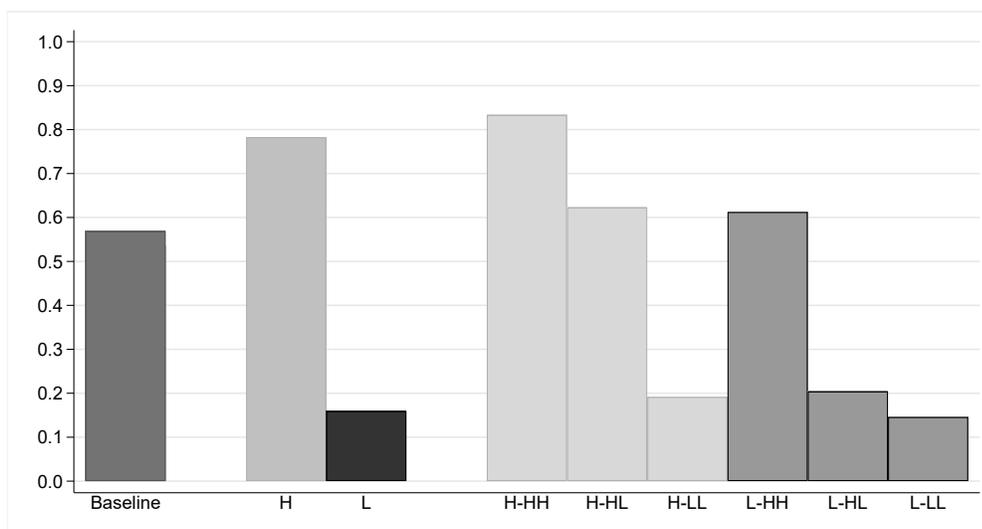


# ONLINE APPENDIX: COMMON-VALUE PUBLIC GOODS AND INFORMATIONAL SOCIAL DILEMMAS

CALEB A. COX AND BROCK STODDARD

## AI ADDITIONAL ANALYSES

### *AI.A Cheap Talk Strategy Method Treatment*

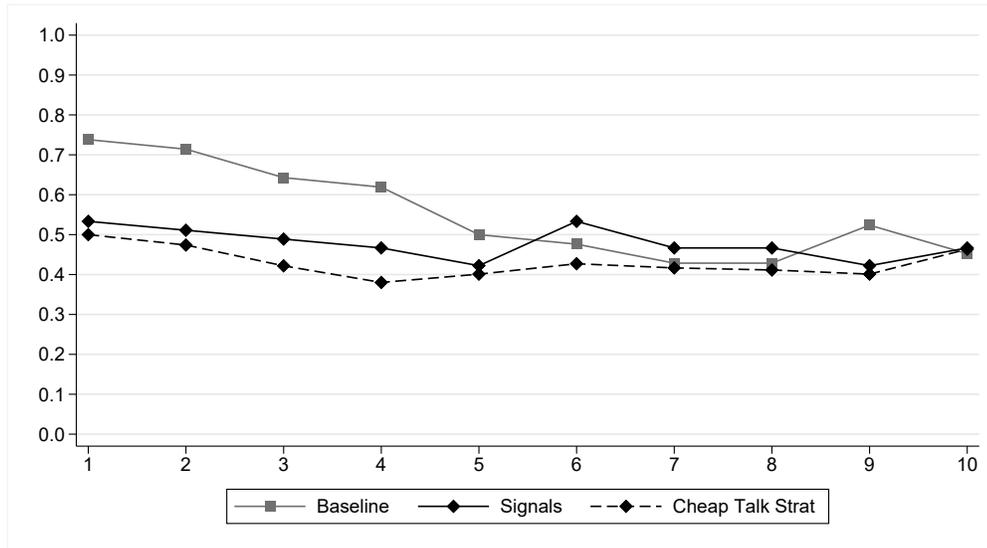


**Figure AI.** Contribution rates in Baseline, Signals (H, L) and Cheap Talk Strat (H-HH, H-HL, H-LL, L-HH, L-HL, L-LL).

In communication treatments, there are many interesting contingencies, with few observations in some cells. To increase sample size, we ran a strategy method version of Cheap Talk, labeled Cheap Talk Strat. In each round, each subject reported conditional messages for each possible signal realization (High and Low) and conditional contribution decisions for each possible combination of own signal and others' messages. Thus, each subject made 10 conditional decisions in each round (two conditional messages and eight conditional contribution decisions). Full instructions are included in this Online Appendix.

Figure AI shows contribution rates for various combinations of own signal and others' messages compared to Baseline and Signals. Since we focus on direct response treatments, we did not run a strategy method Signals treatment. The pattern in Figure AI is similar to Cheap Talk, with messages influencing contribution when they conflict with the signal.

*Date:* April 13, 2020.



**Figure AII.** Overall contribution rates across rounds in Cheap Talk Strat compared to Baseline and Signals.

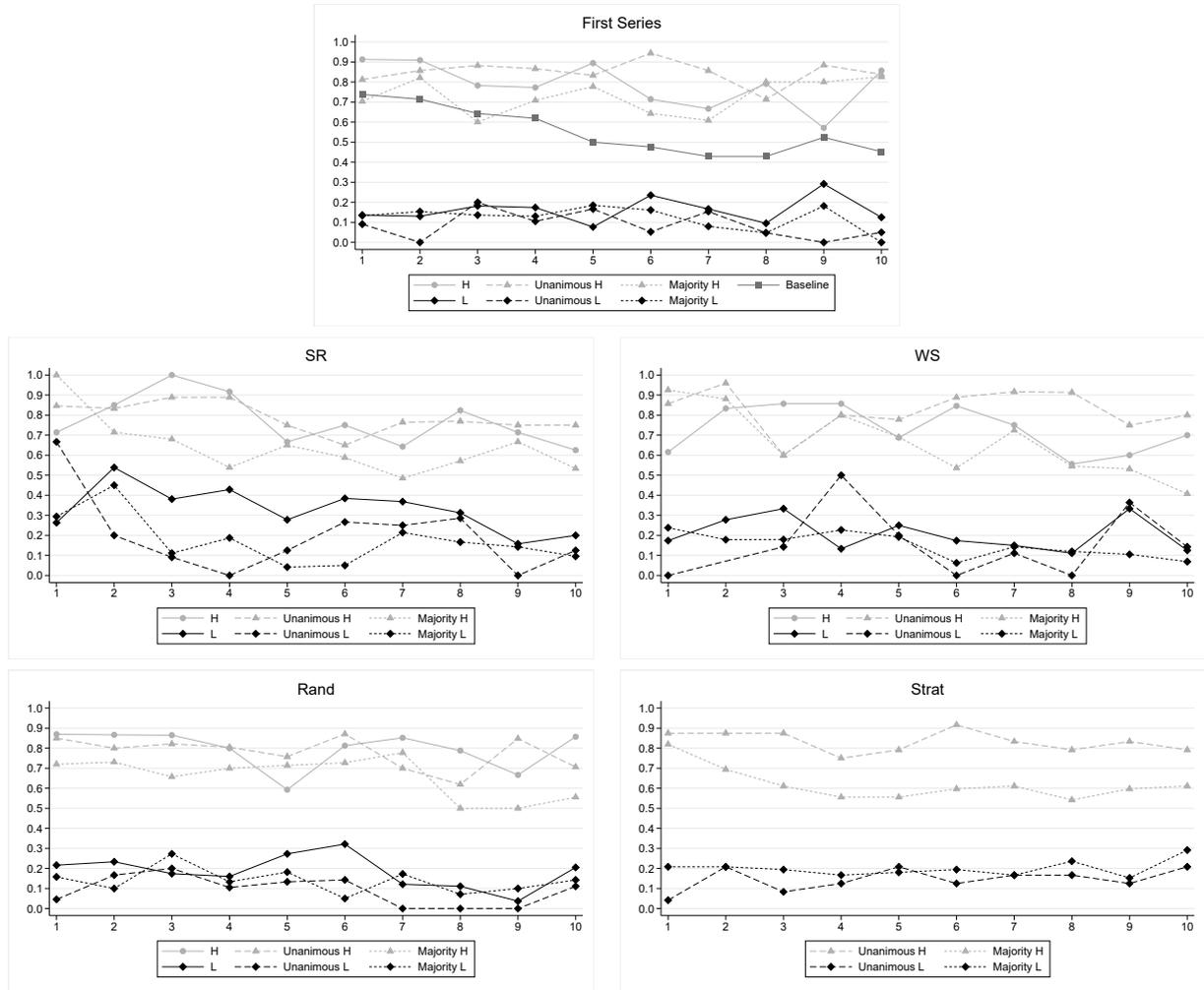
Figure AII shows the path of contribution rates across rounds in Cheap Talk Strat compared to Baseline and Signals. Again, the pattern appears similar to the original Cheap Talk treatment.

