

Kamei, Kenju; Putterman, Louis

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Play it again: Partner choice, reputation building and learning in restarting, finitely-repeated dilemma games

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Supplementary Online Appendix for Kamei and Putterman, 2013,

“Play it Again: Partner Choice, Reputation Building
and Learning in Restarting, Finitely-Repeated Dilemma Games”

Kenju Kamei¹ and Louis Putterman²

¹ Department of Economics, Bowling Green State University, Bowling Green, OH 43403,
USA. Email: kenju.kamei@gmail.com.

² Department of Economics, Brown University, 64 Waterman Street, Providence, RI
02912, USA. Email: Louis_Putterman@brown.edu.

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Appendix A. Theoretical Predictions in the 100% treatments.

In this appendix, we discuss some key theoretical predictions for our experimental design using a simple partial equilibrium model, in which all subjects are assumed to be either conditional cooperators or maximizers of own money payoff—hereafter, payoff-maximizers. Specifically, we examine how strong the reputation building motives are for payoff-maximizers in the 100% treatments. Our prediction is that cooperation is more likely to be sustained in the 100% treatment, 1.7 than in the 100%, 1.3 treatment, and the larger is the proportion of conditional cooperators, due to higher incentives to build a good reputation through which they can pair with subjects of that type. For simplicity, we suppose that there are only three types of subjects in the population: sophisticated selfish payoff maximizers, unsophisticated selfish agents who always contribute 0, and conditional cooperators. We focus on the behavior of a sophisticated payoff maximizer who requires an expectation of material reward to motivate her cooperation, whereas conditional cooperators will contribute to their joint account whenever they expect the same from their counterpart, and unsophisticated selfish agents will always contribute 0.

Suppose that each subject believes that the percentage of conditional cooperators is p , and that of payoff maximizers is $1 - p$. Suppose also that these beliefs are correct: the percentage of conditional cooperators in the population is p in actuality. We now must make our assumptions about the choices conditional cooperators make more explicit. In a flexible definition (see, for instance, Fischbacher and Gächter, 2010), a conditional cooperator is any individual whose preferred contribution rises as the expected contributions of others rise. This leaves it possible that conditional cooperators are a class of agents, not a single homogeneous type. For simplicity, we assume a uniform degree of reciprocity of our homogeneous conditional cooperator type. We also need an assumption about conditional cooperators' expectations. We assume that if a conditional cooperator meets with a subject having average past contribution, A_{it} , to the joint account, then, the conditional cooperator contributes $x \cdot A_{it}$, where $x \in (0, 1]$. We focus on the 100% treatments since subjects' previous average contributions are fully conveyed in them. For period 1, as there is no average past contribution available, we refer to the amounts that conditional cooperators contribute in period 1 as A_0 .¹

¹ A_0 can be exogenously set in a model, dependent on an assumption. One example is to set A_0 equal to the expected proportion of conditional cooperators in the population.

Assumption 1: A conditional cooperator contributes $x \cdot A_{jt}$ in periods 2 to 10, where A_{jt} is his or her counterpart's average contribution to the joint account up to but not including period t .

In our analysis, we assume $x = 1$ for simplicity, although the implication that we obtain below would not change even if we assume $x < 1$, if x is not too small. Also, Assumption 1 implies very unsophisticated forecasting on the part of conditional cooperators, who expect each partner met to contribute her past average contribution even when there is evidence that contributions may be declining within the population. Both the assumption that $x = 1$ and the naïve forecasting assumption may bias our model towards somewhat too optimistic predictions, but the flavor of its predictions should nonetheless stand.

Our next assumption has an offsetting pessimistic bias: we assume that a selfish payoff maximizer i believes that all other selfish players contribute zero to the joint project, if they are matched as a pair. We assume, also, that this is indeed the case: all selfish players except i do contribute 0. Under these assumptions, we study how a strategically selfish payoff maximizer i has an incentive to build a good reputation as a mimicker of cooperation. The assumption on other selfish players' behavior is extreme, but it is fine as a benchmark for a lower bound of the selfish player i 's reputation building motive.

Assumption 2: Selfish players other than i contribute zero in all periods.

Furthermore, we restrict a selfish payoff maximizer i 's possible domain of contributions from 0 to A_0 (the contribution level of conditional cooperators in period 1); as it would be realistic to assume that if i is sufficiently sophisticated, he or she would want to avoid standing out from conditional cooperators. In other words, under conditions that make contributing rational for the payoff-maximizer, contributing the entire endowment will generate the largest payoff, but we will assume that she foregoes the potential short-term gain since she is eliciting contributions by mimicking conditional cooperators, and it would be odd were our model to have mimickers contributing more than conditional cooperators yet assumed to be indistinguishable from them.

Finally, we further simplify in a pessimistic direction by assuming that despite the mutual ranking mechanism, a selfish payoff maximizer i is randomly paired with a subject: that is, he or she is paired with a conditional cooperator with probability p ($1 - p$ for the case of being paired with a selfish payoff maximizer). We find that even in this circumstance, a payoff maximizer i has a substantial incentive to cooperate: a selfish player i contributes A_0 to her joint account in all initial periods, but in a round $k + 1$ determined by p and $mpcr$, he or she changes to fully free-riding, as in Proposition 1. There is, then, even more incentive to cooperate when one adds to the account that this increases the likelihood of attracting a cooperating partner.

Condition (1) in Proposition 1 summarizes the duration of the cooperation by payoff maximizer i and it is very intuitive. $-1 + mpcr + \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8} \right) \cdot mpcr \cdot p$, which is included in Condition (1), indicates i 's net gain from contributing one more unit to his joint account in period t .² For example, when $t = 5$, it is:

$$\begin{aligned}
& -1 + mpcr + \frac{1}{5} \cdot \left(1 + \sum_{s=1}^4 \frac{5}{5+s} \right) \cdot mpcr \cdot p \\
& = -1 + mpcr + \frac{1}{5} \cdot \left(1 + \frac{5}{5+1} + \frac{5}{5+2} + \frac{5}{5+3} + \frac{5}{5+4} \right) \cdot mpcr \cdot p \\
& = -1 + mpcr + \frac{1}{5} \cdot mpcr \cdot p + \frac{1}{6} \cdot mpcr \cdot p + \frac{1}{7} \cdot mpcr \cdot p + \frac{1}{8} \cdot mpcr \cdot p + \frac{1}{9} \cdot mpcr \cdot p \quad (0)
\end{aligned}$$

Period 5 earnings
from joint account

Total gains from the rises in his reputation in period 6 to 10

When a selfish payoff maximizer i contributes one point to the joint account in period 5, i loses the opportunity to gain one point from his or her private account (this is “-1” in expression (0)), but instead, i gets $mpcr$ from the joint account in that period. In addition, i enjoys gains resulting from an increase in his or her average past contributions in the subsequent periods, periods 6 through 10. For instance, in period 8, his average past contribution rises by $\frac{1}{7}$ when i contributes one point in period 5, as the average contribution in period 8 is calculated by the average of i 's seven past contributions. Since the probability that i meets with a conditional cooperator in

² Note that t in this and the following expressions always refers to the period in which subject i is considering whether to contribute to the joint account, whereas s is a counter for remaining periods. s takes maximum value 8 ($= 9 - t$) because at most there can be 9 remaining periods of the 10 period phase, in period $t = 1$. Although future benefit may also be anticipated in period 9, the indicator $1_{t \leq 8}$ takes value 1 up to decision-making period 8 only since the first 1 inside the parenthesis already captures the benefit in the immediately following period, in that case period 10.

period 8 is p , and since we assume that the conditional cooperator matches i 's average past contribution, i 's marginal gain in period 8 is $\frac{1}{7} \cdot mpcr \cdot p$.

