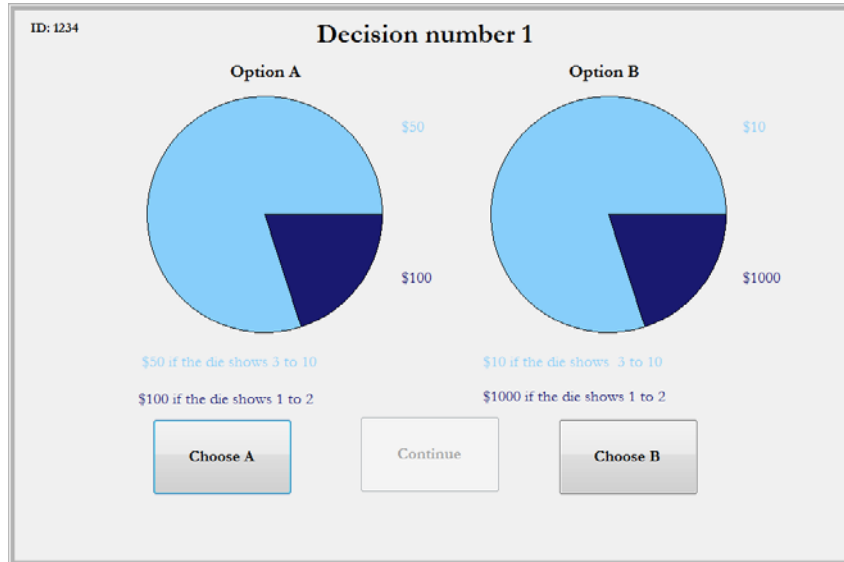


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APPENDIX A: INSTRUCTIONS

Station T2: Lottery Choice Task for Money

You will be shown two pairs of lotteries on the computer screen. You will see one pair at a time. Here is an image of what the computer screen will look like:



On each of the screens you will be asked to make a choice between the two lotteries. You may select either one of them. Each lottery has two possible prizes, a lower one shown in lighter blue and a higher one shown in darker blue. The prizes differ across the pair. In the image above, the left lottery has one prize of \$50 and another prize of \$100. These are just illustrations; the actual prizes will not be this large. The pie chart above the text that shows you the prize displays the chances you have of getting that prize.

The lotteries will be played out using a ten-sided die. The area that is darker blue shows the chances of getting the higher prize, here \$100. This will happen if the result of the die roll is either a 1 or a 2. In this case it is 20% of the area, thus a 20% chance, or 2 out of 10. The area that is light blue shows the chances of getting the lower prize of \$50. This will happen if the result of the die roll is anything other than a 1 or a 2. It is an 80% chance, or 8 chances out of 10.

You can read the pie chart for the lottery on the right in the same way. The darker blue area is again 20% and corresponds to the chances of getting the higher prize, which is \$1000 for this illustrative lottery. The light blue area is again 80% and corresponds to the chances of getting the lower prize, which is \$10 in this illustration.

On each screen you will be asked to choose between pairs of lotteries like these. We will play out each lottery as soon as you have finished making your choice. We will then keep track of your cumulative earnings that will be paid to you at the end of the session.

So that you may understand your task better we will first go over a practice round before we start the ones for which you will get paid. In the practice you will not be paid.

Station C1: Simulator: 3 Practice Drives

Please familiarize yourself with the controls of the simulator. The steering wheel and pedals act just like the comparable features of a normal automatic vehicle although they feel a bit different.

Do you have any questions?

In this first practice drive you are going to take 7th Ave to work. This is for practice only and you will earn no money based on this drive.

In this second practice drive you are going to take 9th Ave to work. Do you have any questions?

How do you feel? Do you have any feeling of nausea at all?

Would you like to get up and move around, perhaps have some water?

Remember from the video that sometimes when you take 9th Ave there will be a school bus pulling up from C street. This bus stops at every intersection from C to F Street. If this happens, you and the other cars in front of you will have to also stop.