In Table AI, we use a logistic regression model to examine the effect of suspicious behavior by other group members in previous rounds. Observing other group members behaving suspiciously in any previous round is negatively correlated with contribution, and the effect is marginally significant ( $p$ -value=0.082). Moreover, when the indicator for observing suspicious behavior is included, the downward trend in contribution becomes insignificant.

**Table AI.** Logistic regressions for contribution in H-HL and L-HH cases in Cheap Talk Strat. Odds ratios are reported, with robust standard errors in parentheses, clustered by group.

Independent Variable	Cheap Talk Strat	
	Model A1	Model A2
Round	0.93 (0.02)	1.03 (0.06)
H-HL	1.05 (0.22)	1.05 (0.23)
Suspicion	–	0.34 (0.21)
Constant	2.33 (0.84)	2.47 (1.05)
N	720	720
Clusters	8	8

*AI.B Conditional Rates of Contribution Across Rounds*

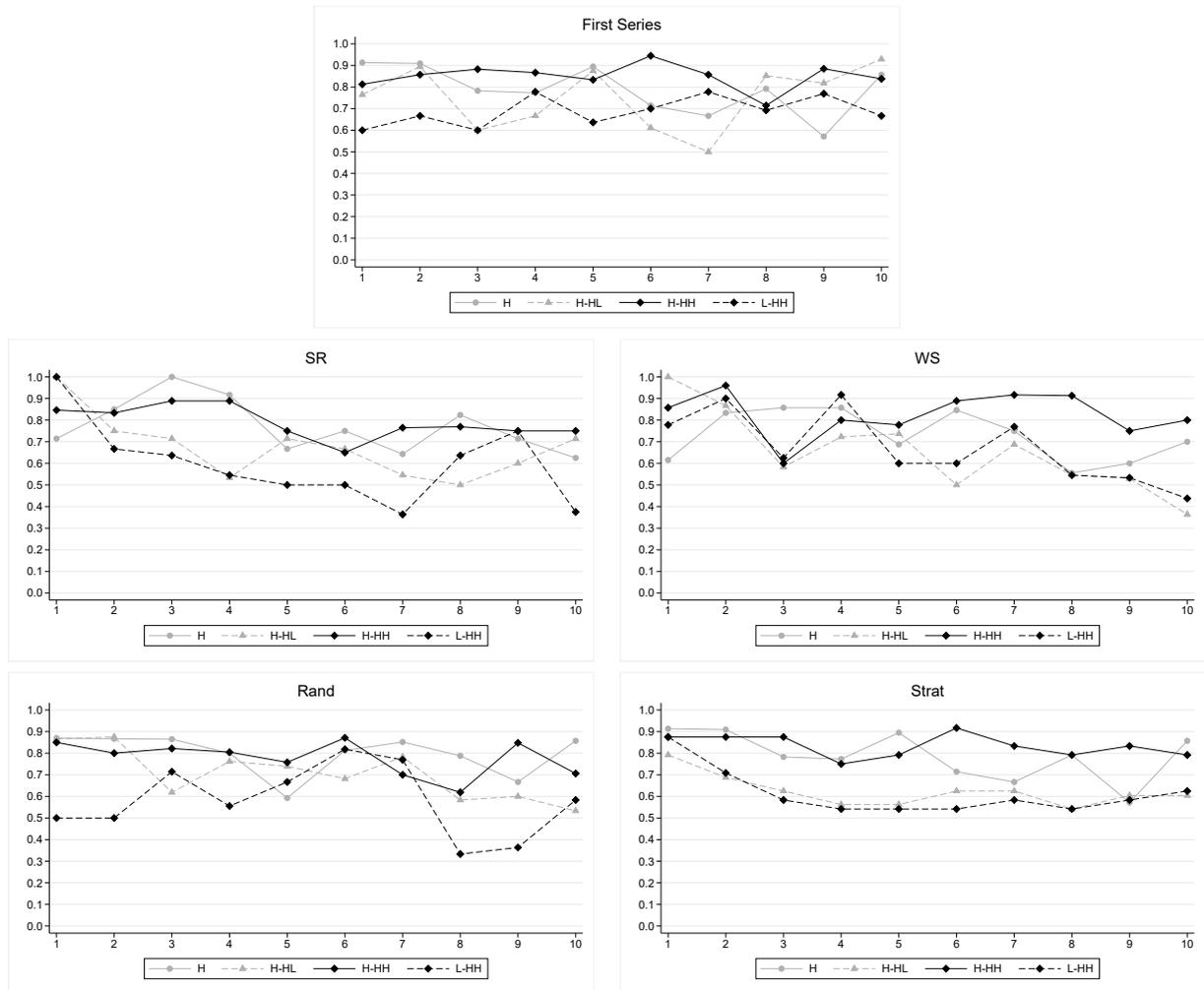


**Figure AIII.** Conditional rates of contribution across rounds in First Series, SR, WS, Rand, and Strat treatments.

Figure AIII shows contribution rates across the ten rounds of play. As signals are randomly drawn each round, the subject composition of each data series changes across rounds. Unanimous H and Unanimous L include cases in which subjects' signal and received messages are all High (H-HH) or all Low (L-LL). Majority H and Majority L include cases in which exactly two of these three bits of information are High (H-HL, L-HH) or Low (L-HL, H-LL), respectively.

Figure AIV shows the contribution rate paths of Majority H subcategories L-HH and H-HL separately. These paths are similar, and are combined in Figure AIII for readability. Figure AIV focuses on contribution rates across rounds conditional on cases of majority H or unanimous H information. Cases with majority L information are of lesser interest. Moreover, there are few observations for subcategories L-HL and H-LL in some rounds due to the tendency for subjects

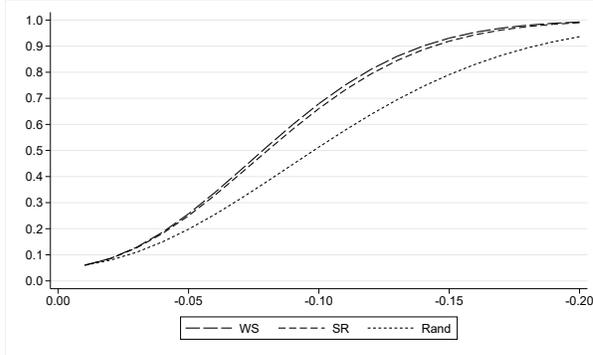
## COX AND STODDARD



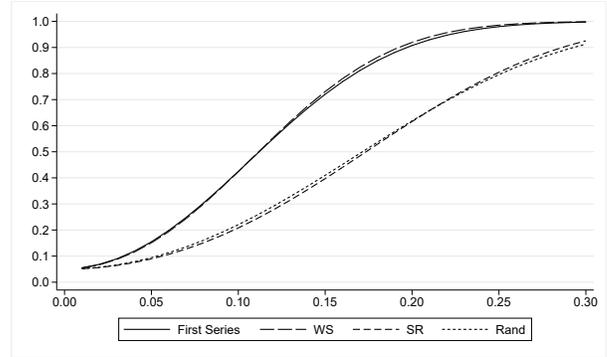
**Figure AIV.** Contribution rates in H, L-HH, H-HL, and H-HH cases across rounds.

to send High messages more often than Low messages. Thus, we do not focus on such cases. However, overall the contribution rates in these cases are largely similar and low across rounds.