If the net benefit, described in expression (0), is positive, i decides to contribute to his joint account in period 5. Notice that the earlier period it is (the smaller t is), the greater the value of expression (0) as there remain many future interactions. This means that for all periods t such that $-1 + mpcr + \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8}\right) \cdot mpcr \cdot p > 0$, a selfish player i invests in his or her joint account; beyond that period, however, i stops cooperating and changes to full free-riding in all remaining periods of the finitely-repeated super-game, since the future gains from investing in the joint activity no longer compensates for its current cost $(1 - mpcr)$.

Proposition 1: *Suppose that the series of assumptions above, including assumptions 1 and 2, hold. Then, in a given phase, a selfish payoff maximizer i continues to contribute A_0 to her joint account until period k such that*

$$k = \max \left\{ t \in \{1, 2, \dots, 8, 9\} : -1 + mpcr + \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8}\right) \cdot mpcr \cdot p > 0 \right\}, \quad (1)$$

where $1_{t \leq 8} = 1$ if $t \leq 8$; $= 0$, otherwise. Then, he or she contributes 0 in period $k + 1$ and afterwards, and continues to free-ride until the end of a given phase.

Proof:

This optimization problem can be solved by using the standard optimal control theory (see Sethi and Thompson (2005)).

A selfish payoff maximizer i maximizes his or her total expected earnings (material payoff) from his or her interactions with partners in the ten interactions of a given phase, with respect to his or her contribution decisions:

$$\max_{c_{it} \in \{1, 2, \dots, 10\}} \{J_i = \sum_{t=1}^{10} 10 - c_{it} + mpcr \cdot (c_{it} + p \cdot A_{it})\},$$

subject to: $\Delta A_{it} = A_{it+1} - A_{it} = -\frac{A_{it}}{t} + \frac{c_{it}}{t}$, $0 \leq c_{it} \leq A_0$. Here, c_{it} is player i 's contribution in period t , $10 - c_{it}$ is subject i 's earnings from the private account in period t , and $c_{it} + p \cdot A_{it}$ is the expected total contribution in his joint account in period t . $\Delta A_{it} = -\frac{A_{it}}{t+1} + \frac{c_{it}}{t+1}$ is obtained from the following relation:

$$t \cdot A_{it+1} = (t - 1) \cdot A_{it} + c_{it} \quad (2)$$

This relation holds since A_{it} is subject i 's average past contribution up to period $t - 1$. Relation (2) reduces to:

$$t \cdot A_{it+1} - t \cdot A_{it} = -A_{it} + c_{it}.$$

In other words:

$$A_{it+1} - A_{it}(= \Delta A_{it}) = -\frac{A_{it}}{t} + \frac{c_{it}}{t}.$$

The Hamiltonian H_t , in this problem, is defined as follows:

$$H_t = 10 - c_{it} + mpcr \cdot (c_{it} + p \cdot A_{it}) + \lambda^{t+1} \left(-\frac{A_{it}}{t} + \frac{c_{it}}{t} \right),$$

where λ^{t+1} is the shadow price of a unit of i 's average past contribution in period $t + 1$; and thus, the fourth term, $\lambda^{t+1} \Delta A_{it} = \lambda^{t+1} \left(-\frac{A_{it}}{t} + \frac{c_{it}}{t} \right)$ indicates the gain from periods $t + 1$ through period 10 when i contributes in period t .

Since H_t is linear in c_{it} , $\frac{\partial H_t}{\partial c_{it}} = -1 + mpcr + \frac{\lambda^{t+1}}{t}$ does not depend on c_{it} . This means that $c_{it} = A_0$ if $\frac{\partial H_t}{\partial c_{it}} > 0$, whereas $c_{it} = 0$ if $\frac{\partial H_t}{\partial c_{it}} < 0$ (the selfish player's optimal solution is a "bang-bang solution" (Sethi and Thompson 2005)). The adjoint equation in our optimal control problem is:

$$\Delta \lambda^{t+1} = \lambda^{t+1} - \lambda^t = -\frac{\partial H_t}{\partial A_{it}} = -mpcr \cdot p + \frac{\lambda^{t+1}}{t}. \quad (3)$$

$$\lambda^{11} = 0. \quad (4)$$

Equations (3), by rearranging them, reduces to:

$$\lambda^t = \frac{t-1}{t} \cdot \lambda^{t+1} + mpcr \cdot p, \text{ for each } t. \quad (5)$$

In other words,

$$\begin{aligned} \lambda^t &= \frac{t-1}{t} \cdot \lambda^{t+1} + mpcr \cdot p. \\ &= \frac{t-1}{t} \cdot \left(\frac{t}{t+1} \cdot \lambda^{t+2} + mpcr \cdot p \right) + mpcr \cdot p. \\ &= \frac{t-1}{t+1} \cdot \lambda^{t+2} + \frac{t-1}{t} \cdot mpcr \cdot p + mpcr \cdot p. \\ &= \frac{t-1}{t+1} \cdot \left(\frac{t+1}{t+2} \cdot \lambda^{t+3} + mpcr \cdot p \right) + \frac{t-1}{t} \cdot mpcr \cdot p + mpcr \cdot p. \\ &= \frac{t-1}{t+2} \cdot \lambda^{t+3} + \frac{t-1}{t+1} \cdot mpcr \cdot p + \frac{t-1}{t} \cdot mpcr \cdot p + mpcr \cdot p. \\ &= \dots \end{aligned}$$

$$\begin{aligned}
&= \frac{t-1}{10} \cdot \lambda^{11} + \dots + \frac{t-1}{t+2} \cdot mpcr \cdot p + \frac{t-1}{t+1} \cdot mpcr \cdot p + \frac{t-1}{t} \cdot mpcr \cdot p + mpcr \cdot p. \\
&= mpcr \cdot p + \sum_{s=0}^{9-t} \frac{t-1}{t+s} \cdot 1_{t \leq 9} \cdot mpcr \cdot p. \\
&= \left(1 + \sum_{s=0}^{9-t} \frac{t-1}{t+s} \cdot 1_{t \leq 9}\right) \cdot mpcr \cdot p,
\end{aligned}$$

where $1_{t \leq 9}$ is an indicator function; and $1_{t \leq 9} = 1$ if $t \leq 9$, and $= 0$ otherwise. In other words,

$$\begin{aligned}
\lambda^{t+1} &= \left(1 + \sum_{s=0}^{9-(t+1)} \left[\frac{t+1-1}{t+1+s}\right] \cdot 1_{t+1 \leq 9}\right) \cdot mpcr \cdot p \\
&= \left(1 + \sum_{s=0}^{8-t} \left[\frac{t}{t+1+s}\right] \cdot 1_{t \leq 8}\right) \cdot mpcr \cdot p \\
&= \left(1 + \sum_{s=1}^{9-t} \left[\frac{t}{t+s}\right] \cdot 1_{t \leq 8}\right) \cdot mpcr \cdot p.
\end{aligned}$$