In this third practice drive you will once again take 9th Ave and we will make sure that there is a school bus present so you can see what happens then.

Station C2 Simulator: 3 Drives for Money

Your first paid simulator task will be to drive to work from home, using either 7th or 9th Ave. You will do this three times. Which way you take is your choice. I will not tell you which way to go. While you are waiting at the red light at the 7th Ave intersection you can make your choice.

By driving to work, you will be able to earn a \$_____ daily wage. If you end up behind the bus on 9th Ave., you will be late for work and will lose \$_____ of

your daily wage, thus being paid only \$.25 cents. If you do not end up behind the bus, you will arrive to work on time and receive your full \$_____ wage. If you take 7th Ave. you will receive your \$_____ wage minus a toll that is charged for this route. Thus there is no risk of getting to work late if you take 7th Ave.

Notice that no matter how fast you drive you will always be late for work if you get stuck behind a school bus.

On 9th Ave. there is a chance that a school bus will be on the route with frequent stops. You will not know for sure, however, if there is going to be a bus.

Here I have three identical decks with ten cards. _____ of them have a bus on them, and _____ of them do not. Please take a look at the cards to make sure that this is the case.

Before you drive you will select a card from one of the decks without seeing whether it has a bus on it or not. I will then look at it and start the simulation. If the card shows me a bus I will start a simulation that has a school bus, and if the card does not show a bus I will start a simulation without a bus. You will be able to view the card after you have finished all three of your drives, but not before. We will use a new deck for each drive so that the proportion of cards with a bus stays the same.

On 7th Ave. there is no bus, but a toll must be paid if you take this route.

Here are three other decks of cards, labelled "Tolls." As you can see in the first deck here, we have tolls ranging from \$_____ up to \$_____, the second deck has tolls ranging from \$_____ up to \$_____, and the third deck has tolls ranging from \$_____ up to \$_____.

I will separately shuffle all three decks now, one deck at a time and then I will place them in front of you face down. So you will see three shuffled decks.

Please select three toll cards, taking one from each deck. Turn them over. This is the amount of money you will have to pay out of your wages if you take 7th Ave. You will be doing this drive three times, each with a different toll.

We will now use a 6-sided die to select the order in which you will drive with these tolls. If the first roll shows 1-2 you will have the low toll first, if it is 3-4, the medium toll and 5-6 the high toll. If the second roll is 1-3 your second toll will be lower of the two remaining.

We will record the order of these tolls for use in a later task.

I will now shuffle these 10 Bus cards. You will choose one, but I will not reveal the card to you until after you have driven. Thus, when you drive, you do not know in advance if there is a bus on 9th Ave..

This handout shows you a summary of the task. Please review it before we start. Do you have any questions?

Are you ready for your first drive? Do you know what the toll is?

Please take a Bus card.

Are you ready for your second drive? Do you know what the toll is? Please take a Bus card.

It is time for the third drive. Do you know the toll? Please take a Bus card.