*A.I.C Power Analysis for Main Treatment Comparisons*



**Figure AV.** Power by effect size of cluster-adjusted  $\chi^2$  tests comparing truthfulness with a low signal in Cheap Talk WS, Cheap Talk SR, and Cheap Talk Rand versus Cheap Talk.



**Figure AVI.** Power by effect size of cluster-adjusted  $\chi^2$  tests comparing contribution rates with a Low signal and two observed High messages (L-HH) in Cheap Talk, Cheap Talk WS, Cheap Talk SR, and Cheap Talk Rand versus the rates with a Low signal (L) in the corresponding Signals, Signals WS, Signals SR, or Signals Rand treatment.

To determine what treatment effect sizes could likely be detected in this experiment, we calculate the power of cluster-adjusted  $\chi^2$  tests for the main treatment comparisons. In each case, to be conservative we used the higher intra-cluster correlation coefficient and coefficient of variation for cluster sizes of the two treatments being compared. In Figure AV we show the power of our tests comparing truthfulness rates in Cheap Talk versus Cheap Talk WS, Cheap Talk SR, and Cheap Talk Rand for various possible effect sizes.<sup>1</sup> For Cheap Talk WS and Cheap Talk SR, power reaches 80% for effect sizes of approximately 12-percentage point or greater reductions in truthfulness with a low signal. For Cheap Talk Rand, power reaches 80% for effect sizes of approximately 15 percentage points or greater. Thus, if Cheap Talk Rand reduced truthfulness by a similar magnitude as Cheap Talk SR, the effect would likely have been detected.

In Figure AVI, we show the power of our key tests for whether messages influence contribution decisions. Specifically, we focus on our tests comparing contribution rates with a low signal and two observed high messages (L-HH) in treatments with communication compared to contribution rates with a low signal (L) in the corresponding treatment with signals but no

<sup>1</sup>As reported in the main paper, relative to Cheap Talk, the actual effect sizes found in the experiment were reductions of the frequency of truthful messages of approximately 11 percentage points in Cheap Talk WS, 17 in Cheap Talk SR, and 5 in Cheap Talk Rand. However, the power analysis is based on various possible effect sizes that might have been detected, rather than the effect sizes found in the experiment.

communication.<sup>2</sup> For the comparisons of Cheap Talk versus Signals and Cheap Talk WS versus Signals WS, power reaches 80% for effect sizes of approximately 17 percentage point or greater increases in contribution in L-HH compared to L. For the comparisons of Cheap Talk SR versus Signals SR and Cheap Talk Rand versus Signals Rand, power reaches 80% for effect sizes of approximately 25 percentage points or greater.

### *AI.D The Gambler's Fallacy in Contribution Decisions*

**Table AII.** Logistic regressions for contribution in rounds 2-10. Odds ratios are reported, with robust standard errors in parentheses, clustered by group (or session for Rand treatments).

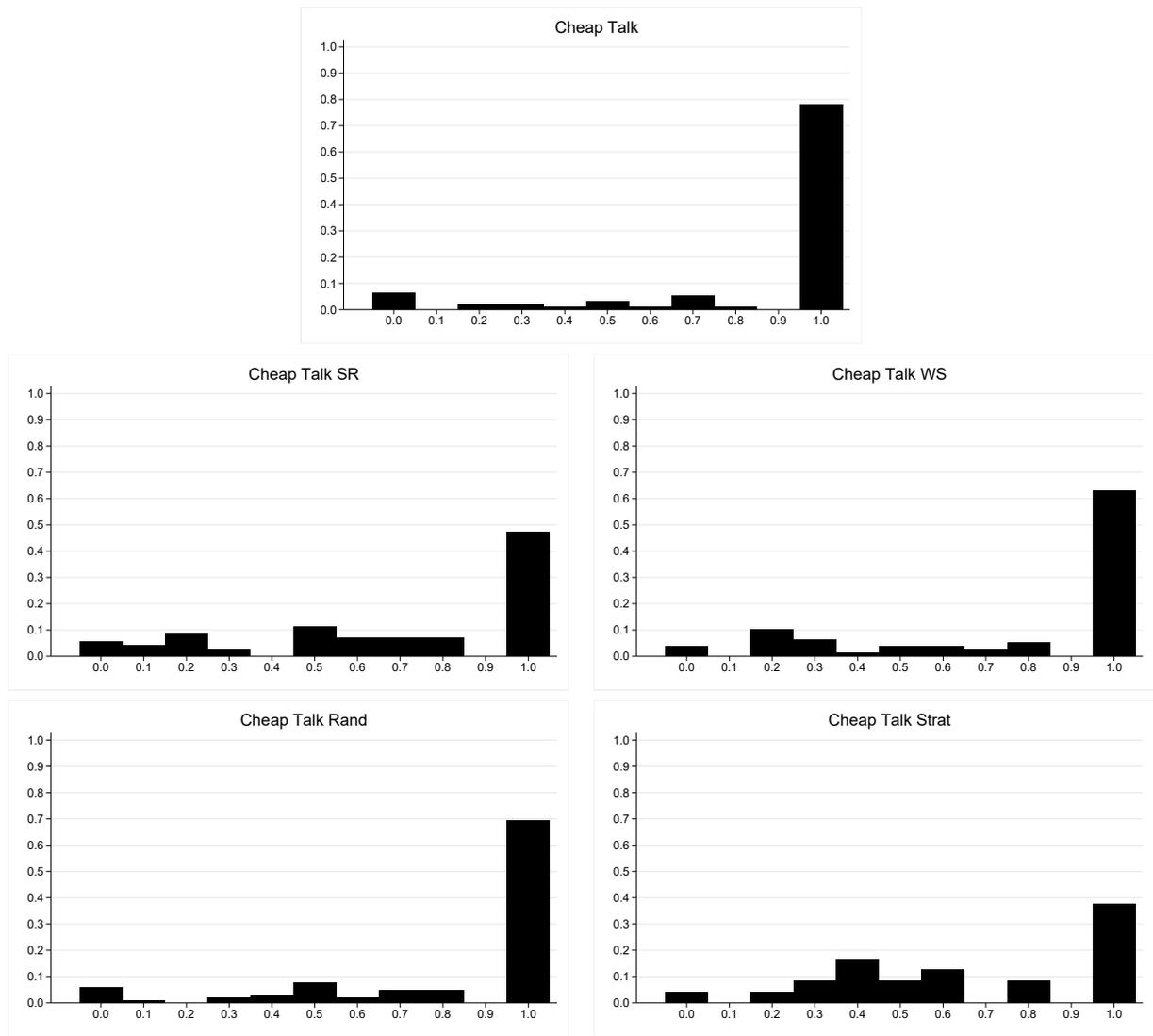
Independent Variable	Baseline Model A3	Signals Model A4	Signals SR Model A5	Signals WS Model A6	Signals Rand Model A7	Cheap Talk Model A8	Cheap Talk SR Model A9	Cheap Talk WS Model A10	Cheap Talk Rand Model A11	Cheap Talk Strat Model A12
Round	0.88 (0.04)	0.97 (0.04)	0.85 (0.04)	0.89 (0.05)	0.94 (0.04)	0.98 (0.04)	0.92 (0.03)	0.87 (0.04)	0.92 (0.02)	0.99 (0.02)
High State Lag	0.59 (0.15)	0.68 (0.17)	1.19 (0.23)	0.92 (0.25)	0.50 (0.17)	0.56 (0.12)	0.91 (0.16)	0.62 (0.10)	0.72 (0.15)	1.22 (0.28)
H	-	17.76 (7.39)	7.22 (2.84)	11.32 (5.62)	17.50 (6.62)	-	-	-	-	-
L-HL	-	-	-	-	-	1.80 (0.69)	0.98 (0.34)	0.64 (0.25)	1.51 (0.62)	1.33 (0.21)
L-HH	-	-	-	-	-	27.45 (13.19)	6.63 (2.69)	8.14 (3.08)	13.76 (5.44)	7.52 (4.08)
H-LL	-	-	-	-	-	1.43 (1.02)	0.75 (0.52)	0.69 (0.38)	1.22 (0.70)	1.33 (0.26)
H-HL	-	-	-	-	-	37.18 (19.75)	8.45 (3.54)	6.73 (2.89)	20.71 (7.50)	8.20 (3.55)
H-HH	-	-	-	-	-	73.55 (36.07)	18.94 (8.91)	25.45 (14.08)	33.77 (15.50)	26.06 (12.65)
Constant	3.20 (1.21)	0.29 (0.08)	1.23 (0.54)	0.56 (0.20)	0.48 (0.26)	0.13 (0.08)	0.33 (0.14)	0.73 (0.29)	0.22 (0.08)	0.18 (0.06)
N	378	405	297	324	540	864	648	702	945	1728
Clusters	14	15	11	12	5	32	24	26	9	8

