

**These are the surveys and instructions given to subjects in the second of four sessions in one of our two conditions. This is the condition using multiple driver simulations.**

Session 2 multi-driver experiment tasks are scheduled for 1 hour and 25 minutes.

Welcome	5 minutes
lottery	10 minutes
task instructions	10 minutes
task	30 minutes
travel time	5 minutes
travel time	5 minute
lottery	5 minute
payment	5 minute
sum	1 hour 15 minutes
break	10 minutes

## **Welcome**

Thank you for returning for session two of the study. We are delighted to have you here.

We expect the session to last about two hours and you will have a chance to make some earnings through several tasks in addition to the participation fee of \$\_\_\_\_. Each task has specific instructions that you will be able to review and ask questions about before performing any tasks.

We will again show you movies of traffic simulations and ask you to indicate your choices on computers. No advanced computer skills are necessary. We are here to help you so feel free to ask anything you like, however we ask that you ask your questions in private so as not to disturb other participants. Simply raise your hand and we will come to your desk and help you out. At no time will you need to use any of your own money in the tasks. All tasks are designed so that you will be earning money.

You may skip specific questions and tasks. However, if you skip paid tasks you will not be paid for them. If you skip a large number of questions or tasks you may need to withdraw, in which case you will be paid for the tasks you have completed and \$10 of the participation fee as a compensation for your travel expenses.

Before we begin the experiment, I will summarize the tasks you will be completing today.

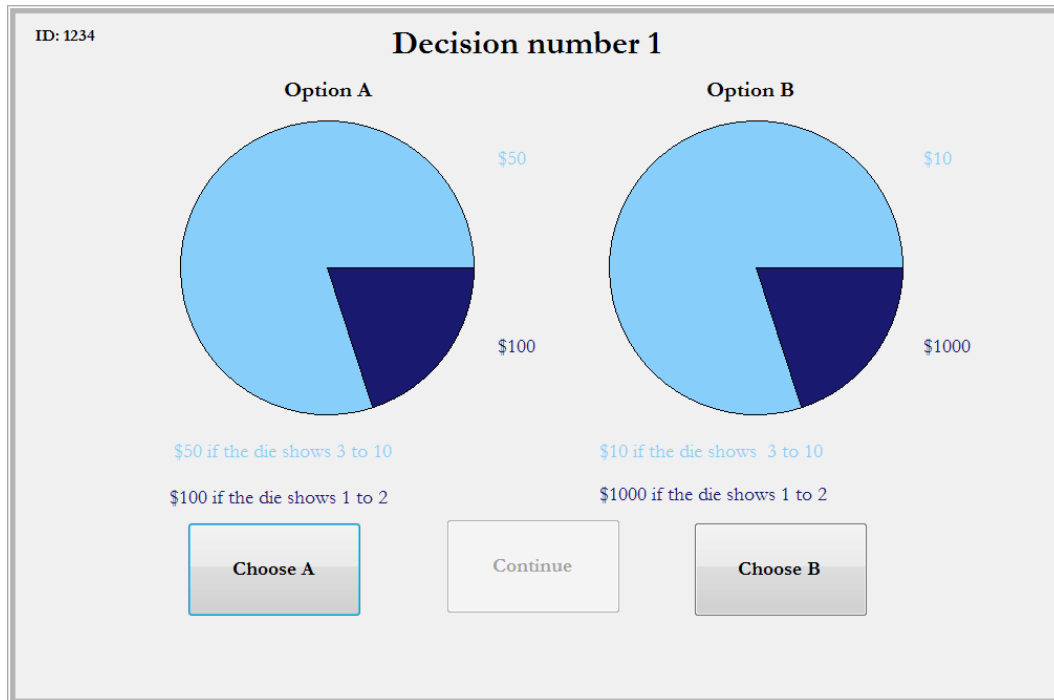
## **HANDOUT: Overview of the Session**

- Lottery task for money
- Review of simulation task
- Simulation movie travel time task for money
- 10 tasks for money
- Lottery task for money
- Instructions for field driving
- Payment and schedule next visit

The money you receive throughout the tasks is in addition to your show-up fee.