Thus, we obtain the following:

$$\frac{\lambda^{t+1}}{t} = \begin{cases} \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8}\right) \cdot mpcr \cdot p, & \text{if } t \leq 9. \\ 0, & \text{if } t = 10. \end{cases}$$

$\frac{\partial H_t}{\partial c_{it}} = -1 + mpcr + \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8}\right) \cdot mpcr \cdot p$ when $t < 10$. Here, $\frac{1}{t} \cdot mpcr \cdot p$ is a

potential gain in period $t + 1$ from contributing marginal amounts in period t , and

$\frac{1}{t} \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8} \cdot mpcr \cdot p$ is the sum of the potential gains in periods $t + 2$ through 10 from the

marginal contribution in period t . We also see that $\frac{\partial H_t}{\partial c_{it}} = -1 + mpcr < 0$ when $t = 10$, as

$\frac{\lambda^{t+1}}{t} = 0$ (i.e. there is no gain by building a good reputation). From this, we find that a selfish payoff maximizer i contributes nothing in period 10 with certainty, but, in earlier period, t , the subject contributes A_0 if $\frac{\partial H_t}{\partial c_{it}} > 0$. The subject keeps contributing A_0 until the period before the

period such that $-1 + mpcr + \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8}\right) \cdot mpcr \cdot p$ becomes negative for the first time. In other words, the duration of cooperation, k , is such that

$$k = \max \left\{ t \in X : -1 + mpcr + \frac{1}{t} \left(1 + \sum_{s=1}^{9-t} \frac{t}{t+s} 1_{t \leq 8}\right) \cdot mpcr \cdot p > 0 \right\},$$

where X is a set consisting of positive integers up to 9, and then, the subject contributes 0 in period $k + 1$ and afterwards. ■

Condition (1) in Proposition 1 gives us the threshold concerning the percentage of conditional cooperators (p) in the population so that a selfish payoff maximizer i chooses to cooperate in

each periods in the environment. The relationship between k and p is summarized as follows by mpcr:

Table A.1. k in the above prediction and the percentage of conditional cooperators, p .

<i>mpcr</i>	The duration of cooperation, by a selfish payoff maximizer i (k)								
	1	2	3	4	5	6	7	8	9
0.65	19.0%	29.4%	40.5%	54.1%	72.2%	98.7%			
	$\leq p <$	$\leq p <$	$\leq p <$	$\leq p <$	$\leq p <$	$\leq p \leq$	n.a.	n.a	n.a
	29.4%	40.5%	54.1%	72.2%	98.7%	100%			
0.85	6.2%	9.6% \leq	13.3%	17.7%	23.7%	32.3%	46.6%	74.7%	
	$\leq p <$	$p <$	$\leq p <$	$\leq p <$	$\leq p <$	$\leq p <$	$\leq p <$	$\leq p \leq$	n.a
	9.6%	13.3%	17.7%	23.7%	32.3%	46.6%	74.7%	100%	

Note: These solutions apply for play of a 10 period finitely-repeated game in which i is the only sophisticated selfish player, p is the proportion of conditionally cooperative players, and remaining players always contribute 0. All numbers in the ranges of p are not exact numbers, but are rounded up to the first decimal points.

For example, if mpcr is 0.65 (the efficiency factor is 1.3) and if $p = 25\%$, then a selfish payoff maximizer i decides to cooperate only in period 1, after which she changes to full free-riding. The calculations are for the purpose of providing benchmarks only, but they show that a selfish payoff maximizer i holds materially strong reputation building motives only in very early rounds in the 1.3 treatment. The incentive to build a good reputation depends heavily on mpcr. We see that if mpcr is 0.85 (the efficiency factor is 1.7) and if $p = 25\%$, a selfish payoff maximizer i cooperates in periods 1 through 5, which is a relatively longer duration; after which he or she changes to full free-riding.

Also, Table A.1 reveals that the incentive to build reputation is largely dependent on p . For example, a selfish payoff maximizer i , if $p = 50\%$, instead of $p = 25\%$, chooses to contribute until period 3 and to fully defect in period 4 and afterwards with mpcr of 0.65; but, chooses to cooperate until period 7 and to fully free ride in period 8 and afterwards with mpcr of 0.85. Kamei (2011) calculated the percentage of conditional cooperators at Brown University, Rhode Island, using the strategy method developed by Fischbacher et al. (2001), finding that it is around

50%.³ The numerical calculation above indicates that in our sample cooperation may sustain for a longer duration in the 1.7 treatment, whereas it may be similarly high in very early periods but may quickly collapse in the 1.3 treatment.

Note that a selfish payoff maximizer i does not have an incentive to cooperate in period 9 with $mpcr$ of 0.65 or 0.85 according to Table A.1; if $mpcr$ were, however, extremely high, say, 0.95, though not our experimental parameter, then, the cooperation sustains until period 9 for the community with $p > 47.4\%$.

These considerations using the numerical calculations give us the following additional predictions.

Corollary: *A selfish payoff maximizer i is more likely to cooperate for a longer duration with $mpcr$ of 0.85 than with $mpcr$ of 0.65.*

Thus far, we've taken as a given that conditional cooperators are individuals who choose to match the expected contribution of their counterpart. One way to rationalize such behavior is to assume that conditional cooperator j can be described by the Fehr-Schmidt (1999) utility function, with inequality averse preferences: $u_j(\pi_j, \pi_m) = \pi_j - \alpha_j \cdot \max\{\pi_m - \pi_j, 0\} - \beta_j \cdot \max\{\pi_j - \pi_m, 0\}$, where $0 < \beta_j < \alpha_j$. The choice of the Fehr-Schmidt model is due to its tractability; conditional cooperation behavior can also be explained by other types of social preference models such as reciprocity models. Then, a similar partial equilibrium analysis indicates that if p is high enough that $p > \frac{1}{\alpha_j + \beta_j} \{1 + \alpha_j - mpcr\}$, j cooperates in the final round.