As detailed in the paper and the experimental instructions, the randomly-drawn state is independent across rounds, and subjects are made aware of this fact. However, subjects may nonetheless behave as if they expect some autocorrelation in the realized states. We examine this issue in the logistic regressions reported in Table AII, which include an indicator for realizing a High state in the previous period. In the Baseline treatment, Signals Rand, Cheap Talk, and Cheap Talk WS, we find a significant negative correlation between this lagged state and contribution in the current round, consistent with a version of the gambler's fallacy. However, we do not find such a correlation in the other treatments.

Thus, the results are mixed on a gambler's fallacy in this setting. Previous evidence from public goods games with uncertain returns is also mixed. Stoddard (2015) finds contribution choices consistent with a gambler's fallacy. Gangadharan and Nemes (2009) find a negative but insignificant correlation between current contribution and a High state in the previous round.

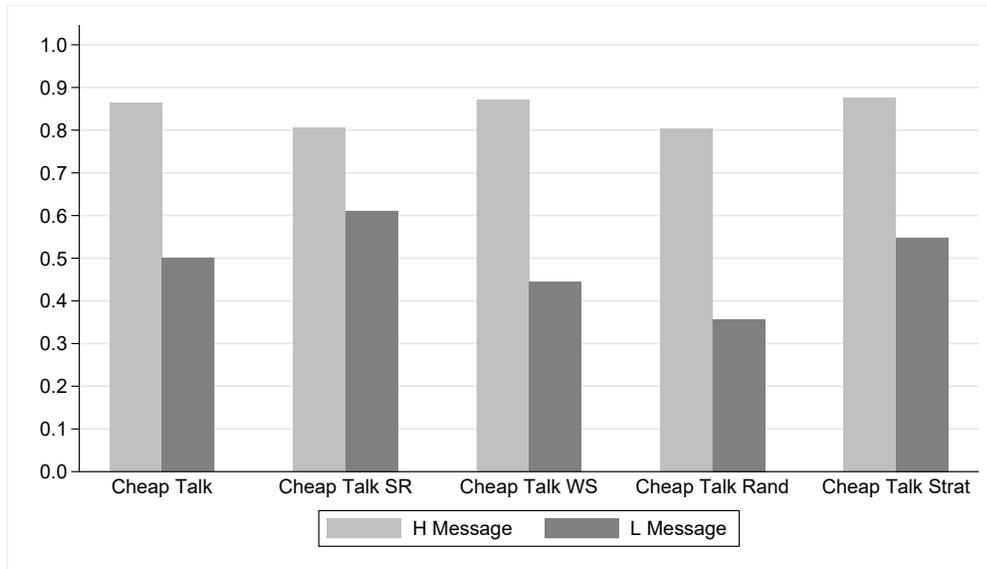
<sup>2</sup>As reported in the main paper, relative to L cases without communication, the actual effect sizes found in the experiment for L-HH cases with communication were increases in the frequency of contribution of approximately 55 percentage points in Cheap Talk, 45 in Cheap Talk WS, 30 in Cheap Talk SR, and 40 in Cheap Talk Rand.

*A.I.E Truthfulness with a Low Signal by Subject*



**Figure AVII.** Histograms for subject-level truthfulness rates conditional on a Low signal.

Figure AVII shows histograms for subject-level truthfulness rates conditional on a Low signal. In Cheap Talk, Cheap Talk Rand, and Cheap Talk WS, majorities of subjects never misreport a Low signal. In Cheap Talk SR and Cheap Talk Strat, majorities sometimes misreport Low signals. In all treatments, very few subjects always misreport Low signals.

*A.I.F. Downward Misreporting and Moral Wiggle Room*

**Figure AVIII.** *Contribution rates in Unanimous H cases by message sent.*

In the original Cheap Talk treatment, misreporting a High signal is very rare. We initially interpreted this form of misreporting as noise, perhaps due to confusion or boredom. However, such downward misreporting is significantly more frequent in Cheap Talk SR and Cheap Talk Strat. This result raises the question of why a subject might send a Low message conditional on a High signal. One possibility is a form of moral wiggle room: if a subject intends to free ride regardless of others' messages, sending a Low message might make such a decision appear justified, giving the subject an "excuse" for free riding. This motive might be particularly salient in Cheap Talk SR, where the MPCR is always less than one, even in the High state. However, even in the other Cheap Talk treatments, the expected MPCR is always less than one unless others' messages are believed to be (almost) perfectly truthful and all three bits of available information are High. Moreover, a risk averse subject may prefer to free ride even in this case.

To examine whether our data are consistent with this conjecture, we examine contribution rates in Unanimous H cases in which a subject sent a Low message. In other words, we are interested in cases where a subject observed a High signal, sent a Low message, and received two High messages from the other group members. Because of the low frequency of downward misreporting, there are few observations of such cases in Cheap Talk, Cheap Talk SR, Cheap Talk WS, and Cheap Talk Rand (8, 18, 9, and 14 observations, respectively), but somewhat more in Cheap Talk Strat (31 observations). However, we find a consistent pattern. Figure AVIII shows these contribution rates in comparison to Unanimous H cases in which a High message was sent. In every treatment, contribution rates are lower when the subject sent a Low message rather than a High message. The difference is statistically significant in Cheap

Talk ( $p$ -value=0.009), Cheap Talk WS ( $p$ -value<0.001), Cheap Talk Rand ( $p$ -value=0.006), and Cheap Talk Strat ( $p$ -value=0.005), but not in Cheap Talk SR ( $p$ -value=0.115). These results are consistent with the moral wiggle room explanation of downward misreporting. We did not anticipate this type of moral wiggle room, so we interpret this evidence as suggestive only.

#### REFERENCES

- Gangadharan, L., Nemes, V., 2009. Experimental analysis of risk and uncertainty in provisioning private and public goods. *Economic Inquiry* 47, 146–164.
- Stoddard, B., 2015. Probabilistic production of a public good. *Economics Bulletin* 35, 37–52.

## AII EXPERIMENTAL INSTRUCTIONS: FIRST SERIES TREATMENTS

*Welcome**No Talking and Cell-Phone Usage Allowed*

Now that the experiment has begun, we ask that you do not talk. Also, please turn off your cell phone. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

*Random Matching and Anonymity*

Each person will be randomly and anonymously matched with 2 other people to form a group. Thus, each group will contain 3 individuals. YOU WILL REMAIN IN THIS GROUP FOR THE REST OF THIS EXPERIMENT. You and the other members in your group will be identified by ID numbers 1, 2, and 3. The ID numbers for each of the other group members will remain the same for the entire experiment. For example, the same group member will be identified as group member 2 for the entire experiment.

*Cash Payment*

Your earnings in this experiment are expressed in TOKENS. At the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token earned in the experiment.