## Lottery Choice Task for Money

(This task used less than 10 minutes in pretests) 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

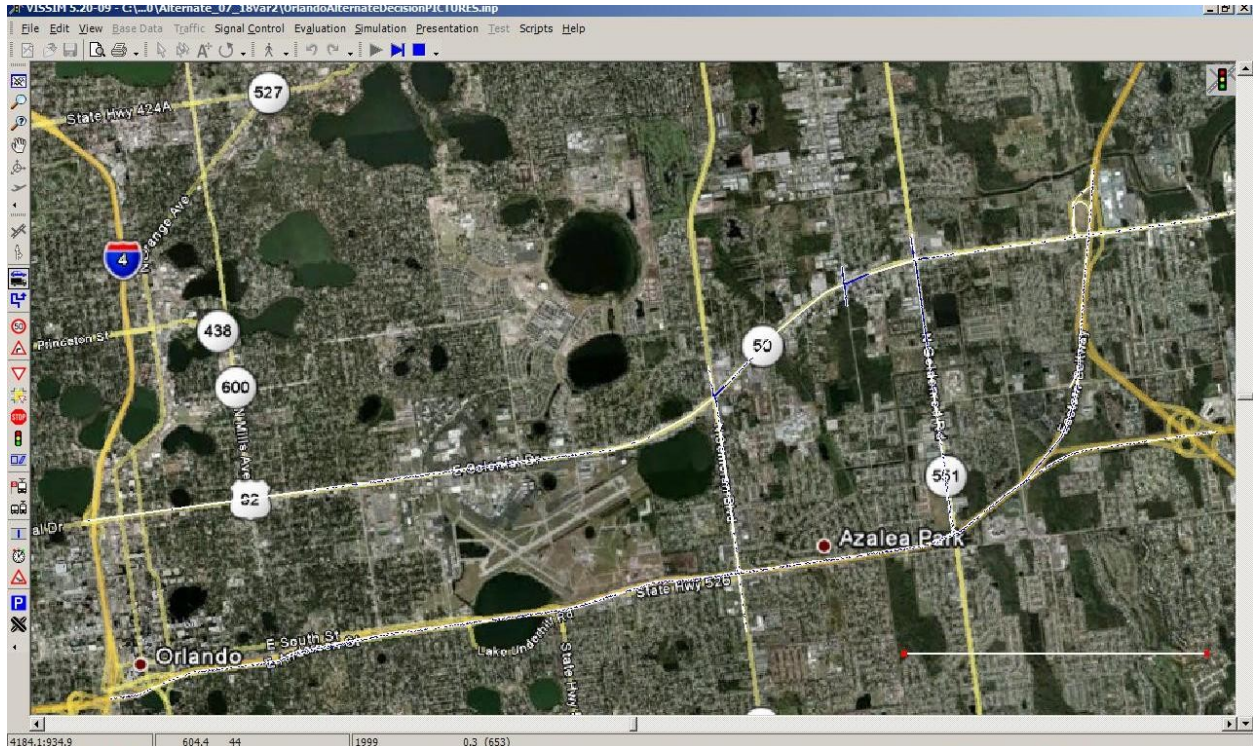
again 80% and corresponds to the chances of getting the lower prize, which is \$10 in this illustration.

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.

## Instructions for route choice task.

(These instructions and the tasks will take less than 40 minutes). Like you did in the previous session, now you will be asked to make route choices in a simulated traffic environment. The simulation is from the same commuter route in \_\_\_\_\_. Cars are driving in an east-west direction for 5 miles towards downtown Orlando using either \_\_\_\_\_ or \_\_\_\_\_. Here is a map of these two routes as it is shown in the simulation:



We review here the instructions you received last time:

\_\_\_\_\_ is a freeway with \_\_\_\_\_ lanes in the \_\_\_\_\_ direction. \_\_\_\_\_ is a local road with intersections and traffic lights. It has \_\_\_\_\_ lanes in the \_\_\_\_\_ direction. The latter is indicated by \_\_\_\_\_ on the map, and \_\_\_\_\_ is the route \_\_\_\_\_. Both of the routes have simulated traffic in addition to the cars operated by the people in this room. The volume of this traffic on each route is the same across all the simulations.

Each of you here own a car that will be driving on either \_\_\_\_\_ or \_\_\_\_\_ in this simulation. Which route you take is your own choice. The total volume of traffic on the two routes therefore depends on the choices everyone makes. Every person in the room makes a choice for one car. However, there are several additional simulated cars in the simulation that copy the choice of each participant. We will call these copycat cars. Your computers screen will show you how many vehicles copy the choice you

make for yours. The total number of vehicles controlled by people in this room is \_\_\_\_\_. In order to distribute these vehicles across all of you who are present today, we may have had to assign a slightly different number to each of you. Since there are \_\_\_\_\_ people present in the room, each of you will have \_\_\_\_/\_\_\_\_ cars that follow your choice, including your own. Some of you have one vehicle more or less than others. The difference is never more than that. Your computer screen will tell you what number applies to you. It also tells you how many people in the room that each number applies to.