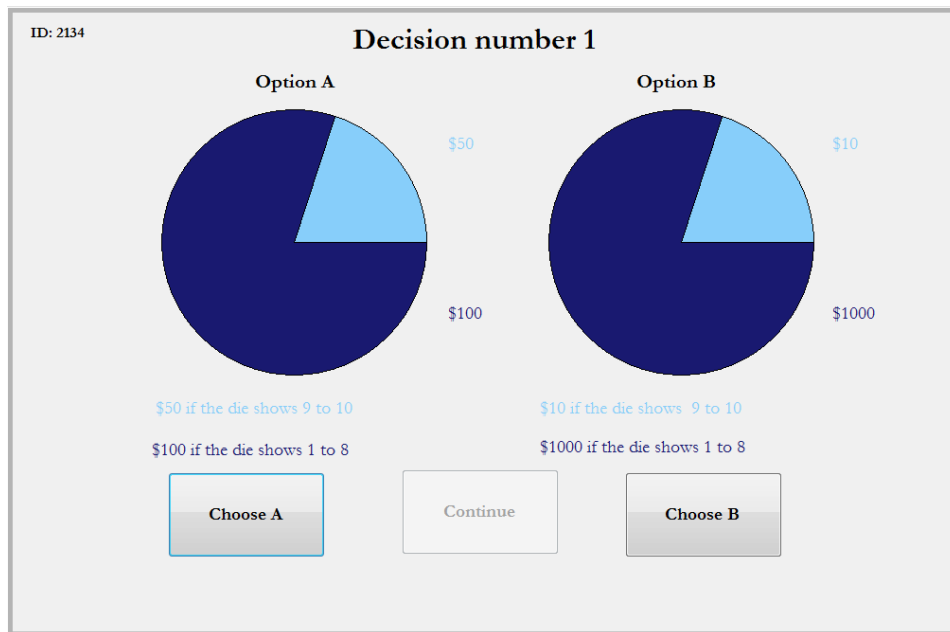
C2 bullets

- Pick a Bus card – do not turn it over
- Start at home
- Your daily wage is \$_____
- If you take 7th Ave. pay the toll on the toll card – it is subtracted from your wage
- If you take 9th Ave. and there IS a bus your wage is reduced to \$_____
- If you take 9th Ave. and there is NO bus you get your full wages
- There is never a bus on 7th Ave.
- You may choose either 7th or 9th Ave
- You may make a different choice each time you drive

Do this 3 times, each time with a different toll.

Station T3: Lottery Choice Task for Money

You will now be asked to make two more choices over pairs of lotteries, as you did last time. Recall that this is what the screen will look like for a typical choice, although the prizes and probabilities will be different. As an example we show here a lottery where there is a larger dark blue area than in the illustration we used earlier, corresponding to the higher prizes of \$100 in the left and \$1,000 in the right lottery.



These choices will be made in the same manner as before, and we will be using a 10-sided die to play them out to see your earnings.

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APPENDIX B: ADDITIONAL RESULTS

EUT with CARA utility function

FIELD LOTTERY

Log pseudolikelihood = -580.81679

Number of obs = 1052
Wald chi2(6) = 30.32
Prob > chi2 = 0.0000

(Std. Err. adjusted for 282 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|-----------|
| <hr/> | | | | | | |
| r | | | | | | |
| lott2 | .1270639 | .1649399 | 0.77 | 0.441 | -.1962123 | .4503402 |
| cumW_eA | -.0155801 | .0062899 | -2.48 | 0.013 | -.027908 | -.0032521 |
| WS2_eA | .0162097 | .0064101 | 2.53 | 0.011 | .0036462 | .0287733 |
| oftenplay3d | -.0206686 | .0086851 | -2.38 | 0.017 | -.037691 | -.0036462 |
| oldage_3d | .0314651 | .0243382 | 1.29 | 0.196 | -.0162368 | .0791671 |
| task0 | -.0943467 | .0667847 | -1.41 | 0.158 | -.2252423 | .0365488 |
| _cons | .354519 | .1504137 | 2.36 | 0.018 | .0597137 | .6493244 |
| <hr/> | | | | | | |
| LNmu | | | | | | |
| lott2 | .54479 | .7777146 | 0.70 | 0.484 | -.9795026 | 2.069083 |
| cumW_eA | -.1294508 | .0598113 | -2.16 | 0.030 | -.2466787 | -.0122228 |
| WS2_eA | .1308809 | .0610659 | 2.14 | 0.032 | .0111939 | .2505679 |
| oftenplay3d | -.2665895 | .1133901 | -2.35 | 0.019 | -.4888299 | -.044349 |
| oldage_3d | .3128299 | .1498795 | 2.09 | 0.037 | .0190714 | .6065884 |
| task0 | -.5399167 | .288891 | -1.87 | 0.062 | -1.106133 | .0262993 |
| _cons | -.5449751 | .5719134 | -0.95 | 0.341 | -1.665905 | .5759545 |

