Delegation: Verification Instructions (6/3/96)

When Subjects enter Lab:

_____ Ask them to read and sign consent forms.
_____ Pay on-time bonus.
_____ Pay extras.

Supplies:

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

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. You can make money by predicting the outcomes of 34 coin tosses. Every time you make a correct prediction, we pay you 50 cents. Every time you make an incorrect prediction, you earn nothing. 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 Trial 1. In Practice Trial 1, the subject predicts that the coin will land on tails. If the coin does land on tails, then we pay the subject 50 cents. If it lands on heads, then the subject earns nothing.

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.]

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.]

We will now toss the coin four more times. As before, we pay you 50 cents every time you make a correct prediction. Unlike before, however, we will record, but will not tell you, the results of the four tosses. Thus, you must make your prediction ***before*** each toss. To move the experiment along, we 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 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 gets to see the coin toss outcome. After he or she sees the coin toss outcome, the reporter's job is decide whether or not to provide information about the coin toss outcome to the predictors. After the reporter makes this decision, the predictors make predictions.
Now that we have described the general structure of the experiment, we will give you more specific instructions.

[Distribute Common Interests handout (questionnaire attached).]

As your handout shows, the sequence of events in the upcoming trials is as follows. 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. Then, we show the coin toss outcome to the reporter. Next, the reporter decides whether or not to send a report to the predictors. Whether the reporter decides to send a true report, a false report, or no report at all is entirely up to him or her. [Pause.]

Below step 4 in the sequence of events are three examples of how the reporter makes his or her choice. The reporter makes a report by putting a check on the line next to the words "no report", next to the word "heads", or next to the word "tails." You can see that the reporter sends no report in Toss 1, reports heads in Toss 2 and reports tails in Toss 3.

After the reporter makes his or her decision, one of the other experimenters uses an index card to silently signal the reporter's decision to me. We send the report in this way so that the predictors do not learn anything about the reporter from the sound of his or her voice. [Pause.] If the reporter sends no report, then I announce that there is no report. Otherwise, I announce the reporter's report. After I announce the reporter's decision, 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?

Note that the predictors do not see the coin toss result -- all they hear is the reporter's report about it. Also, and unlike the predictors, I do not see the true coin toss outcome, all I see is the reporter's report.

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 each predictor 50 cents for every correct prediction that they make. The reporter makes money in a different way. If the reporter makes no report, then he or she earns nothing. If, on the other hand, the reporter makes a report, then the first thing that happens is that he or she pays us $2. Two dollars is the cost to the reporter of making a report. These dollars come from the money that the reporter earned for answering quiz questions correctly and participating in the experiment's other trials. In exchange for paying us $2, we pay the reporter 50 cents every time a predictor makes a correct prediction.

At the bottom of the page is an example of how the reporter makes money. In the example, the reporter makes a report, therefore he or she pays us $2. Then suppose that all 11 predictors make correct predictions. As a result, we pay the reporter $5.50 -- that is, 50 cents per correct prediction times 11 correct predictions. The reporter's total earnings for the trial are $3.50 -- the $5.50 we paid the reporter minus the $2 that the reporter paid us. Are there any questions about how the reporter makes money? Note that in this example, we pay the predictors 50 cents each.

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 [There is no] report for Trial number [7 8 9 10] is [heads/tails]. Please make your predictions.

We will now collect your questionnaires.

[Collect Common Interest Handouts].

We are now ready to move 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.

[Distribute Conflicting Interest handout & questionnaires.]

If you look through the handout you have just received, you can see that the next set of trials differ from the previous trials in only one way. This time if the reporter pays $2 to make a report, then the reporter makes more money when the predictors make *incorrect predictions*. That is, if the reporter pays $2 to make a report, then he or she earns 50 cents for every *incorrect* prediction that the predictors make. Also, and as before, a reporter who makes no report pays nothing and earns nothing. Predictors make money the same way they did in previous trials -- we pay them 50 cents for every correct prediction they make. Are there any questions?
[answer 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 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 [There is no] report for Trial number [11 12 13 14] is [heads/tails]. Please make your predictions.

We will now collect your questionnaires.

[Collect Conflicting Interest handout and questionnaires].

We are now ready to move 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.

The next set of trials differ from the previous trials in only one way. This time, for each trial, there is a 70% chance that I will tell the predictors the true coin toss result instead of reading them the reporter's report. The new handout describes the upcoming trials in greater detail.

