5/15/96

Experiment Instructions:
Knowledge with Delegation

Supplies:
1. Paper and pencils for notes. 10-sided die. Big coin.
2. Registration forms. Post-experimental questionnaire. Money: dollars and dimes.
3. Number the consent forms so that we know who passes and fails important quiz questions.
4. Get signaling sheets ready: Heads. Tails.

When Subjects enter Lab:
_____ Ask them to read and sign consent forms.
_____ Pay on-time bonus.
_____ Pay extras.

Read to Subjects:

Welcome to the UCSD Political Science Experimental Lab. Today's experiment is part of a study on decision making. At the end of the experiment, we will pay you for your participation. The amount we pay you depends on your decisions, the decisions of others, and chance. While we cannot guarantee that you will earn any specific amount, we can guarantee that if you are careful, make good decisions, and complete the experiment, then you can expect to earn between $10 and $60. Today's experiment will last no longer than two hours.

This is a pen-and-paper experiment. Thus, you are to record all of your actions on questionnaires that we will later distribute. Along the way, you may have questions about the experiments. If you do, please raise your hand and one of us will assist you.

It is very important that you do not communicate with any other participant at any time during the experiment. If you do, we will ask you to leave. [Pause]

Now we are going to tell you how to make money. One way to make money is to pay attention to the instructions. After we give you a set of instructions, you will take a brief quiz on them. In return, we will pay you 25 cents for every question that you answer correctly.

The other way to make money is to be careful when you participate in the experiment. This experiment consists of 30 trials. In each trial, you can make money by predicting coin toss outcomes. We pay you $1 for every correct prediction that you make. That is, regardless of whether you predict heads or tails, we pay you $1 for correctly predicting the coin toss outcome.

Apart from this, we pay you 10 cents every time that you predict heads. That is, regardless of whether you make a correct or an incorrect prediction, we pay you 10 cents every time you predict heads. Are there any questions about how you earn money?

[Distribute Trial 1-6 questionnaire]

We are now handing out a questionnaire. Whenever we give you a new questionnaire, the first thing you should do is write your name on it. This will help us pay you.

To see how our experiment works, please look at Practice Toss 1. In Practice Toss 1, the subject predicts that the coin will land on tails. If the coin does land on tails, then we pay the subject $1. If it lands on heads, then the subject earns nothing. In Practice Toss 2, the subject predicts that the coin will land on heads. If the coin does land on heads, then we pay the subject $1.10. If it lands on heads, then we pay the subject 10 cents.

To make a prediction, put a check on the line next to the word Heads or the word Tails when we instruct you to do so. Once you make a prediction for a particular coin toss, you cannot scribble it out or change it. If you do, then you earn nothing for that coin toss, even if the check mark that is not scribbled out is correct. Are there any questions about how to make a prediction?

Throughout the experiment, we will vary the difficulty of making a correct prediction. In some trials, it will be easy to make correct predictions. In other trials, it will be more difficult. The coin tosses in the first two trials should be very easy to predict. This is true because we will toss the coin and show you the result *before* we ask you to make predictions.

We will now toss the first coin. [Toss the coin]. The outcome of Trial 1 is [heads/tails]. [show all participants the result]. Please make a prediction about the outcome of Trial 1. [Subjects make predictions.]

We will now check the results and pay you for your predictions.
[Check results and pay. **Bring dimes if heads**.]

We will now toss the second coin. [Toss the coin]. The outcome of Trial 2 is [heads/tails]. [show all participants the result]. Please predict the outcome of Trial 2. [Subjects make predictions.]

We will now check the results and pay you for your predictions.
[Check results and pay. **Bring dimes if heads.**]

We will now toss the coin four more times. As before, we pay 10 cents every time you predict heads. Apart from that, we pay you $1 for every correct prediction you make. Unlike before, however, we will record, but will not tell you, the results of the four tosses. Thus, you must make your prediction ***without knowing the outcome of*** each toss. To move the experiment along, will reveal coin toss outcomes and pay you your

remaining earnings at the end of the experiment. Remember: you earn nothing if you scribble out your prediction.