STUDENT LOTTERY

Log pseudolikelihood = -385.5907

Number of obs = 813
Wald chi2(6) = 24.30
Prob > chi2 = 0.0005

(Std. Err. adjusted for 212 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|-----------|
| <hr/> | | | | | | |
| r | | | | | | |
| lott2 | -.1436255 | .1015882 | -1.41 | 0.157 | -.3427348 | .0554837 |
| cumW_eA | -.0144726 | .0045567 | -3.18 | 0.001 | -.0234035 | -.0055417 |
| WS2_eA | .0192766 | .0052076 | 3.70 | 0.000 | .0090699 | .0294832 |
| oftenplay3d | -.0006875 | .0110345 | -0.06 | 0.950 | -.0223147 | .0209397 |
| oldage_3d | .1165104 | .1032033 | 1.13 | 0.259 | -.0857643 | .3187851 |
| task0 | -.0179558 | .0284136 | -0.63 | 0.527 | -.0736453 | .0377338 |
| _cons | .1930771 | .0669547 | 2.88 | 0.004 | .0618483 | .3243059 |
| <hr/> | | | | | | |
| LNmu | | | | | | |
| lott2 | -2.15232 | 1.450289 | -1.48 | 0.138 | -4.994833 | .6901941 |
| cumW_eA | -.2223012 | .0735765 | -3.02 | 0.003 | -.3665085 | -.078094 |
| WS2_eA | .2732504 | .086452 | 3.16 | 0.002 | .1038076 | .4426933 |
| oftenplay3d | -.0526614 | .1083488 | -0.49 | 0.627 | -.2650211 | .1596984 |
| oldage_3d | .4251373 | .1570454 | 2.71 | 0.007 | .1173341 | .7329406 |
| task0 | .0994848 | .3169223 | 0.31 | 0.754 | -.5216716 | .7206412 |
| _cons | -1.908375 | .5270944 | -3.62 | 0.000 | -2.941461 | -.8752887 |

FIELD DRIVING

Log pseudolikelihood = -415.07505
 Number of obs = 834
 Wald chi2(4) = 20.39
 Prob > chi2 = 0.0004

(Std. Err. adjusted for 278 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|-----------|
| ----- | | | | | | |
| r | | | | | | |
| cumW_eA | -.0163023 | .0045883 | -3.55 | 0.000 | -.0252952 | -.0073093 |
| oftenplay3d | -.0160066 | .0120159 | -1.33 | 0.183 | -.0395573 | .0075442 |
| oldage_3d | .0305544 | .0154775 | 1.97 | 0.048 | .000219 | .0608898 |
| task0 | .0461769 | .0298942 | 1.54 | 0.122 | -.0124146 | .1047684 |
| _cons | .233287 | .0695837 | 3.35 | 0.001 | .0969055 | .3696686 |
| ----- | | | | | | |
| LNmu | | | | | | |
| cumW_eA | -.0379372 | .0324725 | -1.17 | 0.243 | -.1015821 | .0257077 |
| oftenplay3d | -.2284904 | .1095579 | -2.09 | 0.037 | -.4432199 | -.0137608 |
| oldage_3d | .12441 | .101265 | 1.23 | 0.219 | -.0740657 | .3228857 |
| task0 | .122205 | .1715093 | 0.71 | 0.476 | -.213947 | .4583571 |
| _cons | -1.364254 | .2864882 | -4.76 | 0.000 | -1.925761 | -.8027479 |

STUDENT DRIVING

Log pseudolikelihood = -290.98004
 Number of obs = 623
 Wald chi2(4) = 7.99
 Prob > chi2 = 0.0920