Proposition 2: *Suppose that all conditional cooperators have the average past contribution of A_{10} in period 10. Also suppose that the percentage of conditional cooperators is large enough*

³ In the experiment of the present paper, the percentages of subjects that contributed positive amounts in period 10 of phase 1 were 35.0% and 57.5% in the 100%, 1.3 and 100%, 1.7 treatments, respectively. As pointed out in our paper, contributing in the last period gives only a lower-bound indication of conditional cooperation, because a conditional cooperator who expects their counterpart to contribute 0 also contributes 0. The smaller share of positive contributors in the 100%, 1.3 treatment may be largely due to diminished expectations that others will contribute in period 10, thanks to much lower contributions as that period approaches. Placing slightly more weight on the 57.5% share for this reason, these numbers are broadly consistent with the estimate of Kamei (2011).

that $p > \max_j \frac{1}{\alpha_j + \beta_j} \{1 + \alpha_j - mpcr\}$. Finally, suppose that each conditional cooperator treats the probability that her period 10 counterpart is a conditional cooperator as equal to p .⁴ Then, there exists an equilibrium in which all conditional cooperators choose to contribute A_{10} in the last round.

Proof: In order to derive this prediction, all we have to do is to show that there is no incentive for a conditional cooperator to defect from the mutual cooperation equilibrium.

Assume that all conditional cooperators except j contributes the average past contribution amounts of their counterpart (i.e., A_{10}) in Period 10. Then, a conditional cooperator j 's utility function is expressed as:

$$u_j(c_{j10}) = 10 - c_{j10} + mpcr \cdot (c_{j10} + p \cdot A_{10}) - p \cdot \alpha_j \cdot (c_{j10} - A_{10}) 1_{A_{10} < c_{j10}} \\ - p \cdot \beta_j \cdot (A_{10} - c_{j10}) 1_{A_{10} > c_{j10}} - (1 - p) \cdot \alpha_j \cdot c_{j10}.$$

Here, j meets with a selfish free-rider with a probability of $1 - p$, and incurs a disutility $\alpha_j \cdot c_{j10}$ due to a disadvantageous disutility, which is the last term in the above utility function, $-(1 - p) \cdot \alpha_j \cdot c_{j10}$.

The first-order condition reduces to:

$$\frac{\partial u_j}{\partial c_{j10}} = \begin{cases} -1 + mpcr - p \cdot \alpha_j - (1 - p) \cdot \alpha_j, & \text{if } A_{10} < c_{j10} \\ -1 + mpcr + p \cdot \beta_j - (1 - p) \cdot \alpha_j, & \text{if } A_{10} > c_{j10} \end{cases}.$$

From this, we know that $\frac{\partial u_j}{\partial c_{j10}} < 0$ if $A_{10} < c_{j10}$, as $mpcr < 1$ always. Also, since we assume that $p > \max_j \frac{1}{\alpha_j + \beta_j} \{1 + \alpha_j - mpcr\}$, $\frac{\partial u_j}{\partial c_{j10}} > 0$ when $A_{10} > c_{j10}$. This means that $c_{j10} = A_{10}$ is j 's optimal contribution. ■

Reference

Fehr, Ernst and Klaus M. Schmidt (1999). "A theory of fairness, competition, and cooperation." *Quarterly Journal of Economics*, 114, 817-868.

⁴ This simplifies by disregarding information subjects in the experiment may be able to use to identify the type of their counterpart if $k < 9$.

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Appendix B. Additional Analysis, Tables and Figures.

Table B.1. Test Results for the Equality of the Coefficients of Variables (a) and (b) across treatments in Table 2 (supplementing the regression analysis in Table 2 of “Play it Again”)

(I) For the equality of coefficients on Variable (a) (*j*’s average past contribution)

		Treatment			
		50% 1.3	100% 1.3	50% 1.7	100% 1.7
Treatment	50% 1.3	----	.7132	.2445	.0075***
	100% 1.3	----	----	.4448	.0039***
	50% 1.7	----	----	----	.0001***

Notes: Two-sided Chi-squared test results. Numbers in the table are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed Chi-squared tests.

(II) For the equality of coefficients on Variable (b) (share of past periods for which information is included)

Two-sided Chi-squared test results: *p*-value = .0017***

Notes: *** indicate significance at the .01 level. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed Chi-squared tests.

Table B.2. A Regression Analysis for Strategic Ranking Behavior of Those Whose Average Past Contributions are Lower

(I) Regression Result

Dependent variable: A binary variable which equals 1 if a subject did not give his or her highest rank to the highest contributor in the other subgroup of five; 0 otherwise.

Independent Variable	100% treatment	
	Factor of 1.3 (1)	Factor of 1.7 (2)
The average past contribution of the person who is going to rank	-1.02***	-1.43***
The maximum average past contribution among the five in the other subgroup of five	(0.16)	(0.28)
(a) Phase 2 dummy {=1 if Phase 2; 0 otherwise}	0.11 (0.12)	-0.38*** (0.14)
(b) Phase 3 dummy {=1 if Phase 3; 0 otherwise}	0.54*** (0.12)	-0.40*** (0.15)
(c) Phase 4 dummy {=1 if Phase 3; 0 otherwise}	0.43*** (0.13)	-0.80*** (0.17)
Periods within phase {= 1, 2, ..., 9, 10}	0.089*** (0.017)	0.10*** (0.022)
Constant	-1.11*** (0.22)	-0.77*** (0.30)
# of Observations	1440	1440
Log likelihood	-629.88	-370.66
Wald Chi-squared	86.24	70.56
Prob > Wald Chi-squared	.0000	.0000

Notes: Individual random effect probit regressions. “Highest rank” refers to best rank, namely a rank of 1. All observations but period 1 are used. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(II) A Test for the equality of the coefficients of the “The ratio of the average past contribution of the person who is going to rank, to the maximum average past contribution among the five in the other subgroup” variable between column (1) and column (2)

Two-sided Chi-squared test results: p -value = .3174

Note: For this test, we first jointly estimated the coefficients of all variables using a pooled regression, then performed Chi-squared tests.

Table B.3. Determinants of Ranking Decisions in the 0% info treatmentsDependent variable: Rank given to subject j in Period t

Independent Variable	0%, 1.3 (1)	0%, 1.7 (2)
(a) Subject j 's Perceived Average Previous Contribution	-0.12*** (0.012)	-0.072*** (0.0071)
(b) The Number of Interaction with Subject j prior to Period t	0.052 (0.035)	-0.37*** (0.032)
Constant	3.17*** (0.040)	3.55*** (0.048)
# of Observations	6495	6385
Log Likelihood	-11302.2	-11041.5
Chi-squared	101.4	231.7
Prob > Chi-squared	0.000	0.000

Notes: Individual random effect Tobit regressions. Only observations whose variable (a) is defined are used. The numbers of left-censored observations are 1299 in column (1), and 1277 in column (2); numbers of right-censored observations are identical, since subjects are required to assign both the minimum and the maximum rank (as well as each of the intervening ranks) in every period..

*, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Remark: The subjects' potential partners' perceived average contribution in period t are calculated as follows:

(1) If a subject had interacted with a potential partner (which s/he would rank in period t) before period t , the average of the partner's past contributions during their periods of interaction is used as the potential partner's contribution;

(2) If the subject hadn't interacted with the potential partner, the median of the average contributions made by potential partners with whom he has interacted at least once is used.