*Multiple Rounds*

This experiment consists of 10 decision rounds. In each round, you will face the same decision task. The decision task in each round is described below.

*Starting Balances*

Each individual begins EACH ROUND with an endowment of 1 token. Each 3-person group begins EACH ROUND with a Group Fund containing 0 tokens.

*Decision Tasks in Each Round*

You will decide independently and privately whether to allocate your token to your own Individual Fund or to the Group Fund. The other players in your group will make similar decisions. Each token added to the Group Fund by a group member increases the value of the Group Fund by one of two Group Fund Returns, listed below. The computer will randomly

choose the Group Fund Return. Each return has an equal probability of being chosen in each round, regardless of the result from previous rounds.

- Low Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 0 tokens.
- High Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 3.3 tokens.

You will not know whether the Group Fund Return is High or Low until after you make your decision for the round.

(SIGNALS & CHEAP TALK TREATMENTS ONLY) However, before making your decision, you will see a SIGNAL related to the Group Fund Return. This signal is informative about the Group Fund Return, but may be inaccurate. Specifically, if the Group Fund Return is in fact High, you will see the signal “High” with 80% probability, and you will see the signal “Low” with 20% probability. Similarly, if the Group Fund Return is in fact Low, you will see the signal “Low” with 80% probability, and you will see the signal “High” with 20% probability. Thus, in short, on average the signal will correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

(SIGNALS & CHEAP TALK TREATMENTS ONLY) The other members of your group will also see signals, which will on average correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

(SIGNALS & CHEAP TALK TREATMENTS ONLY) Note that the Group Fund Return in a particular round is the same for you as it is for the other 2 members of your group. However, the other members of your group may not see the same signal that you see.

(SIGNALS & CHEAP TALK TREATMENTS ONLY) For example, suppose Tom and Mary are in the same group. Further suppose that the computer randomly chooses the High Group Fund Return. With 80% probability, Tom will see a signal that says “High,” and with 20% probability, he will see a signal that says “Low.” The same is true for Mary. So with probability 16% (= 80% \* 20%) Tom will see a signal that says “High” and Mary will see a signal that says “Low.” Similarly, there is a 16% chance that Tom will see a signal that says “Low” and Mary will see a signal that says “High.” Thus, overall, there is a 32% chance that Tom and Mary will see different signals.

(CHEAP TALK TREATMENT ONLY) In each round, after you and the other group members receive your signals related to the Group Fund Return, but before you and the other group members decide whether to allocate your tokens to the Group Fund, you will each be able to send a message to the other group members. The message you will send will be one of two options, “High” or “Low.” You may choose either message option. After all group members send their messages, you will see the other group members’ messages and then make your allocation decision. You will not see the other group members’ signals.

### *Earnings*

Earnings in EACH round: After all persons in the group make their decisions, the Group Fund will be divided equally among all individuals in the group. That is, all individuals in the group will receive one-third (33.33%) of the Group Fund. In other words, for each token added to the Group Fund each group member will receive 0 tokens if the Low Group Fund Return is randomly chosen or 1.1 tokens if the High Group Fund Return is randomly chosen.

*Your earnings in a round will equal the ending value of tokens in your own Individual Fund plus one-third of the ending value of tokens in the Group Fund.*

After all individuals make their decisions for the round, the computer will tabulate the results. At the end of each round, you will receive information on the allocation decisions of each of the other group members identified by their ID numbers, the total number of tokens allocated to the Group Fund, (SIGNALS & CHEAP TALK TREATMENTS ONLY) your signal related to the Group Fund Return, (CHEAP TALK TREATMENT ONLY) your message and the messages of the other group members related to the Group Fund Return, the Group Fund Return randomly chosen for that round, your earnings related to the Group Fund, and your total earnings for that round.

**The following examples** illustrate how your earnings from the Group Fund in a round are related to value of the Group Fund.

- Suppose all 3 members of your group (including yourself) allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive 0 tokens.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 9.9 tokens. In this case, each person would receive 33.33% of the Group Fund, worth 3.3 tokens each.
- Suppose all 3 members of your group (including yourself) allocate their tokens to their own Individual Funds.
  - Regardless of the Group Fund Return randomly chosen by the computer, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive the value of their own Individual Funds, worth 1 token each.
- Suppose you allocate your token to the Group Fund, but the other 2 members of your group allocate their tokens to their own Individual Funds.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive 0

- tokens, and the other 2 members of your group would receive the value of their Individual Funds, worth 1 token each.
- If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 3.3 tokens. In this case, you would receive 33.33% of the value of the Group Fund, worth 1.1 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, plus the value of their Individual Funds, worth a total of 2.1 tokens each.
  - Suppose you allocate your token to your own Individual Fund, but the other 2 members of your group allocate their tokens to the Group Fund.
    - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive the value of your Individual Fund, worth 1 token, and the other 2 members of your group would receive 0 tokens each.
    - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 6.6 tokens. In this case, you would receive 33.33% of the value of the Group Fund, plus the value of your own Individual Fund, worth a total of 3.2 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, worth a total of 2.2 tokens each.

TOTAL Earnings: Total Earnings for the experiment will be the sum of the earnings in all rounds of the experiment. Recall, at the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token of earnings from the experiment.

## AIII EXPERIMENTAL INSTRUCTIONS: SR TREATMENTS

*Welcome**No Talking and Cell-Phone Usage Allowed*

Now that the experiment has begun, we ask that you do not talk. Also, please turn off your cell phone. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

*Random Matching and Anonymity*

Each person will be randomly and anonymously matched with 2 other people to form a group. Thus, each group will contain 3 individuals. YOU WILL REMAIN IN THIS GROUP FOR THE REST OF THIS EXPERIMENT. You and the other members in your group will be identified by ID numbers 1, 2, and 3. The ID numbers for each of the other group members will remain the same for the entire experiment. For example, the same group member will be identified as group member 2 for the entire experiment.

*Cash Payment*

Your earnings in this experiment are expressed in TOKENS. At the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token earned in the experiment.

*Multiple Rounds*

This experiment consists of 10 decision rounds. In each round, you will face the same decision task. The decision task in each round is described below.

*Starting Balances*

Each individual begins EACH ROUND with an endowment of 1 token. Each 3-person group begins EACH ROUND with a Group Fund containing 0 tokens.

*Decision Task in Each Round*

You will decide independently and privately whether to allocate your token to your own Individual Fund or to the Group Fund. The other players in your group will make similar decisions. Each token added to the Group Fund by a group member increases the value of the Group Fund by one of two Group Fund Returns, listed below. The computer will randomly

choose the Group Fund Return. Each return has an equal probability of being chosen in each round, regardless of the result from previous rounds.

- Low Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 0.9 tokens.
- High Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 2.4 tokens.

You will not know whether the Group Fund Return is High or Low until after you make your decision for the round. However, before making your decision, you will see a SIGNAL related to the Group Fund Return. This signal is informative about the Group Fund Return, but may be inaccurate. Specifically, if the Group Fund Return is in fact High, you will see the signal “High” with 80% probability, and you will see the signal “Low” with 20% probability. Similarly, if the Group Fund Return is in fact Low, you will see the signal “Low” with 80% probability, and you will see the signal “High” with 20% probability. Thus, in short, on average the signal will correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

The other members of your group will also see signals, which will on average correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

Note that the Group Fund Return in a particular round is the same for you as it is for the other 2 members of your group. However, the other members of your group may not see the same signal that you see.

For example, suppose Tom and Mary are in the same group. Further suppose that the computer randomly chooses the High Group Fund Return. With 80% probability, Tom will see a signal that says “High,” and with 20% probability, he will see a signal that says “Low.” The same is true for Mary. So with probability 16% ( $= 80\% * 20\%$ ) Tom will see a signal that says “High” and Mary will see a signal that says “Low.” Similarly, there is a 16% chance that Tom will see a signal that says “Low” and Mary will see a signal that says “High.” Thus, overall, there is a 32% chance that Tom and Mary will see different signals.