(Std. Err. adjusted for 208 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|-----------|
| ----- | | | | | | |
| r | | | | | | |
| cumW_eA | -.0034387 | .0029955 | -1.15 | 0.251 | -.0093098 | .0024324 |
| oftenplay3d | .0031846 | .0064561 | 0.49 | 0.622 | -.0094691 | .0158383 |
| oldage_3d | .062505 | .0522647 | 1.20 | 0.232 | -.0399319 | .1649419 |
| task0 | .0637178 | .0260048 | 2.45 | 0.014 | .0127493 | .1146863 |
| _cons | -.017266 | .043216 | -0.40 | 0.690 | -.1019678 | .0674358 |
| ----- | | | | | | |
| LNmu | | | | | | |
| cumW_eA | -.1227127 | .035875 | -3.42 | 0.001 | -.1930264 | -.0523989 |
| oftenplay3d | .046206 | .1313228 | 0.35 | 0.725 | -.211182 | .3035939 |
| oldage_3d | .1488753 | .262937 | 0.57 | 0.571 | -.3664717 | .6642223 |
| task0 | 1.125063 | .322656 | 3.49 | 0.000 | .4926691 | 1.757457 |
| _cons | -3.749662 | 1.097086 | -3.42 | 0.001 | -5.899912 | -1.599412 |

EUT CRRA with demographics

FIELD LOTTERY

Log pseudolikelihood = -570.9378

Number of obs = 1050
Wald chi2(13) = 16.03
Prob > chi2 = 0.2477

(Std. Err. adjusted for 281 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|---------------------|-------|-------|----------------------|-----------|
| <hr/> | | | | | | |
| r | | | | | | |
| lott2 | .6006686 | .3244735 | 1.85 | 0.064 | -.0352878 | 1.236625 |
| cumW_eA | .0212106 | .0847296 | 0.25 | 0.802 | -.1448563 | .1872775 |
| WS2_eA | -.0245992 | .0844121 | -0.29 | 0.771 | -.1900439 | .1408456 |
| oftenplay3d | -.041251 | .1293525 | -0.32 | 0.750 | -.2947773 | .2122753 |
| oldage_3d | .0236124 | .1494158 | 0.16 | 0.874 | -.2692372 | .316462 |
| task0 | -.3488199 | .1174906 | -2.97 | 0.003 | -.5790973 | -.1185425 |
| female | .0228839 | .1323595 | 0.17 | 0.863 | -.236536 | .2823037 |
| lowinc | .0391845 | .1413515 | 0.28 | 0.782 | -.2378594 | .3162284 |
| highinc | .0360494 | .1330448 | 0.27 | 0.786 | -.2247136 | .2968124 |
| Educ | -.1665033 | .1730925 | -0.96 | 0.336 | -.5057583 | .1727517 |
| age18_30 | -.0689022 | .3533606 | -0.19 | 0.845 | -.7614763 | .623672 |
| age55_75 | -.1440777 | .1808237 | -0.80 | 0.426 | -.4984856 | .2103302 |
| black | -.1196992 | .1386301 | -0.86 | 0.388 | -.3914093 | .1520108 |
| _cons | 1.253532 | .3525512 | 3.56 | 0.000 | .5625444 | 1.94452 |
| <hr/> | | | | | | |
| LNmu | | | | | | |
| lott2 | .0259081 | .4658968 | 0.06 | 0.956 | -.8872329 | .9390491 |
| cumW_eA | .0681927 | .0728918 | 0.94 | 0.350 | -.0746726 | .211058 |
| WS2_eA | -.0636905 | .0737011 | -0.86 | 0.387 | -.2081421 | .080761 |
| oftenplay3d | -.0807883 | .1965208 | -0.41 | 0.681 | -.4659621 | .3043854 |
| oldage_3d | .1449378 | .1990829 | 0.73 | 0.467 | -.2452576 | .5351332 |
| task0 | -.1629182 | .1611965 | -1.01 | 0.312 | -.4788575 | .1530211 |
| female | .3014883 | .202173 | 1.49 | 0.136 | -.0947635 | .69774 |
| lowinc | .129567 | .2424364 | 0.53 | 0.593 | -.3455997 | .6047336 |
| highinc | -.1646814 | .1980599 | -0.83 | 0.406 | -.5528717 | .2235089 |
| Educ | .0951216 | .2445307 | 0.39 | 0.697 | -.3841497 | .5743929 |
| age18_30 | .0770907 | .4558986 | 0.17 | 0.866 | -.8164541 | .9706355 |
| age55_75 | .0762551 | .2129471 | 0.36 | 0.720 | -.3411135 | .4936236 |
| black | -.0099919 | .2446364 | -0.04 | 0.967 | -.4894705 | .4694867 |
| _cons | .2283577 | .4592206 | 0.50 | 0.619 | -.6716981 | 1.128414 |