Table B.4. Pearson's Bivariate Correlation Coefficients between subjects' own actual standing (relative past average contribution) and partner's

Calculation Methods:

Step 1: We arrange each subject's five potential period t partners' actual average past contributions in a descending order, and then give a number to each of them from 1 to 5; a subject with higher average past contribution decision is ranked with a smaller number. We call the numbers the "standing of subjects" (from 1st to 5th).

Step 2: Likewise, we calculate each subject's own standing (from 1st to 5th) within the group of five amongst whom he is compared by prospective partners in period t .

In Step 1 and Step 2, actual average past contribution of subject i in period $t \in \{2, 3, \dots, 10\}$ is calculated by the average of i 's $t - 1$ past contribution decisions.

Step 3: We calculate Pearson's bivariate correlation coefficients between pairs, separately for each treatment.

If the ranking procedure and partner assignment algorithm matched like-minded or at least like-behaving subjects (high contributors with high contributors, low contributors with low contributors) as a pair, then, the bivariate correlation coefficients would be more highly positive and significant.

We calculate the bivariate correlation coefficients for each treatment period by period, using all pairings in a given treatment and period without regard to the subject set or session in which each pair arises.

The bivariate correlation coefficients are not calculated in the first period of each phase since average past contribution information is entirely unavailable in that period so pairings should be effectively random.

(1) 0%, 1.3 treatment

	Pearson's correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.116	0.475
Period 3	0.565***	0.000
Period 4	0.022	0.892
Period 5	0.196	0.224
Period 6	0.634***	0.000
Period 7	-0.095	0.561
Period 8	0.179	0.268
Period 9	-0.006	0.973
Period 10	0.079	0.626
Period 11	N/A	N/A
Period 12	0.639***	0.000
Period 13	-0.244	0.128
Period 14	0.045	0.781
Period 15	0.531***	0.000
Period 16	-0.484***	0.001
Period 17	-0.077	0.636
Period 18	0.375**	0.017
Period 19	0.087	0.595
Period 20	-0.045	0.782
Period 21	N/A	N/A
Period 22	0.256	0.111
Period 23	0.128	0.431
Period 24	0.474***	0.002
Period 25	0.472***	0.002
Period 26	-0.281*	0.078
Period 27	0.41***	0.008
Period 28	0.596***	0.000
Period 29	0.148	0.362
Period 30	0.319**	0.045
Period 31	N/A	N/A
Period 32	0.779***	0.000
Period 33	0.244	0.129
Period 34	0.172	0.288
Period 35	-0.055	0.737
Period 36	0.857***	0.000
Period 37	0.231	0.152
Period 38	0.213	0.187
Period 39	0.659***	0.000
Period 40	0.523***	0.001

Notes: The actual standing variable of a subject in period t is calculated based on the average contributions up to (and including) period $t-1$ of five subjects in his subgroup: the actual standing variable equals $x \in \{1, 2, \dots, 5\}$ if his average past contribution is the x^{th} highest among the five subjects. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(2) 50%, 1.3 treatment

	Pearson correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.064	0.696
Period 3	-0.003	0.983
Period 4	0.136	0.402
Period 5	0.741***	0.000
Period 6	0.457***	0.003
Period 7	0.732***	0.000
Period 8	0.472***	0.002
Period 9	0.558***	0.000
Period 10	0.498***	0.001
Period 11	N/A	N/A
Period 12	0.412***	0.008
Period 13	0.444***	0.004
Period 14	0.144	0.375
Period 15	0.598***	0.000
Period 16	0.566***	0.000
Period 17	0.59***	0.000
Period 18	0.175	0.279
Period 19	0.562***	0.000
Period 20	0.432***	0.005
Period 21	N/A	N/A
Period 22	0.055	0.735
Period 23	0.512***	0.001
Period 24	0.583***	0.000
Period 25	0.84***	0.000
Period 26	0.653***	0.000
Period 27	0.567***	0.000
Period 28	0.646***	0.000
Period 29	0.63***	0.000
Period 30	0.606***	0.000
Period 31	N/A	N/A
Period 32	0.5***	0.001
Period 33	0.169	0.296
Period 34	0.491***	0.001
Period 35	0.479***	0.002
Period 36	0.298*	0.062
Period 37	0.497***	0.001
Period 38	0.534***	0.000
Period 39	0.466***	0.002
Period 40	0.742***	0.000

Notes: The actual standing variable of a subject in period t is calculated based on the average contributions up to (and including) period $t-1$ of five subjects in his subgroup: the actual standing variable equals $x \in \{1, 2, \dots, 5\}$ if his average past contribution is the x^{th} highest among the five subjects. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(3) 100%, 1.3 treatment

	Pearson's correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.536***	0.000
Period 3	0.639***	0.000
Period 4	0.882***	0.000
Period 5	0.783***	0.000
Period 6	0.959***	0.000
Period 7	0.837***	0.000
Period 8	0.779***	0.000
Period 9	0.865***	0.000
Period 10	0.763***	0.000
Period 11	N/A	N/A
Period 12	0.657***	0.000
Period 13	0.882***	0.000
Period 14	0.875***	0.000
Period 15	0.632***	0.000
Period 16	0.825***	0.000
Period 17	0.867***	0.000
Period 18	0.911***	0.000
Period 19	0.82***	0.000
Period 20	0.567***	0.000
Period 21	N/A	N/A
Period 22	0.551***	0.000
Period 23	0.606***	0.000
Period 24	0.727***	0.000
Period 25	0.593***	0.000
Period 26	0.69***	0.000
Period 27	0.81***	0.000
Period 28	0.658***	0.000
Period 29	0.582***	0.000
Period 30	0.725***	0.000
Period 31	N/A	N/A
Period 32	0.572***	0.000
Period 33	0.512***	0.001
Period 34	0.656***	0.000
Period 35	0.816***	0.000
Period 36	0.934***	0.000
Period 37	0.808***	0.000
Period 38	0.597***	0.000
Period 39	0.32**	0.044
Period 40	0.675***	0.000

Notes: The actual standing variable of a subject in period t is calculated based on the average contributions up to (and including) period $t-1$ of five subjects in his subgroup: the actual standing variable equals $x \in \{1, 2, \dots, 5\}$ if his average past contribution is the x^{th} highest among the five subjects. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(4) 0%, 1.7 treatment

	Pearson's correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.124	0.446
Period 3	0.265*	0.097
Period 4	-0.009	0.958
Period 5	0.045	0.781
Period 6	-0.010	0.950
Period 7	0.265*	0.097
Period 8	0.382**	0.015
Period 9	0.294*	0.065
Period 10	0.172	0.288
Period 11	N/A	N/A
Period 12	0.243	0.131
Period 13	0.499***	0.001
Period 14	-0.049	0.762
Period 15	0.108	0.508
Period 16	0.211	0.191
Period 17	0.38**	0.015
Period 18	0.542***	0.000
Period 19	0.256	0.111
Period 20	0.276*	0.084
Period 21	N/A	N/A
Period 22	-0.339**	0.032
Period 23	0.371**	0.018
Period 24	0.163	0.316
Period 25	0.426***	0.006
Period 26	0.328**	0.038
Period 27	0.066	0.684
Period 28	0.092	0.573
Period 29	0.31*	0.052
Period 30	0.398**	0.011
Period 31	N/A	N/A
Period 32	0.110	0.501
Period 33	0.116	0.477
Period 34	-0.193	0.233
Period 35	0.286*	0.074
Period 36	0.166	0.307
Period 37	0.363**	0.021
Period 38	0.645***	0.000
Period 39	0.347**	0.028
Period 40	0.49***	0.001