(CHEAP TALK SR TREATMENT ONLY) In each round, after you and the other group members receive your signals related to the Group Fund Return, but before you and the other group members decide whether to allocate your tokens to the Group Fund, you will each be able to send a message to the other group members. The message you will send will be one of two options, “High” or “Low.” You may choose either message option. After all group members send their messages, you will see the other group members’ messages and then make your allocation decision. You will not see the other group members’ signals.

### *Earnings*

Earnings in EACH round: After all persons in the group make their decisions, the Group Fund will be divided equally among all individuals in the group. That is, all individuals in the group will receive one-third (33.33%) of the Group Fund. In other words, for each token added to the Group Fund each group member will receive 0.3 tokens if the Low Group Fund Return is randomly chosen or 0.8 tokens if the High Group Fund Return is randomly chosen.

*Your earnings in a round will equal the ending value of tokens in your own Individual Fund plus one-third of the ending value of tokens in the Group Fund.*

After all individuals make their decisions for the round, the computer will tabulate the results. At the end of each round, you will receive information on the allocation decisions of each of the other group members identified by their ID numbers, the total number of tokens allocated to the Group Fund, your signal related to the Group Fund Return, (CHEAP TALK SR TREATMENT ONLY) your message and the messages of the other group members related to the Group Fund Return, the Group Fund Return randomly chosen for that round, your earnings related to the Group Fund, and your total earnings for that round.

**The following examples** illustrate how your earnings from the Group Fund in a round are related to the value of the Group Fund.

- Suppose all 3 members of your group (including yourself) allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 2.7 tokens. In this case, each person would receive 0.9 tokens.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 7.2 tokens. In this case, each person would receive 33.33% of the Group Fund, worth 2.4 tokens each.
- Suppose all 3 members of your group (including yourself) allocate their tokens to their own Individual Funds.
  - Regardless of the Group Fund Return randomly chosen by the computer, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive the value of their own Individual Funds, worth 1 token each.
- Suppose you allocate your token to the Group Fund, but the other 2 members of your group allocate their tokens to their own Individual Funds.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0.9 tokens. In this case, you would receive 33.33% of the value of the Group Fund, worth 0.3 tokens. The other 2 members

- of your group would also receive 33.33% of the value of the Group Fund, plus the value of their Individual Funds, worth a total of 1.3 tokens each.
- If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 2.4 tokens. In this case, you would receive 33.33% of the value of the Group Fund, worth 0.8 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, plus the value of their Individual Funds, worth a total of 1.8 tokens each.
  - Suppose you allocate your token to your own Individual Fund, but the other 2 members of your group allocate their tokens to the Group Fund.
    - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 1.8 tokens. In this case, you would receive 33.33% of the value of the Group Fund, plus the value of your own Individual Fund, worth a total of 1.6 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, worth a total of 0.6 tokens each.
    - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 4.8 tokens. In this case, you would receive 33.33% of the value of the Group Fund, plus the value of your own Individual Fund, worth a total of 2.6 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, worth a total of 1.6 tokens each.

### *Total Earnings*

Total Earnings for the experiment will be the sum of the earnings in all rounds of the experiment. Recall, at the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token of earnings from the experiment.

## AIV EXPERIMENTAL INSTRUCTIONS: WS TREATMENTS

*Welcome**No Talking and Cell-Phone Usage Allowed*

Now that the experiment has begun, we ask that you do not talk. Also, please turn off your cell phone. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

*Random Matching and Anonymity*

Each person will be randomly and anonymously matched with 2 other people to form a group. Thus, each group will contain 3 individuals. YOU WILL REMAIN IN THIS GROUP FOR THE REST OF THIS EXPERIMENT. You and the other members in your group will be identified by ID numbers 1, 2, and 3. The ID numbers for each of the other group members will remain the same for the entire experiment. For example, the same group member will be identified as group member 2 for the entire experiment.

*Cash Payment*

Your earnings in this experiment are expressed in TOKENS. At the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token earned in the experiment.

*Multiple Rounds*

This experiment consists of 10 decision rounds. In each round, you will face the same decision task. The decision task in each round is described below.

*Starting Balances*

Each individual begins EACH ROUND with an endowment of 1 token. Each 3-person group begins EACH ROUND with a Group Fund containing 0 tokens.

*Decision Tasks in Each Round*

You will decide independently and privately whether to allocate your token to your own Individual Fund or to the Group Fund. The other players in your group will make similar decisions. Each token added to the Group Fund by a group member increases the value of the Group Fund by one of two Group Fund Returns, listed below. The computer will randomly

choose the Group Fund Return. Each return has an equal probability of being chosen in each round, regardless of the result from previous rounds.

- Low Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 0 tokens.
- High Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 3.3 tokens.

You will not know whether the Group Fund Return is High or Low until after you make your decision for the round. However, before making your decision, you will see a SIGNAL related to the Group Fund Return. This signal is informative about the Group Fund Return, but may be inaccurate. Specifically, if the Group Fund Return is in fact High, you will see the signal “High” with 70% probability, and you will see the signal “Low” with 30% probability. Similarly, if the Group Fund Return is in fact Low, you will see the signal “Low” with 70% probability, and you will see the signal “High” with 30% probability. Thus, in short, on average the signal will correspond to the actual Group Fund Return 70% of the time, but will be inaccurate 30% of the time.

The other members of your group will also see signals, which will on average correspond to the actual Group Fund Return 70% of the time, but will be inaccurate 30% of the time.

Note that the Group Fund Return in a particular round is the same for you as it is for the other 2 members of your group. However, the other members of your group may not see the same signal that you see.

For example, suppose Tom and Mary are in the same group. Further suppose that the computer randomly chooses the High Group Fund Return. With 70% probability, Tom will see a signal that says “High,” and with 30% probability, he will see a signal that says “Low.” The same is true for Mary. So with probability 21% ( $= 70\% * 30\%$ ) Tom will see a signal that says “High” and Mary will see a signal that says “Low.” Similarly, there is a 21% chance that Tom will see a signal that says “Low” and Mary will see a signal that says “High.” Thus, overall, there is a 42% chance that Tom and Mary will see different signals.

(CHEAP TALK WS TREATMENT ONLY) In each round, after you and the other group members receive your signals related to the Group Fund Return, but before you and the other group members decide whether to allocate your tokens to the Group Fund, you will each be able to send a message to the other group members. The message you will send will be one of two options, “High” or “Low.” You may choose either message option. After all group members send their messages, you will see the other group members’ messages and then make your allocation decision. You will not see the other group members’ signals.

### *Earnings*

Earnings in EACH round: After all persons in the group make their decisions, the Group Fund will be divided equally among all individuals in the group. That is, all individuals in the group will receive one-third (33.33%) of the Group Fund. In other words, for each token added to the Group Fund each group member will receive 0 tokens if the Low Group Fund Return is randomly chosen or 1.1 tokens if the High Group Fund Return is randomly chosen.

*Your earnings in a round will equal the ending value of tokens in your own Individual Fund plus one-third of the ending value of tokens in the Group Fund.*

After all individuals make their decisions for the round, the computer will tabulate the results. At the end of each round, you will receive information on the allocation decisions of each of the other group members identified by their ID numbers, the total number of tokens allocated to the Group Fund, your signal related to the Group Fund Return, (CHEAP TALK WS TREATMENT ONLY) your message and the messages of the other group members related to the Group Fund Return, the Group Fund Return randomly chosen for that round, your earnings related to the Group Fund, and your total earnings for that round.

**The following examples** illustrate how your earnings from the Group Fund in a round are related to value of the Group Fund.

- Suppose all 3 members of your group (including yourself) allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive 0 tokens.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 9.9 tokens. In this case, each person would receive 33.33% of the Group Fund, worth 3.3 tokens each.
- Suppose all 3 members of your group (including yourself) allocate their tokens to their own Individual Funds.
  - Regardless of the Group Fund Return randomly chosen by the computer, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive the value of their own Individual Funds, worth 1 token each.
- Suppose you allocate your token to the Group Fund, but the other 2 members of your group allocate their tokens to their own Individual Funds.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive 0 tokens, and the other 2 members of your group would receive the value of their Individual Funds, worth 1 token each.