We will now toss the third coin and record the result. [Toss coins behind partition] Please predict the coin toss outcome in Trial 3.

We now toss the [fourth fifth sixth] coin and record the result. [Toss coins behind partition] Please predict Trial [4 5 6].

We will now collect your questionnaires.

[**Collect Trial 1-6 questionnaires.]**

We are now ready to move on to the next set of trials. Please pay close attention to these new instructions as they will be followed by a quiz in which we pay you 25 cents for every question that you answer correctly.

The change in the experiment is that, from now on, we will randomly select one of you to be a *reporter*. We call the other 11 subjects *predictors*. Unlike the 11 predictors, the reporter first sees the coin toss outcome and then provides information about it to the predictors. After the reporter makes this report, the predictors make predictions. Then, we move to the next trial. Now that we have described the general structure of the experiment, we can give you more specific instructions.

[Distribute Full Knowledge handout (questionnaire attached).]

Please look at the first page of your handout. Here you can see the new sequence of events. First, we toss a coin. Second, we record the coin toss outcome in our computer. Doing this makes calculating your payoffs easier and helps us pay you faster at the end of the experiment. Third, we show the coin toss outcome to the reporter. Fourth, the reporter makes a report. You can see how the reporter makes a report by looking below item number 4 in the sequence of events. The reporter checks the line next to the word "heads" or the line next to the word "tails." Fifth, the report is signaled to me using an index card and I read the report to you. So, if the reporter checks the line next to the word heads, then I say "The reporter reports heads." If the reporter checks the line next to the word tails, then I say "The reporter reports tails." We send the report in this way to protect the reporter's identity. Sixth, after I read the report, the predictors make their predictions. Then that trial ends and we move to the next one. Are there any questions about the sequence of events?

There are three factors that you should be aware of. First, the reporter can make *true* reports or *false* reports -- what reports they make are entirely up to them. Second, the predictors never hear the reporter's voice, I read all reports. Third, the predictors do not see the true coin toss result -- all they hear is the reporter's report about it.

If you turn to the next page of your handout, you can see how the predictors and the reporter earn money. Predictors earn money the same way they did earlier in the experiment. We pay them $1 for every correct prediction that they make. Apart from this, we pay them 10 cents every time they predict Heads. The reporter makes money in a different way. We pay the reporter $1 every time a predictor makes a correct prediction. The reporter earns nothing if the predictor makes an incorrect prediction. For example, if the coin lands tails, and all 11 predictors make correct predictions, then we pay the reporter $11. By contrast, if the coin lands tails, and all 11 predictors make incorrect predictions, then the reporter earns nothing. Are there any questions?

We will now give you a short quiz on the instructions. We will pay you 25 cents for every question that you answer correctly. Feel free to look at the information on your handout during the quiz. Write your name on the quiz and begin taking when you receive it.

[Distribute Quiz 1.]

[Check, correct, and collect Quiz 1.]

We will now use a coin and a six-sided die to determine who will be the reporter. [roll the die]. To protect the integrity of the experiment, we ask all of you to place your heads on your desk for just a moment. [Pause.] Will the reporter please move to the reporter's chair. [Pause.] You may lift your heads off your desk now.

We are now ready for the next trial. [toss the coin and show to the reporter]. [check report.] The report for Trial number [7 8 9 10] is [heads/tails]. Please make your predictions.

We will now collect your questionnaires.

[Collect Full Knowledge handout].

We are now ready to move on to the next set of trials. Please pay close attention to these instructions as they will be followed by a quiz in which we pay you 25 cents for every question that you answer correctly.

The next two trials differ from the previous trials in only one way. This time the reporter will ***not*** see the coin toss result. Thus, when the reporter makes his or her report, he or she will know no more about the coin toss outcome than the predictors do.