STUDENT LOTTERY

Log pseudolikelihood = -370.93437

Number of obs = 811
Wald chi2(10) = 11.51
Prob > chi2 = 0.3194

(Std. Err. adjusted for 211 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|-----------|
| <hr/> | | | | | | |
| r | | | | | | |
| lott2 | .0783503 | .2718283 | 0.29 | 0.773 | -.4544233 | .6111239 |
| cumW_eA | -.0176036 | .0314969 | -0.56 | 0.576 | -.0793364 | .0441292 |
| WS2_eA | .0228826 | .0309805 | 0.74 | 0.460 | -.037838 | .0836033 |
| oftenplay3d | -.0670163 | .0412744 | -1.62 | 0.104 | -.1479128 | .0138801 |
| oldage_3d | .1395174 | .1487881 | 0.94 | 0.348 | -.1521019 | .4311368 |
| task0 | -.1772557 | .1136549 | -1.56 | 0.119 | -.4000152 | .0455038 |
| female | .1038829 | .1001576 | 1.04 | 0.300 | -.0924225 | .3001882 |
| lowinc | -.0822806 | .1686228 | -0.49 | 0.626 | -.4127752 | .248214 |
| highinc | .041417 | .1841402 | 0.22 | 0.822 | -.3194911 | .402325 |
| black | .1356133 | .0827991 | 1.64 | 0.101 | -.02667 | .2978966 |
| _cons | .7186432 | .2478113 | 2.90 | 0.004 | .2329421 | 1.204344 |
| <hr/> | | | | | | |
| LNmu | | | | | | |
| lott2 | -.8622296 | .4665617 | -1.85 | 0.065 | -1.776674 | .0522144 |
| cumW_eA | -.0579506 | .0565577 | -1.02 | 0.306 | -.1688016 | .0529004 |
| WS2_eA | .0700603 | .0563908 | 1.24 | 0.214 | -.0404637 | .1805843 |
| oftenplay3d | -.0696847 | .0748182 | -0.93 | 0.352 | -.2163258 | .0769563 |
| oldage_3d | .0955215 | .1076632 | 0.89 | 0.375 | -.1154944 | .3065374 |
| task0 | .2590777 | .1767095 | 1.47 | 0.143 | -.0872665 | .605422 |
| female | -.1285645 | .1597439 | -0.80 | 0.421 | -.4416567 | .1845277 |
| lowinc | -.4693619 | .236026 | -1.99 | 0.047 | -.9319644 | -.0067593 |
| highinc | -.4958239 | .2503676 | -1.98 | 0.048 | -.9865354 | -.0051124 |
| black | -.0098316 | .1439059 | -0.07 | 0.946 | -.291882 | .2722189 |
| _cons | .1424763 | .3520983 | 0.40 | 0.686 | -.5476237 | .8325763 |