Thus, the total traffic volume on each route depends on the constant background volume of simulated vehicles, the cars owned by each person in the room and the copycats that follow these.

You will be making choices between the two routes ten times. We will not start the simulation until everyone has finished making their choice. You will not actually be driving your car in real time in the simulation, just making a route choice for it. You will be asked to enter your choice on the computer. All your cars will start on the route within the same 2 minute interval, which is a few seconds into the simulation. The exact starting time and the speed of each car is randomly determined by the program. On \_\_\_\_\_ the maximum speed for all vehicles is in the range \_\_\_\_\_ mph. On \_\_\_\_\_ the maximum speed is in the range \_\_\_\_\_ mph. Cars will travel at the maximum speed if congestion or traffic lights do not slow them down.

We will start by showing you a simulation with only the constant simulated cars. None of the people operated cars or the copy-cat cars will be included this time.

All of you will be asked to make a route choice \_\_\_\_\_ times and each time we will run a simulation that reflects your route choices. Thus the \_\_\_\_\_ vehicles that are of the color \_\_\_\_\_ will be divided over the two routes, \_\_\_\_\_, according to the choices you made. All cars will then drive the 5 miles \_\_\_\_\_ bound on their selected routes.

You can think of each simulation as your morning commute to work in \_\_\_\_\_. You will commute to work for ten days, and each day you will be paid a wage of \$\_\_\_\_\_.

There is a cost to you of the time you use getting to work and this cost depends on how long it takes. Here is a table showing you a summary of these costs in \_\_\_\_\_ intervals. The exact cost depends on the exact number of \_\_\_\_\_. You will be able to see on your screens immediately after the simulation is over. The same screen will also show you the exact cost. The formula for calculating this cost is

Cost=\_\_\_\_\_

You do not need to use this formula to calculate your costs since the table below shows you what it means for you.  
*This is a sample table only.*



Travel Time in Seconds	Cost to You in Dollars
400	\$1.33
450	\$1.53
500	\$1.73
550	\$1.94
600	\$2.15
650	\$2.37
700	\$2.59
750	\$2.82
800	\$3.05
850	\$3.28
900	\$3.51
950	\$3.74
1000	\$3.98
1050	\$4.22
1100	\$4.46
1150	\$4.71
1200	\$4.95

Whichever route you take you will have to pay this travel cost, but since the routes may not take the same amount of time, the cost will vary. In addition, if you take the toll road SR408 you will also have to pay a toll of \$\_\_\_. Your net earnings consist of the daily wage (\$\_\_\_), minus the toll if you select the toll road (\$\_\_\_), minus the travel time cost. You will never make a net loss in a period. If that were to happen we will simply set the period earnings to \$0. Since your travel time depends on the exact departure time and the speed that the simulation program randomly assigns to your car, we will calculate the average travel time on each route and charge everyone on that route the same cost for the travel time use. Of course, each time we run the simulation the average travel times are affected not just by how many of you decide to take each of the routes but also by the particular speeds assigned to the cars in the simulation.

You will be making a route selection over \_\_\_\_\_ periods.

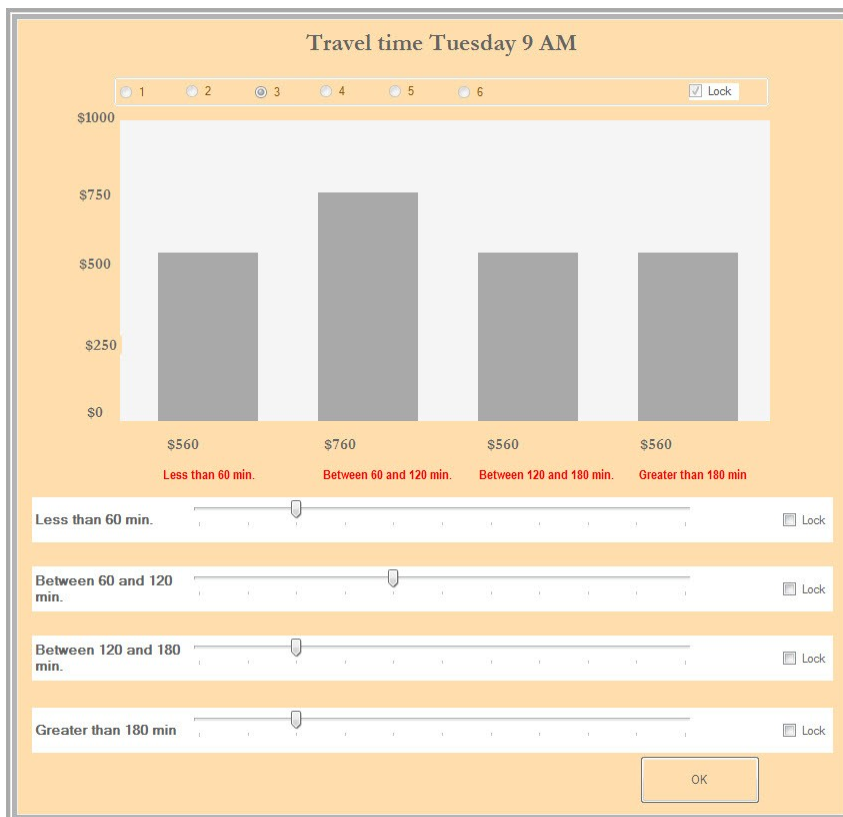
So that you may understand your task better we will first go over a practice round together before we start the 10 periods for which you will get paid. In the practice you will not be paid.