[**Distribute No Knowledge handout.**]

On the first page of your handout, you can see the new sequence of events. First, we toss a coin. Second, we record the coin toss outcome in our computer. This helps us pay you faster at the end of the experiment. This time, however, we do not show the coin toss outcome to the reporter. Third, the reporter makes a report. Fourth, the report is signaled

to me using an index card and I read the report to you. Fifth, after I read the report, the predictors make their predictions. Then that trial ends and we move to the next one. Are there any questions about the sequence of events?

On the next page of your handout you can see that the reporter and predictors are paid exactly as before. Are there any questions about how you earn money?

We will now give you a short quiz on the instructions. Feel free to look at the information on your handout during the quiz. We again pay you 25 cents for every question that you answer correctly. Please write your name on the quiz and begin taking it when you receive it.

[Distribute Quiz 2.]

[Check, correct, and collect Quiz 2.]

We are now ready for the next trial. [toss the coin and show to the reporter]. [check report.] The report for Trial number [11 12 13 14] is [heads/tails]. Please make your predictions.

We will now collect your questionnaires. **[Collect No Knowledge handout and questionnaire.]**

We are now ready to move on to the next set of trials. Please pay close attention to the new instructions as they will be followed by a quiz in which we pay you 25 cents for every question that you answer correctly.

We are now going to change the experiment in a substantial way. The first change in the experiment is that each trial will now consist of two stages. We call these stages Stage 1 and Stage 2. Each of you will participate in either Stage 1 or Stage 2. None of you will participate in both stages. Stage 1 is totally new. We will give you more details about it in a moment. Stage 2 is the same as some of the previous trials. Since it is familiar, I will begin by describing to you the sequence of events in Stage 2. Then, we will discuss Stage 1.

[Distribute Delegation-Knowledge handout (questionnaire attached).]

Please look at the first page of your new handout. Here you can see the Stage 2 sequence of events.

First, we show the coin toss outcome to the reporter. Second, the reporter makes a report. Third, the report is delivered to the predictor. Fourth, the predictor makes a prediction. Then, we move to Stage 1 of the next trial. The main difference between Stage 2 and the previous trials is that now only two of you will participate in it. That is, from now on, only one of you will be a reporter and only one of you will be a predictor. Are there any questions about the sequence of events in Stage 2.

On the second page of your handout is information about Stage 1. In each of the remaining experimental trials, ten of you will participate in Stage 1. We will call you Stage 1 players. Stage 1 players do not participate in Stage 2. That is, Stage 1 players are neither reporters nor predictors.

Stage 1 begins with the coin toss. Second, we record the coin toss outcome in our computer. Third, I direct Stage 1 players to look at their questionnaires. For each trial, a Stage 1 player's questionnaire contains two pieces of information.

The first piece of information on Stage 1 player questionnaires is the coin toss outcome. That is, all 10 Stage 1 players see and know the coin toss outcome for every remaining experimental trial. Note that we earlier today flipped the coin one time for each of the remaining experimental trials to make the experiment run efficiently.

The second piece of information on Stage 1 player questionnaires is an option. Below step 2 in the sequence of events you can see an example of such an option. In the example, the stage 1 player can choose to either earn a fixed amount of 65 cents or to earn $1 if the predictor in stage 2 makes a correct prediction. Stage I players will have this option in about 1/2 of the remaining trials. In the other half of the remaining trials, Stage I players will have a different option -- they can choose to either earn a fixed amount of 65 cents or to earn $1 if the predictor in stage 2 makes an *incorrect* prediction. Step 4 in the sequence of events summarizes the options that the stage 1 players can have. Are there any questions about the stage 1 sequence of events?

On the next page of the handout, we show you how the stage 1 players can affect the earnings of the stage 2 players, our old friends the reporter and the predictor. Note first that the stage I players **cannot** affect how much the reporter earns. As before, we pay the reporter $1 if the predictor makes a correct prediction and nothing otherwise.