Notes: The actual standing variable of a subject in period t is calculated based on the average contributions up to (and including) period $t-1$ of five subjects in his subgroup: the actual standing variable equals $x \in \{1, 2, \dots, 5\}$ if his average past contribution is the x^{th} highest among the five subjects. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(5) 50%, 1.7 treatment

	Pearson correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.362**	0.010
Period 3	0.414***	0.003
Period 4	0.371***	0.008
Period 5	0.463***	0.001
Period 6	0.129	0.370
Period 7	0.394***	0.005
Period 8	0.476***	0.000
Period 9	0.641***	0.000
Period 10	0.596***	0.000
Period 11	N/A	N/A
Period 12	0.184	0.200
Period 13	0.148	0.305
Period 14	0.597***	0.000
Period 15	0.506***	0.000
Period 16	0.635***	0.000
Period 17	0.782***	0.000
Period 18	0.734***	0.000
Period 19	0.48***	0.000
Period 20	0.288**	0.042
Period 21	N/A	N/A
Period 22	0.259*	0.069
Period 23	0.514***	0.000
Period 24	0.577***	0.000
Period 25	-0.097	0.504
Period 26	0.586***	0.000
Period 27	0.523***	0.000
Period 28	0.354**	0.011
Period 29	0.599***	0.000
Period 30	0.62***	0.000
Period 31	N/A	N/A
Period 32	0.000	1.000
Period 33	0.071	0.622
Period 34	0.263*	0.065
Period 35	0.54***	0.000
Period 36	0.551***	0.000
Period 37	0.408***	0.003
Period 38	0.463***	0.001
Period 39	0.264*	0.064
Period 40	0.602***	0.000

Notes: The actual standing variable of a subject in period t is calculated based on the average contributions up to (and including) period $t-1$ of five subjects in his subgroup: the actual standing variable equals $x \in \{1, 2, \dots, 5\}$ if his average past contribution is the x^{th} highest among the five subjects. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(6) 100%, 1.7 treatment

	Pearson's correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.58***	0.000
Period 3	0.584***	0.000
Period 4	0.55***	0.000
Period 5	0.719***	0.000
Period 6	0.556***	0.000
Period 7	0.696***	0.000
Period 8	0.703***	0.000
Period 9	0.469***	0.002
Period 10	0.814***	0.000
Period 11	N/A	N/A
Period 12	0.391**	0.012
Period 13	0.808***	0.000
Period 14	0.333**	0.036
Period 15	0.979***	0.000
Period 16	0.585***	0.000
Period 17	0.79***	0.000
Period 18	0.76***	0.000
Period 19	0.589***	0.000
Period 20	0.614***	0.000
Period 21	N/A	N/A
Period 22	0.497***	0.001
Period 23	0.347**	0.028
Period 24	0.61***	0.000
Period 25	0.716***	0.000
Period 26	0.505***	0.001
Period 27	0.803***	0.000
Period 28	0.529***	0.000
Period 29	0.551***	0.000
Period 30	0.456***	0.003
Period 31	N/A	N/A
Period 32	0.359**	0.023
Period 33	0.581***	0.000
Period 34	0.378**	0.016
Period 35	0.551***	0.000
Period 36	0.675***	0.000
Period 37	0.607***	0.000
Period 38	0.46***	0.003
Period 39	0.52***	0.001
Period 40	0.769***	0.000

Notes: The actual standing variable of a subject in period t is calculated based on the average contributions up to (and including) period $t-1$ of five subjects in his subgroup: the actual standing variable equals $x \in \{1, 2, \dots, 5\}$ if his average past contribution is the x^{th} highest among the five subjects. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Table B.5. Pearson's Bivariate Correlation Coefficients between subjects' own recorded/perceived contribution standing and partner's recorded/perceived standing

This analysis differs from that of Table B.4 in that here we check the performance of the ranking procedure and matching algorithm with respect to pairing like individuals in terms only of the information available to the subjects themselves, rather than in terms of their actual full histories of contribution in a given phase.

In the 0% treatment, in each ranking stage, subjects possessed knowledge of the past contributions of potential partner only if the pair had already interacted during the phase. This knowledge was available thanks to the identification of prospective partners by (within phase) fixed IDs, and the display of feedback on the partner's contribution at the end of each period.

In the 50% treatment, in each ranking stage, subjects were shown the past contribution of potential partners taking into account only those periods randomly selected (with probability 50%) to be recorded for inclusion in this tally. (Recollection of potential partners' actions in past interactions within the current phase based on ID numbers, as in the 0% treatment, was also possible.)

We calculate Pearson's bivariate correlation coefficients based only on their interaction experiences in the 0% treatment, and only on their recorded average past contributions in the 50% treatment.

Calculation Methods:

[In the 50% treatment:]

Step 1: We arrange five potential partners' "recorded" average past contribution decisions in an descending order. If no average past contributions of a subject have been recorded, then, the median of the contribution decisions of all others among the five whose contribution decisions have been recorded at least once is assigned to that subject as his or her average past contribution. Based on these average numbers, we assign a standing number to each of them from 1 to 5 so that a subject with a higher average past contribution decision is ranked with a smaller number. We call the number the "recorded/perceived standing of subjects" (from 1st to 5th), as opposed to the actual standing of subjects.

Step 2: Likewise, we calculate each subject's own recorded/perceived standing (from 1st to 5th), based on her recorded/perceived average past contributions, within her own subset of five.

In Step 1 and Step 2, we do not use data for the period and subject set in question if all five individuals in either of the five person subsets have had no contribution decision recorded thus far in the phase.

Step 3: We calculate Pearson's bivariate correlation coefficients between pairs based on the recorded/perceived standing variable by treatment and by period.

If the ranking procedure matched like subjects as pairs, then, the bivariate correlation coefficients be large and significant.

Note that in this analysis, the bivariate correlation coefficients are not calculated in the first period of each phase, since average past contributions are never available in that period.

[In the 0% treatment:]

Step 1: We calculate each of five potential partners' "perceived" or experienced average past contribution decisions, based on their interaction results so far, and then, arrange them in an descending order. If a subject has not interacted with some potential partners, then, the median of the contribution decisions of all other potential partners with whom the subject has interacted at least once is assigned to that subject. Based on these, we give a number to each of the five potential partners from 1 to 5 so that a subject with higher experienced average contribution decision is ranked with a smaller number. We call the number the "recorded/perceived standing of subjects" (from 1st to 5th) as in the 50% treatment.⁵

Step 2: Likewise, we calculate each subject's own recorded/perceived standing (from 1st to 5th), based on their experienced average past contributions in his subset of five.