FIELD DRIVING

Log pseudolikelihood = -406.81489

Number of obs = 834
Wald chi2(11) = 13.83
Prob > chi2 = 0.2426

(Std. Err. adjusted for 278 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|----------|
| <hr/> | | | | | | |
| r | | | | | | |
| cumW_eA | -.0523801 | .0220004 | -2.38 | 0.017 | -.0955001 | -.00926 |
| oftenplay3d | -.0253258 | .1155005 | -0.22 | 0.826 | -.2517027 | .2010511 |
| oldage_3d | .0030437 | .1336237 | 0.02 | 0.982 | -.258854 | .2649414 |
| task0 | .0707668 | .0829224 | 0.85 | 0.393 | -.0917582 | .2332918 |
| female | .1203178 | .1252991 | 0.96 | 0.337 | -.1252639 | .3658994 |
| lowinc | .0987432 | .158096 | 0.62 | 0.532 | -.2111192 | .4086056 |
| highinc | .0871049 | .1509544 | 0.58 | 0.564 | -.2087603 | .3829701 |
| Educ | -.0872481 | .1632639 | -0.53 | 0.593 | -.4072395 | .2327434 |
| age18_30 | -.3686202 | .380397 | -0.97 | 0.333 | -1.114185 | .3769442 |
| age55_75 | -.0295884 | .2227757 | -0.13 | 0.894 | -.4662207 | .4070439 |
| black | .1891536 | .1743607 | 1.08 | 0.278 | -.1525871 | .5308944 |
| _cons | .6808929 | .3157162 | 2.16 | 0.031 | .0621005 | 1.299685 |
| <hr/> | | | | | | |
| LNmu | | | | | | |
| cumW_eA | .0709724 | .0306514 | 2.32 | 0.021 | .0108968 | .131048 |
| oftenplay3d | -.2269534 | .1634256 | -1.39 | 0.165 | -.5472617 | .093355 |
| oldage_3d | .1307506 | .1882698 | 0.69 | 0.487 | -.2382514 | .4997525 |
| task0 | -.0525527 | .1362554 | -0.39 | 0.700 | -.3196085 | .214503 |
| female | .3230068 | .1734146 | 1.86 | 0.063 | -.0168797 | .6628932 |
| lowinc | .2101962 | .216439 | 0.97 | 0.331 | -.2140165 | .6344089 |
| highinc | .4097623 | .2064864 | 1.98 | 0.047 | .0050565 | .8144682 |
| Educ | -.273901 | .2340611 | -1.17 | 0.242 | -.7326522 | .1848503 |
| age18_30 | .4717338 | .4539317 | 1.04 | 0.299 | -.417956 | 1.361424 |
| age55_75 | -.0479702 | .2803924 | -0.17 | 0.864 | -.5975292 | .5015887 |
| black | -.0001242 | .2197292 | -0.00 | 1.000 | -.4307855 | .430537 |
| _cons | -.327838 | .3818104 | -0.86 | 0.391 | -1.076173 | .4204967 |

STUDENT DRIVING

Log pseudolikelihood = -284.31449

Number of obs = 623
Wald chi2(8) = 19.37
Prob > chi2 = 0.0130

(Std. Err. adjusted for 208 clusters in sid)

| | Coef. | Robust Std. Err. | z | P> z | [95% Conf. Interval] | |
|-------------|-----------|------------------|-------|-------|----------------------|-----------|
| <hr/> | | | | | | |
| r | | | | | | |
| cumW_eA | -.073108 | .0237985 | -3.07 | 0.002 | -.1197522 | -.0264639 |
| oftenplay3d | -.0242838 | .0655029 | -0.37 | 0.711 | -.1526671 | .1040995 |
| oldage_3d | .0652388 | .1016399 | 0.64 | 0.521 | -.1339717 | .2644493 |
| task0 | .2971055 | .1069499 | 2.78 | 0.005 | .0874875 | .5067235 |
| female | .3522617 | .1617161 | 2.18 | 0.029 | .035304 | .6692195 |
| lowinc | -.081346 | .1749401 | -0.46 | 0.642 | -.4242223 | .2615303 |
| highinc | .110076 | .1712291 | 0.64 | 0.520 | -.2255268 | .4456789 |
| black | .1496464 | .1435078 | 1.04 | 0.297 | -.1316237 | .4309166 |
| _cons | .0617297 | .3265983 | 0.19 | 0.850 | -.5783911 | .7018506 |
| <hr/> | | | | | | |
| LNmu | | | | | | |
| cumW_eA | .0081911 | .0296035 | 0.28 | 0.782 | -.0498307 | .066213 |
| oftenplay3d | .0153414 | .0874188 | 0.18 | 0.861 | -.1559963 | .1866791 |
| oldage_3d | -.1332474 | .1049991 | -1.27 | 0.204 | -.3390419 | .0725471 |
| task0 | .0086441 | .1279013 | 0.07 | 0.946 | -.242038 | .2593261 |
| female | -.4432208 | .1819034 | -2.44 | 0.015 | -.7997448 | -.0866968 |
| lowinc | -.2694852 | .2301026 | -1.17 | 0.242 | -.7204781 | .1815076 |
| highinc | -.1155303 | .2439352 | -0.47 | 0.636 | -.5936346 | .362574 |
| black | -.1574937 | .1871331 | -0.84 | 0.400 | -.5242678 | .2092803 |
| _cons | .50739 | .4433246 | 1.14 | 0.252 | -.3615102 | 1.37629 |