Moving down the page, you can see how the stage I players affect the predictor's earnings. For every stage 1 player who chooses to earn a fixed amount, the predictor also gets that amount. So if all 10 stage 1 players choose to earn a fixed amount of 65 cents, then we pay the predictor $6.50 or 10 times 65 cents. By contrast, for every stage 1 player who bases their earnings on the predictor's prediction, we always pay the predictor $1 for a correct prediction. So if all 10 stage 1 players base their earnings on the predictor's prediction, and the predictor makes a correct prediction, then we pay the predictor $10 or 10 times $1. Apart from this, we pay the reporter $1 for choosing heads. As you can see, the predictor never earns more for an incorrect prediction than he or she does for a correct prediction.

The next page of your handout provides more detailed examples of how the predictor is paid. Please take a minute to look at this page to understand how, the actions of the stage 1 players, making correct predictions and predicting heads, regardless of whether this prediction is correct or incorrect affects how much the predictor makes. [60 second pause.] Are there any questions about how we pay the predictor?

We will now give you a short quiz on the new instructions. Feel free to look at the information on your handout during the quiz. We again pay you 25 cents for every question that you answer correctly. Please write your name on the quiz and begin taking it when you receive it.

[Distribute Quiz 3.]

[Check, correct, and collect Quiz 3.]

We now need to select the predictor. To make this selection, we again use a coin and a six-sided die. To protect the integrity of the experiment, we ask all of you to place your heads on your desk for just a moment. [Pause.] Will the predictor please move to the predictor's chair. [Pause.] You may lift your heads off your desk now.

[Distribute Toss 15-22 questionnaires.]

Stage I players, please look at the information on your questionnaires and choose an option for toss [15 16 17 18 19 20 21 22]. [10 second pause.]

We are now showing the coin toss outcome to the reporter. [10 second pause.]

We are now delivering the report to the predictor. Please make your prediction.

We will now collect your questionnaires. **[Collect Delegation-Knowledge handout.]**

[Distribute Toss 15-22 questionnaires and Delegation-No Knowledge handout.]

Please take a moment to look at the new sequence of events. [pause.] For the final set of coin tosses, we add a simple but important change to the way the experiment proceeds. In the 8 remaining experimental trials, the reporter will ***not*** see the coin toss result. That is, after the stage 1 players choose whether or not to let the predictors predict, I then ask the reporter to make a report ***without*** *seeing* the coin toss result. Everything else about the experiment remains the same. This includes player payoffs. Stage I players payoffs are based on which option they choose; the reporter earns $1 if the predictor makes a correct prediction and nothing otherwise; and the predictor earn $1 for choosing heads. Apart from that, how much the predictor earns depends on how many correct predictions he or she makes and on how many stage 1 players choose their options. Are there any questions?

We will now give you a short quiz on the instructions. Feel free to look at the information on your handout during the quiz. We again pay you 25 cents for every question that you answer correctly. Please write your name on the quiz and begin taking it when you receive it.

[Distribute Quiz 4.]

[Check, correct, and collect Quiz 4.]

We now need to select a new predictor. To make this selection, we again use a coin and a six-sided die. To protect the integrity of the experiment, we ask all of you to place your heads on your desk for just a moment. [Pause.] Will the predictor please move to the predictor's chair. [Pause.] You may lift your heads off your desk now.

[Distribute Toss 23-30 questionnaires.]

Stage I players, please look at the information on your questionnaires and choose an option for toss [23 24 25 26 27 28 29 30]. [10 second pause.]

Will the reporter, who has not seen the coin toss outcome, please make a report. [10 second pause.]

We are now delivering the report for toss number [23 24 25 26 27 28 29 30] to the predictor. Please make your prediction.

We will now collect your questionnaires. **[Collect Toss 23-30 questionnaires and Delegation-No Knowledge handout.]**

Conclusion

This concludes the experiment. We will now compute the results and your payoffs. While we are doing this, we would like you to fill out a post experimental questionnaire.

Please respond to each of the questions carefully. In a few moments, we will call each of you individually to collect your questionnaire and to pay you. At that time, you are free to go. Thanks again for your participation.

[Tabulate results and call up each participant individually to collect post experiment questionnaire and pay them. Give each participant a receipt (with their social security number) and business card.]