[Distribute verification handout & questionnaires.]

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. Next, we show the coin toss outcome to the reporter. Then, the reporter decides whether or not to send a report to the predictors.

The next step is where the change in the experiment occurs. After the reporter makes a report, we roll a ten-sided die to determine whether I will announce the true coin toss outcome or the reporter's report, which may be true or false. [Show the ten-sided die.] If the die lands on 1 through 7, then I announce the true coin toss result. So, for example, if the coin lands on heads, then I announce heads -- regardless of what the reporter reported. If it lands tails, I announce tails -- regardless of what the reporter reported. If the die lands on 8, 9, or 10, then I announce the reporter's report if there is one, as I have in previous trials.

This means that in each trial, there is a 70% chance that what I announce is based on the coin toss result and a 30% chance that what I announce is based on the reporter's report. As the sequence of events shows, the reporter does not know what the roll of the die will

be when he or she makes her decision. After I announce either the true coin toss outcome or the reporter's report, then the predictors make predictions. After they do, then we move the next trial. Note that what you will hear me announce is either "heads," "tails," or "the reporter has made no report." Predictors will not know, and cannot learn, whether what I announce is based on the coin toss or the reporter's report.

Besides the change I have just described, everything else about the experiment is the same as before. Notably, it is still true that if the reporter pays us $2 then we pay the reporter 50 cents for every predictor who makes an incorrect prediction. In addition, we pay each predictor 50 cents for each correct prediction that they themselves make. 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. Again, we pay you 25 cents for every quiz question that you answer correctly. You may begin the quiz when you receive it.

[Distribute, then Check Quiz 3.]

To make the experiment run faster, we earlier today rolled the ten-sided die once for each of the remaining 18 experimental trials. Each roll determines whether I announce the coin toss outcome or the reporter's report in an upcoming trial.

We are now ready for the next trial. [check report.] The [There is no] report for Trial number [15 16 17 18] is [heads/tails]. Remember, there is a 70% chance that this report is the true coin toss outcome and a 30% chance that it came directly from the reporter's decision. Please make your predictions.

We will now collect your questionnaires.

[Collect Verification handout and questionnaire.]

We are now ready to move 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 first describe Stage 2. Then, we will discuss Stage 1.

[Distribute Delegation-Common Interests handout.]

Please look at the Stage 2 sequence of events. First, we show the coin toss outcome to the reporter. Next, the reporter decides whether or not to make a report. Then, and as before, if the ten-sided die rolled specifically for that trial lands on 1 through 7, then the

predictor is told the true coin toss outcome. If the die lands on 8, 9, or 10, then the predictor is told the reporter's report, which may be true or false if it is made at all. Next, the predictor makes a prediction. Then, we move to Stage I of the next trial. Note that 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 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. Then, I direct Stage 1 players to look at their questionnaires. Step 4 on the sequence of events shows what the Stage 1 players will see. You can see that for each trial, a Stage 1 player's questionnaire shows stage contains two pieces of information. The first piece of information is the coin toss outcome. In Toss 1, this outcome is Heads. In Toss 2, this outcome is Tails. Note that we earlier today flipped the coin one time for each of the remaining experimental trials to make the experiment run efficiently. We then typed these outcomes into the Stage 1 player questionnaires. As a result, all 10 Stage 1 players see and know the coin toss outcome for every remaining experimental trial. Are there any questions about this?

The second piece of information on Stage 1 player questionnaires is an option. Below step 4a 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 $1.40 or to earn $2 if the predictor in stage 2 correctly predicts the coin toss outcome. When Stage I players take this option, they make $2 when the predictor gets the coin toss right and earn nothing if the predictor makes an error. Thus, taking the option is like betting that the predictor will make a correct prediction. Are there any questions?

Below step 4b you can see the other option the is sometimes available to Stage 1 players. In this case, Stage 1 players choose to take the fixed amount of $1.40 or to earn $2 if the predictor in stage 2 gets the coin toss wrong. When Stage I players take this option, they profit from the predictor's mistakes and earn nothing when the predictor gets the coin toss right. Thus, taking *this* option is like betting that the predictor will make *an incorrect* prediction. Are there any questions about the stage 1 sequence of events?

If you turn to the next page of your handout, you can see how the stage 1 players can affect the reporter's and predictor's earnings.