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APPENDIX C: STRUCTURAL ECONOMETRIC SPECIFICATION**

Starting from the EUT specifications in equations 1–3 and 6-7 in the main text, we can construct the following latent index that reflects the difference in the subject’s valuation of two alternatives in a given binary driving choice (or binary lottery choice). This valuation reflects subject’s preferences over the safer and the riskier options

$$(C1) \quad \nabla EU_i = EU_{i,R} - EU_{i,S}$$

An important extension of the core model is to allow for subjects to make some *behavioral* errors. We employ the error specification originally due to Fechner and popularized by Hey and Orme (1994). This error specification posits the latent index

$$(C1') \quad \nabla EU = (EUR - EUL)/\mu$$

instead of (C1), where μ is a structural “noise parameter” used to allow some errors from the perspective of the deterministic EUT model. It simply scales the actual difference in EU either up or down. As $\mu \rightarrow 0$ this specification collapses to the deterministic choice EUT model, where the choice is strictly determined by the EU of the two lotteries; but as μ gets larger and larger the choice essentially becomes random.

This latent index, based on latent EUT preferences, is then linked to observed choices using a function $\Phi(\nabla EU)$. We assume this to be a “probit” function that takes any argument between $\pm\infty$ and transforms it into a number between 0 and 1. Thus we have the probit link function,

$$(C2) \quad \text{prob}(\text{choose risky option}) = \Phi(\nabla EU)$$

The index defined by (C1') is linked to the observed choices by specifying that the risky option is chosen when $\Phi(\nabla EU) > 1/2$, which is implied by (C2). Therefore, the purpose of this link function is to model the usual statistical errors. The value of the Fechner parameter μ informs us of how flat the link function is. When $\mu=1$, this specification collapses to (C1), where the probability of picking one route choice (lottery) is given by (C2). Thus μ can be viewed as a parameter that flattens out the link functions as it gets larger or sharpens it as it gets smaller. By varying the shape of the link function, one can imagine subjects that are more (or less) sensitive to a given difference in the latent index, i.e. the difference in EU. We can estimate μ as a function of our covariates.

The likelihood of the observed responses, conditional on the EU and the CRRA specifications being true, depends on the estimates of r given the above statistical specification and the observed choices. The conditional log-likelihood is then

$$(C3) \ln L(r; y, \mathbf{X}) = \sum_i [\ln \Phi(\nabla EU) \times \mathbf{I}(y_i = 1) + \ln(1 - \Phi(\nabla EU)) \times \mathbf{I}(y_i = -1)]$$

where $\mathbf{I}(\cdot)$ is the indicator function, $y_i = 1(-1)$ denotes that the subject chose the risky (safe) route in task i , and \mathbf{X} is a vector of individual characteristics reflecting demographics. Extending this procedure to RDU we would have

$$(C3') \ln L(r, \gamma; y, \mathbf{X}) = \sum_i [\ln \Phi(\nabla RDU) \times \mathbf{I}(y_i = 1) + \ln(1 - \Phi(\nabla RDU)) \times \mathbf{I}(y_i = -1)]$$