In Step 1 and Step 2, we do not use the data of a pair eventually matched for the period if one or both of the subjects had not yet interacted with any of her five potential partners.

Step 3: We calculate Pearson's bivariate correlation coefficients between pairs based on the recorded/perceived standing variable by treatment and by period.

Note that in these calculations, the bivariate correlation coefficients are not calculated not only in the first but also in the second period of each phase, since subjects will at most have had experience with only one other member of the potential partner sub-group, too few to allow assignment of relative ranks.

⁵ In cases of tied contributions, we give all subjects concerned the same standing number, which is the first applicable integer. For example, suppose that five subjects have the average records 10, 5, 4, 4, and 3, respectively. Then, the subject having 10 has standing rank 1, the subject with a record of 5 has standing rank 2, both subjects with a record of 4 have standing rank 3, and the subject whose past average contribution is 3 has standing rank 5.

(1) 0%, 1.3 treatment

	Pearson's correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	N/A	N/A
Period 3	-0.143	0.379
Period 4	0.040	0.806
Period 5	-0.021	0.898
Period 6	0.306*	0.055
Period 7	0.279*	0.081
Period 8	-0.018	0.914
Period 9	-0.310*	0.051
Period 10	0.162	0.317
Period 11	N/A	N/A
Period 12	N/A	N/A
Period 13	0.467***	0.002
Period 14	0.253	0.114
Period 15	0.375**	0.017
Period 16	0.081	0.617
Period 17	0.121	0.457
Period 18	0.000	1.000
Period 19	-0.192	0.235
Period 20	-0.181	0.262
Period 21	N/A	N/A
Period 22	N/A	N/A
Period 23	-0.176	0.276
Period 24	0.200	0.216
Period 25	-0.103	0.528
Period 26	-0.104	0.523
Period 27	-0.015	0.926
Period 28	-0.089	0.585
Period 29	-0.002	0.992
Period 30	0.097	0.552
Period 31	N/A	N/A
Period 32	N/A	N/A
Period 33	-0.026	0.875
Period 34	0.283*	0.076
Period 35	0.000	1.000
Period 36	0.167	0.304
Period 37	0.286*	0.074
Period 38	-0.026	0.875
Period 39	0.201	0.212
Period 40	0.265*	0.098

Notes: The subjects' or their partners' perceived standing equals $x \in \{1, 2, \dots, 5\}$ if his or her past perceived average contribution is the x^{th} highest among the five subjects in his or her subset. Subjects' potential partners' perceived average contributions in period t are calculated as follows: (1) If a subject had interacted with a potential partner (which s/he would rank in period t) before period t , the average of the partner's past contribution decisions in periods played with the subject is used as the potential partner's contribution; (2) If the subject hadn't interacted with the potential partner, the median of the average contributions made by potential partners with whom he has interacted at least once is used. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(2) 50%, 1.3 treatment

	Pearson correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.007	0.966
Period 3	0.202	0.210
Period 4	0.483***	0.002
Period 5	0.599***	0.000
Period 6	0.627***	0.000
Period 7	0.684***	0.000
Period 8	0.756***	0.000
Period 9	0.571***	0.000
Period 10	0.797***	0.000
Period 11	N/A	N/A
Period 12	0.334**	0.035
Period 13	0.329**	0.038
Period 14	0.602***	0.000
Period 15	0.471***	0.002
Period 16	0.572***	0.000
Period 17	0.701***	0.000
Period 18	0.529***	0.000
Period 19	0.536***	0.000
Period 20	0.457***	0.003
Period 21	N/A	N/A
Period 22	0.395**	0.011
Period 23	0.331**	0.037
Period 24	0.544***	0.000
Period 25	0.535***	0.000
Period 26	0.621***	0.000
Period 27	0.573***	0.000
Period 28	0.439***	0.005
Period 29	0.343**	0.030
Period 30	0.726***	0.000
Period 31	N/A	N/A
Period 32	-0.118	0.468
Period 33	0.177	0.273
Period 34	0.644***	0.000
Period 35	0.621***	0.000
Period 36	0.685***	0.000
Period 37	0.723***	0.000
Period 38	0.886***	0.000
Period 39	0.550***	0.000
Period 40	0.691***	0.000

Notes: The recorded standing variable of a subject in period t equals $x \in \{1, 2, \dots, 5\}$ if his or her past recorded/perceived average contribution is the x^{th} highest among the five potential partners. The standing variable in period t is calculated based on the recorded average contributions up to (and including) period $t-1$ of five subjects in his subgroup. If the subject's contribution has not been recorded by then, the median of other members' recorded average contributions in his subgroup is used. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(3) 0%, 1.7 treatment

	Pearson's correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	N/A	N/A
Period 3	-0.143	0.379
Period 4	-0.099	0.544
Period 5	-0.212	0.188
Period 6	0.236	0.143
Period 7	0.032	0.843
Period 8	0.654***	0.000
Period 9	-0.341**	0.031
Period 10	0.380**	0.015
Period 11	N/A	N/A
Period 12	N/A	N/A
Period 13	0.444***	0.004
Period 14	0.063	0.702
Period 15	-0.026	0.875
Period 16	0.16	0.325
Period 17	0.061	0.708
Period 18	0.279*	0.081
Period 19	0.306*	0.055
Period 20	0.241	0.133
Period 21	N/A	N/A
Period 22	N/A	N/A
Period 23	0.314**	0.048
Period 24	0.048	0.770
Period 25	-0.067	0.683
Period 26	0.213	0.187
Period 27	0.16	0.325
Period 28	0.437***	0.005
Period 29	0.061	0.708
Period 30	-0.039	0.811
Period 31	N/A	N/A
Period 32	N/A	N/A
Period 33	0.283*	0.076
Period 34	-0.25	0.119
Period 35	0.121	0.457
Period 36	-0.008	0.959
Period 37	0.424***	0.006
Period 38	0.457***	0.003
Period 39	0.385**	0.014
Period 40	-0.25	0.119

Notes: The subjects' or their partners' perceived standing equals $x \in \{1, 2, \dots, 5\}$ if his or her past perceived average contribution is the x^{th} highest among the five subjects in his or her subgroup. Subjects' potential partners' perceived average contributions in period t are calculated as follows: (1) If a subject had interacted with a potential partner (which s/he would rank in period t) before period t , the average of the partner's past contribution decisions in periods played with the subject is used as the potential partner's contribution; (2) If the subject hadn't interacted with the potential partner, the median of the average contributions made by potential partners with whom he has interacted at least once is used. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(4) 50%, 1.7 treatment