- If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 3.3 tokens. In this case, you would receive 33.33% of the value of the Group Fund, worth 1.1 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, plus the value of their Individual Funds, worth a total of 2.1 tokens each.
- Suppose you allocate your token to your own Individual Fund, but the other 2 members of your group allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive the value of your Individual Fund, worth 1 token, and the other 2 members of your group would receive 0 tokens each.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 6.6 tokens. In this case, you would receive 33.33% of the value of the Group Fund, plus the value of your own Individual Fund, worth a total of 3.2 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, worth a total of 2.2 tokens each.

TOTAL Earnings: Total Earnings for the experiment will be the sum of the earnings in all rounds of the experiment. Recall, at the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token of earnings from the experiment.

## AV EXPERIMENTAL INSTRUCTIONS: RAND TREATMENTS

*Welcome**No Talking and Cell-Phone Usage Allowed*

Now that the experiment has begun, we ask that you do not talk. Also, please turn off your cell phone. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

*Random Matching and Anonymity*

Each person will be randomly and anonymously matched with 2 other people to form a group. Thus, each group will contain 3 individuals. YOU WILL BE RANDOMLY RE-MATCHED INTO A NEW GROUP OF 3 AT THE START OF EACH DECISION ROUND OF THE EXPERIMENT. You and the other members in your group will be identified by ID numbers 1, 2, and 3. The ID numbers for you and each of the other group members will be randomly assigned at the start of each decision round of the experiment.

*Cash Payment*

Your earnings in this experiment are expressed in TOKENS. At the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token earned in the experiment.

*Multiple Rounds*

This experiment consists of 10 decision rounds. In each round, you will face the same decision task. The decision task in each round is described below.

*Starting Balances*

Each individual begins EACH ROUND with an endowment of 1 token. Each 3-person group begins EACH ROUND with a Group Fund containing 0 tokens.

*Decision Tasks in Each Round*

You will decide independently and privately whether to allocate your token to your own Individual Fund or to the Group Fund. The other players in your group will make similar decisions. Each token added to the Group Fund by a group member increases the value of the Group Fund by one of two Group Fund Returns, listed below. The computer will randomly

choose the Group Fund Return. Each return has an equal probability of being chosen in each round, regardless of the result from previous rounds.

- Low Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 0 tokens.
- High Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 3.3 tokens.

You will not know whether the Group Fund Return is High or Low until after you make your decision for the round.

However, before making your decision, you will see a SIGNAL related to the Group Fund Return. This signal is informative about the Group Fund Return, but may be inaccurate. Specifically, if the Group Fund Return is in fact High, you will see the signal “High” with 80% probability, and you will see the signal “Low” with 20% probability. Similarly, if the Group Fund Return is in fact Low, you will see the signal “Low” with 80% probability, and you will see the signal “High” with 20% probability. Thus, in short, on average the signal will correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

The other members of your group will also see signals, which will on average correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

Note that the Group Fund Return in a particular round is the same for you as it is for the other 2 members of your group. However, the other members of your group may not see the same signal that you see.

For example, suppose Tom and Mary are in the same group. Further suppose that the computer randomly chooses the High Group Fund Return. With 80% probability, Tom will see a signal that says “High,” and with 20% probability, he will see a signal that says “Low.” The same is true for Mary. So with probability 16% ( $= 80\% * 20\%$ ) Tom will see a signal that says “High” and Mary will see a signal that says “Low.” Similarly, there is a 16% chance that Tom will see a signal that says “Low” and Mary will see a signal that says “High.” Thus, overall, there is a 32% chance that Tom and Mary will see different signals.

(CHEAP TALK RAND TREATMENT ONLY) In each round, after you and the other group members receive your signals related to the Group Fund Return, but before you and the other group members decide whether to allocate your tokens to the Group Fund, you will each be able to send a message to the other group members. The message you will send will be one of two options, “High” or “Low.” You may choose either message option. After all group members send their messages, you will see the other group members’ messages and then make your allocation decision. You will not see the other group members’ signals.

### *Earnings*

Earnings in EACH round: After all persons in the group make their decisions, the Group Fund will be divided equally among all individuals in the group. That is, all individuals in the group will receive one-third (33.33%) of the Group Fund. In other words, for each token added to the Group Fund each group member will receive 0 tokens if the Low Group Fund Return is randomly chosen or 1.1 tokens if the High Group Fund Return is randomly chosen.

*Your earnings in a round will equal the ending value of tokens in your own Individual Fund plus one-third of the ending value of tokens in the Group Fund.*

After all individuals make their decisions for the round, the computer will tabulate the results. At the end of each round, you will receive information on the allocation decisions of each of the other group members identified by their ID numbers, the total number of tokens allocated to the Group Fund, your signal related to the Group Fund Return, (CHEAP TALK RAND TREATMENT ONLY) your message and the messages of the other group members related to the Group Fund Return, the Group Fund Return randomly chosen for that round, your earnings related to the Group Fund, and your total earnings for that round.

**The following examples** illustrate how your earnings from the Group Fund in a round are related to value of the Group Fund.

- Suppose all 3 members of your group (including yourself) allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive 0 tokens.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 9.9 tokens. In this case, each person would receive 33.33% of the Group Fund, worth 3.3 tokens each.
- Suppose all 3 members of your group (including yourself) allocate their tokens to their own Individual Funds.
  - Regardless of the Group Fund Return randomly chosen by the computer, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive the value of their own Individual Funds, worth 1 token each.
- Suppose you allocate your token to the Group Fund, but the other 2 members of your group allocate their tokens to their own Individual Funds.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive 0 tokens, and the other 2 members of your group would receive the value of their Individual Funds, worth 1 token each.

- If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 3.3 tokens. In this case, you would receive 33.33% of the value of the Group Fund, worth 1.1 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, plus the value of their Individual Funds, worth a total of 2.1 tokens each.
- Suppose you allocate your token to your own Individual Fund, but the other 2 members of your group allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive the value of your Individual Fund, worth 1 token, and the other 2 members of your group would receive 0 tokens each.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 6.6 tokens. In this case, you would receive 33.33% of the value of the Group Fund, plus the value of your own Individual Fund, worth a total of 3.2 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, worth a total of 2.2 tokens each.

TOTAL Earnings: Total Earnings for the experiment will be the sum of the earnings in all rounds of the experiment. Recall, at the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token of earnings from the experiment.

## AVI EXPERIMENTAL INSTRUCTIONS: STRATEGY METHOD TREATMENT

*Welcome**No Talking and Cell-Phone Usage Allowed*

Now that the experiment has begun, we ask that you do not talk. Also, please turn off your cell phone. If you have a question after we finish reading the instructions, please raise your hand and the experimenter will approach you and answer your question in private.

*Random Matching and Anonymity*

Each person will be randomly and anonymously matched with 2 other people to form a group. Thus, each group will contain 3 individuals. YOU WILL REMAIN IN THIS GROUP FOR THE REST OF THIS EXPERIMENT. You and the other members in your group will be identified by ID numbers 1, 2, and 3. The ID numbers for each of the other group members will remain the same for the entire experiment. For example, the same group member will be identified as group member 2 for the entire experiment.

*Cash Payment*

Your earnings in this experiment are expressed in TOKENS. At the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token earned in the experiment.

*Multiple Rounds*

This experiment consists of 10 decision rounds. In each round, you will face the same decision task. The decision task in each round is described below.

*Starting Balances*

Each individual begins EACH ROUND with an endowment of 1 token. Each 3-person group begins EACH ROUND with a Group Fund containing 0 tokens.

*Decision Tasks in Each Round*

You will decide independently and privately whether to allocate your token to your own Individual Fund or to the Group Fund. The other players in your group will make similar decisions. Each token added to the Group Fund by a group member increases the value of the Group Fund by one of two Group Fund Returns, listed below. The computer will randomly

choose the Group Fund Return. Each return has an equal probability of being chosen in each round, regardless of the result from previous rounds.