As you can see at the bottom of the page, nothing the Stage I players do can affect the reporter's earnings. In each of the remaining trials, the reporter must pay us $2 to make a report, as before. In return, we now pay the reporter $5 if the predictor makes an <u>incorrect</u> prediction. Remember, there is now only one predictor. We pay the reporter nothing if the predictor gets the coin toss correct. What this means is that if the reporter makes a report and the predictor gets the coin toss wrong, then the reporter's total

earnings are $3, the $5 we pay the reporter minus the $2 the reporter paid us. If the reporter makes a report and the predictor makes a correct prediction, then the reporter's total earnings are negative $2, that is he or she pays us $2 and gets nothing in return. Finally, and as before, if the reporter makes no report, then he or she pays nothing and earns nothing. Are there any questions about how we pay the reporter?

Moving up the page, you can see the new way that the predictor makes money. The predictor makes money only if two things happen. First, the predictor must make a correct predictions. Second, at least one Stage 1 player must choose the bet. Thus, if all 10 Stage I players choose to earn the fixed amount or the predictor makes an incorrect prediction, then the predictor earns nothing. Otherwise, for every stage 1 player who bets on the predictor's prediction, we pay the predictor $1 of he or she gets the coin toss right. Note that we pay the predictor this way regardless of which bet the Stage I players took -- the bet that the predictor gets the coin toss correct or the bet that they get it incorrect.

One the next page are simple examples showing how we pay the predictor. From example 1 you can see that if all 10 stage 1 players bet on the predictor's prediction, and the predictor makes a correct prediction, then we pay the predictor $10 or 10 times $1. By contrast, if 7 stage 1 players bet on the predictor's prediction, 3 Stage 1 players take the fixed amount, and the predictor makes a correct prediction, then we pay the predictor $7. In Example 2 you can see that if the predictor makes an incorrect prediction, then he or she earns nothing, regardless of what the Stage 1 players do. In example 3, you can see that if all 10 stage 1 players choose the fixed amount, then the predictor earns nothing, regardless of whether he or she makes a correct or incorrect prediction. Are there any questions about how we pay the predictor?

We will now give you a 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 4.]

[Check, correct, and collect Quiz 4.]

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 19-28 questionnaires.]

Before we resume the experiment, I would like to take a moment to tell you precisely what is going to happen in the upcoming trials. First, I will ask the stage I players to please look at the information on their questionnaires and choose an option. Then, one of the experimenters will show the coin toss outcome to the reporter. Note that the coin toss

outcome is not printed on the reporter's questionnaire, so when we show the reporter the coin toss outcome, this will be the first time that he or she sees it. After we show the reporter the coin toss outcome, the reporter decides whether or not to make a report. The experimenter records the reporters decision. Then, the experimenter looks at the result of the ten-sided dice roll for that trial. If the die landed on 1 through 7, the experimenter will hand the predictor a piece of paper that has the true coin toss result on it. If the die lands on 8, 9, or 10, then the experimenter will hand the predictor a piece of paper that is based on the reporter's decision. Then, I will ask the predictor to make a prediction. Then, we will move to the next trial. Feel free to look at your handout during the experiment. Are there any questions?

Stage I players, please look at the information on your questionnaires and choose an option for toss [19 20 21 22 23 24 25 26 27 28]. [10 second pause.]

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

We are now delivering a report to the predictor. Note that in this trial, there is a 70% chance that this report is based on the true coin toss outcome and a 30% chance that this report is based on the reporter's decision. Please make your prediction.

We will now collect your questionnaires. **[Collect handout and questionnaires.]**

[Distribute Delegation-No Knowledge handout.]

For the final set of coin tosses, we add a simple but important change to the way the experiment proceeds. In the 6 remaining experimental trials, we always announce the reporter's decision. So. if the reporter reports heads, then I announce heads, if the reporter reports tails, then I announce tails, and if the reporter makes no report, then I announce no report. That is, we no longer use the die to determine whether I announce the true coin toss outcome or the reporter's report. Now, the predictor is always shown the reporter's report. Everything else about the experiment remains the same. Including the fact that it costs the reporter $2 to make a report and the fact that we pay the reporter nothing if the predictor makes a correct prediction and $5 if the predictor makes an incorrect prediction. Are there any questions?

We will now give you the final quiz. 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 5.]

[Check, correct, and collect Quiz 5.]

[Distribute Toss 29-34 questionnaires.]

Stage I players, please look at the information on your questionnaires and choose an option for toss [29 30 31 32 33 34]. [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 questionnaires and 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.]