## Earnings by Simulation Travel Times

(This task will take less than 5 minutes) We have now finished the practice task for making travel route choices. Before we go on with the ones that are for money you will have a task where you will be paid according to how long it takes to travel on \_\_\_\_\_ in the simulation. This task is exactly like the one you did last time and is about the travel time in the simulation of traffic in \_\_\_\_\_.

Recall that your earnings depend on the DIFFERENCE in travel time between these two routes. Since in the simulations we do not make a difference between which day you are travelling or what time of the day, there is only a task based on the very first drive that will be done.

You will be shown a page on the computer which looks like this. In this illustration it is Tuesday at 9 am. You may get a different one. There are, again, the six buttons numbered 1 to 6 at the top that you will roll a 6-sided die for. This determines which time interval labels that each of the sliders will have.



After you have finished making your decisions we will start the choice tasks in the driving simulator. After the first period we will record the travel time difference. For the first period you will be paid EITHER for this travel time task OR for the traffic task, but NOT FOR BOTH. Which one will be determined by a die roll at the end of the session. We will use a standard six-sided die. If 1-3 is rolled you will be paid for this travel time task and if 4-6 is rolled you will instead be paid for your route choice.

For the periods following the first, you will be paid for your route choices.

## **Earnings by Simulation Travel Times Again**

(This task will take less than 5 minutes) Before we run you through the tenth and final route choice we will give you one more task where you will be paid according to the travel time again. This is exactly like you did before the first period. Recall that your earnings depend on the DIFFERENCE in travel time between these two routes.

For this last period you will again be paid EITHER for this travel time task OR for the traffic task, but NOT FOR BOTH. Which one will be determined by another die roll at the end of the session. We will use a standard six-sided die. If 1-3 is rolled you will be paid for this travel time task and if 4-6 is rolled you will instead be paid for your route choice.

## Lottery Choice Task for Money

(This task will take less than 5 minutes) You will now be asked to make two more choices over pairs of lotteries, as you did earlier. Recall that this is what the screen will look like for a typical choice. 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. This corresponds to the higher prizes of \$100 in the left and \$1,000 in the right lottery.

ID: 2134

**Decision number 1**

**Option A**

\$50  
\$100

\$50 if the die shows 9 to 10  
\$100 if the die shows 1 to 8

**Option B**

\$10  
\$1000

\$10 if the die shows 9 to 10  
\$1000 if the die shows 1 to 8

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.

## **Payment and Scheduling**

This is the end of today's session. I hope you found it interesting and rewarding. We are going to accompany you to your car and help you place the GPS unit in a good spot.

Before we do that I will calculate your earnings across the tasks today and pay you. You will be paid over Paypal, unless you prefer a direct transfer to your bank account. We can only do a direct transfer if you have brought along a voided check.

We will instruct Paypal to send you the money right now online. Paypal then sends you an email right away with a link to their online site where you can either register as a Paypal user, or log in if you are already a Paypal user. The money will then be immediately available if you want to do online purchases, or you can request Paypal to send you a check with a few days delay, or you can transfer the money into your bank account. Paypal charges a small fee for sending you a check but transfers to your bank account are free.

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Do you have any question about your driving task for the next two weeks?

Do you know how to contact us if you have any questions?

We will now accompany you to your car. Here is a card that you can keep in your car that summarizes your driving task.