- Low Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 0 tokens.
- High Group Fund Return: Each token added to the Group Fund by a group member increases the value of the Group Fund by 3.3 tokens.

You will not know whether the Group Fund Return is High or Low until after you make your decision for the round. However, before making your decision, you will receive a SIGNAL related to the Group Fund Return. This signal is informative about the Group Fund Return, but may be inaccurate. Specifically, if the Group Fund Return is in fact High, you will receive the signal “High” with 80% probability, and you will receive the signal “Low” with 20% probability. Similarly, if the Group Fund Return is in fact Low, you will receive the signal “Low” with 80% probability, and you will receive the signal “High” with 20% probability. Thus, in short, on average the signal will correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

The other members of your group will also receive signals, which will on average correspond to the actual Group Fund Return 80% of the time, but will be inaccurate 20% of the time.

Note that the Group Fund Return in a particular round is the same for you as it is for the other 2 members of your group. However, the other members of your group may not receive the same signal that you receive.

For example, suppose Tom and Mary are in the same group. Further suppose that the computer randomly chooses the High Group Fund Return. With 80% probability, Tom will receive a signal that says “High,” and with 20% probability, he will receive a signal that says “Low.” The same is true for Mary. So with probability 16% ( $= 80\% * 20\%$ ) Tom will receive a signal that says “High” and Mary will receive a signal that says “Low.” Similarly, there is a 16% chance that Tom will receive a signal that says “Low” and Mary will receive a signal that says “High.” Thus, overall, there is a 32% chance that Tom and Mary will receive different signals.

In each round, before you and the other group members decide whether to allocate your tokens to the Group Fund, you will each be able to send a message to the other group members. The message you will send will be one of two options, “High” or “Low.” You may choose either message option. After all group members send their messages, you will receive the other group members’ messages and then make your allocation decision. You will not see the other group members’ signals.

In each round, before actually observing your signal, you will select a message for both possible values of the signal, “High” and “Low.” In the screenshot of the interface in Figure 1, on the left you are asked to choose a message in the case that your signal is “High,” and on the right you are asked to choose a message in the case that your signal is “Low.”

<p style="text-align: center;">Suppose your signal is HIGH</p> <p>Your message about the Group Fund Return <input type="radio"/> High  <input type="radio"/> Low</p>	<p style="text-align: center;">Suppose your signal is LOW</p> <p>Your message about the Group Fund Return <input type="radio"/> High  <input type="radio"/> Low</p>
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**Figure 1.** *Message selection interface*

The message you actually send will be the message you chose for the actual value of your signal.

After choosing your message for each possible value of your signal, you will similarly make an allocation decision for each possible value of your signal and each possible message from the other two members of your group. In the screenshot of the interface in Figure 2, on the left side you are asked to choose how to allocate your token if your signal is “High,” and on the right side you are asked to choose how to allocate your token if your signal is “Low,” each for the four possible combinations of messages from group members 1 and 2. For example, in the upper left part of the table on the left, you are asked to allocate your token to either the Group Fund or your Individual Fund in the case that your signal is “High” and both group members 1 and 2 send “High” messages. As another example, in the lower left part of the table on the right, you are asked to allocate your token in the case that your signal is “Low,” group member 1’s message is “Low,” and group member 2’s message is “High.”

<p style="text-align: center;">SUPPOSE YOUR SIGNAL IS HIGH</p> <p>Choose how to allocate your token for each possible combination of messages from the other group members.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 40%; text-align: center;">Group member 2's message about the Group Fund Return:</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td style="text-align: center;">High</td> <td style="text-align: center;">Low</td> <td></td> </tr> <tr> <td rowspan="2" style="vertical-align: top;">Group member 1's message about the Group Fund Return:</td> <td style="vertical-align: top;">High</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> </tr> <tr> <td style="vertical-align: top;">Low</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> </tr> </table>		Group member 2's message about the Group Fund Return:				High	Low		Group member 1's message about the Group Fund Return:	High	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	Low	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	<p style="text-align: center;">SUPPOSE YOUR SIGNAL IS LOW</p> <p>Choose how to allocate your token for each possible combination of messages from the other group members.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 40%; text-align: center;">Group member 2's message about the Group Fund Return:</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td></td> <td style="text-align: center;">High</td> <td style="text-align: center;">Low</td> <td></td> </tr> <tr> <td rowspan="2" style="vertical-align: top;">Group member 1's message about the Group Fund Return:</td> <td style="vertical-align: top;">High</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> </tr> <tr> <td style="vertical-align: top;">Low</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> <td><input type="radio"/> Group Fund <input type="radio"/> Individual Fund</td> </tr> </table>		Group member 2's message about the Group Fund Return:				High	Low		Group member 1's message about the Group Fund Return:	High	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	Low	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund	<input type="radio"/> Group Fund <input type="radio"/> Individual Fund
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**Figure 2.** *Allocation decision interface*

The allocation you actually choose will be your decision corresponding to the actual value of your signal and the actual messages sent by the other members of your group.

### *Earnings*

Earnings in EACH round: After all persons in the group make their decisions, the Group Fund will be divided equally among all individuals in the group. That is, all individuals in the group will receive one-third (33.33%) of the Group Fund. In other words, for each token added to the Group Fund each group member will receive 0 tokens if the Low Group Fund Return is randomly chosen or 1.1 tokens if the High Group Fund Return is randomly chosen.

*Your earnings in a round will equal the ending value of tokens in your own Individual Fund plus one-third of the ending value of tokens in the Group Fund.*

After all individuals make their decisions for the round, the computer will tabulate the results. At the end of each round, you will receive information on the allocation decisions of each of the other group members identified by their ID numbers, the total number of tokens allocated to the Group Fund, your signal related to the Group Fund Return, your message and the messages of the other group members related to the Group Fund Return, the Group Fund Return randomly chosen for that round, your earnings related to the Group Fund, and your total earnings for that round.

**The following examples** illustrate how your earnings from the Group Fund in a round are related to value of the Group Fund.

- Suppose all 3 members of your group (including yourself) allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive 0 tokens.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 9.9 tokens. In this case, each person would receive 33.33% of the Group Fund, worth 3.3 tokens each.
- Suppose all 3 members of your group (including yourself) allocate their tokens to their own Individual Funds.
  - Regardless of the Group Fund Return randomly chosen by the computer, this would result in a Group Fund with a total value of 0 tokens. In this case, each person would receive the value of their own Individual Funds, worth 1 token each.
- Suppose you allocate your token to the Group Fund, but the other 2 members of your group allocate their tokens to their own Individual Funds.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive 0 tokens, and the other 2 members of your group would receive the value of their Individual Funds, worth 1 token each.

- If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 3.3 tokens. In this case, you would receive 33.33% of the value of the Group Fund, worth 1.1 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, plus the value of their Individual Funds, worth a total of 2.1 tokens each.
- Suppose you allocate your token to your own Individual Fund, but the other 2 members of your group allocate their tokens to the Group Fund.
  - If the computer randomly chooses the Low Group Fund Return, this would result in a Group Fund with a total value of 0 tokens. In this case, you would receive the value of your Individual Fund, worth 1 token, and the other 2 members of your group would receive 0 tokens each.
  - If the computer randomly chooses the High Group Fund Return, this would result in a Group Fund with a total value of 6.6 tokens. In this case, you would receive 33.33% of the value of the Group Fund, plus the value of your own Individual Fund, worth a total of 3.2 tokens. The other 2 members of your group would also receive 33.33% of the value of the Group Fund, worth a total of 2.2 tokens each.

TOTAL Earnings: Total Earnings for the experiment will be the sum of the earnings in all rounds of the experiment. Recall, at the conclusion of the experiment you will be paid in U.S. dollars using a conversion rate of \$0.70 for every token of earnings from the experiment.