	Pearson correlation	<i>p</i> -value (two-sided)
Period 1	N/A	N/A
Period 2	0.004	0.978
Period 3	0.055	0.702
Period 4	0.515***	0.000
Period 5	0.738***	0.000
Period 6	0.579***	0.000
Period 7	0.497***	0.000
Period 8	0.642***	0.000
Period 9	0.726***	0.000
Period 10	0.550***	0.000
Period 11	N/A	N/A
Period 12	0.537***	0.000
Period 13	0.072	0.620
Period 14	0.225	0.116
Period 15	0.585***	0.000
Period 16	0.613***	0.000
Period 17	0.655***	0.000
Period 18	0.806***	0.000
Period 19	0.600***	0.000
Period 20	0.608***	0.000
Period 21	N/A	N/A
Period 22	0.047	0.746
Period 23	0.097	0.502
Period 24	0.535***	0.000
Period 25	0.192	0.180
Period 26	0.334**	0.018
Period 27	0.503***	0.000
Period 28	0.466***	0.001
Period 29	0.832***	0.000
Period 30	0.360**	0.010
Period 31	N/A	N/A
Period 32	0.387***	0.005
Period 33	0.545***	0.000
Period 34	0.450***	0.001
Period 35	0.503***	0.000
Period 36	0.560***	0.000
Period 37	0.357**	0.011
Period 38	0.550***	0.000
Period 39	0.329**	0.020
Period 40	0.441***	0.001

Notes: The recorded standing variable of a subject in period t equals $x \in \{1, 2, \dots, 5\}$ if his or her past recorded/perceived average contribution is the x^{th} highest among the five subjects. The standing variable in period t is calculated based on the recorded average contributions up to (and including) period $t-1$ of five subjects in his subgroup. If the subject's contribution has not been recorded by then, the median of other members' recorded average contributions in his subgroup is used. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Table B.6. The Partial Correlation between Subjects' own and their partners' average past contributions(I) Between Subjects' own and their partners' *actual* average past contributions(Ia) Dependent Variable: Subject's average contribution for all previous periods in Period t

Independent Variable	Factor of 1.3						Factor of 1.7					
	0% info		50% info		100% info		0% info		50% info		100% info	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(a) Subject's period												
t partner average	0.22***	0.22***	0.26***	0.25***	0.57***	0.55***	0.13***	0.12***	0.46***	0.42***	0.51***	0.47***
past contribution for	(0.027)	(0.027)	(0.023)	(0.022)	(0.022)	(0.022)	(0.027)	(0.026)	(0.031)	(0.030)	(0.036)	(0.034)
all past periods												
Constant	----	0.28***	----	3.42***	----	2.59***	----	4.07***	----	6.03***	----	6.18***
		(0.57)		(0.60)		(0.30)		(1.13)		(0.50)		(0.54)
# of Observations	1440	1440	1440	1440	1440	1440	1440	1400	1800	1800	1440	1440
Log likelihood	-2214.8	-2214.7	-2717.7	-2705.8	-2936.8	-2914.7	-2255.3	-2249.4	-2873.3	-2836.3	-1914.5	-1881.8
F	69.3	67.8	135.4	128.4	656.7	649.6	23.7	21.6	226.4	205.6	202.0	194.5
Prob > F	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Notes: Individual random effect Tobit regressions. Observations in all periods but period 1 are used. The numbers of left-(right-) censored observations are 567(37) in columns (1) and (2), 200(216) in columns (3) and (4), 58(154) in columns (5) and (6), 331(335) in columns (7) and (8), 39(821) in columns (9) and (10), 25(789) in columns (11) and (12). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(Ib) Tests for the equality of coefficients on variable (a) included in Appendix Table (Ia) (above)

		Treatment					
		Column (1)	Column (3)	Column (5)	Column (7)	Column (9)	Column (11)
Treatment	Column (1)	----	.4018	.0000***	.0110**	.0000***	.0000***
	Column (3)	----	----	.0000***	.0001***	.0000***	.0000***
	Column (5)	----	----	----	.0000***	.0004***	.2652
	Column (7)	----	----	----	----	.0000***	.0000***
	Column (9)	----	----	----	----	----	.0465**
		Treatment					
		Column (2)	Column (4)	Column (6)	Column (8)	Column (10)	Column (12)
Treatment	Column (2)	----	.2951	.0000***	.0196**	.0000***	.0000***
	Column (4)	----	----	.0000***	.0001***	.0000***	.0000***
	Column (6)	----	----	----	.0000***	.0005***	.2709
	Column (8)	----	----	----	----	.0000***	.0000***
	Column (10)	----	----	----	----	----	.0466**

Note: Two-sided Chi-squared tests. Numbers are *p*-values. For these tests, we first estimated pooled regressions of the relevant pair of columns to obtain the coefficient estimates, then performed Chi-squared tests.

*, ** and *** indicate significance at the 0.10 level, at the 0.05 level and at the .01 level, respectively.

(II) Dependent Variable: Subject's average contribution for previously *recorded* periods as of period t (supplementing the regression analysis in (I) above)

Independent Variable	50%, 1.3		50%, 1.7	
	(1)	(2)	(3)	(4)
(a) Subject's period t partner's average past contribution for past periods for which information is recorded	0.48*** (0.031)	0.46** (0.031)	0.69*** (0.040)	0.63**** (0.038)
Constant	----	2.61*** (0.70)	----	5.15*** (0.58)
# of Observations	1166	1166	1530	1530
Log Likelihood	-2151.8	-2145.9	-2327.9	-2302.0
Chi-squared	234.5	225.0	294.1	275.8
Prob > Chi-squared	.0000	.0000	.0000	.0000

Notes: Individual random effect Tobit regressions. Only observations for which at least one past contribution has been recorded for both self and partner, so that variable (a) can be calculated are used. The numbers of left- (right-) censored observations are 209(224) in columns (1) and (2), 63(780) in columns (3) and (4).

*, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(III) Between Subjects' own and their partners' *recorded/perceived* average past contributions (supplementing the analysis in (I)).

(IIIa) Dependent Variable: Subject's recorded/perceived average past contribution in Period t

Remark: See the description included in Table B.5 concerning the method to calculate the recorded/perceived past average contribution.

Independent Variable	Factor of 1.3				Factor of 1.7							
	0% info (1)	0% info (2)	50% info (3)	50% info (4)	100% info (5)	100% info (6)	0% info (7)	0% info (8)	50% info (9)	50% info (10)	100% info (11)	100% info (12)
(a) Subject's period t partner's recorded/perceived average past contribution	0.23*** (0.046)	0.22*** (0.050)	0.41*** (0.032)	0.39*** (0.031)	0.57*** (0.022)	0.55*** (0.022)	0.32*** (0.056)	0.27*** (0.054)	0.94*** (0.032)	0.87*** (0.030)	0.51*** (0.036)	0.47*** (0.034)
Constant	----	0.055 (0.78)	----	3.20*** (0.61)	----	2.59*** (0.30)	----	3.62*** (0.65)	----	2.77*** (0.41)	----	6.18*** (0.54)
# of Observations	1214	1214	1430	1430	1440	1440	1186	1186	1950	1950	1440	1440
Log likelihood	-2139.7	-2139.7	-2843.2	-2832.5	-2936.8	-2914.7	-2433.0	-2420.5	-3260.1	-3241.9	-1914.5	-1881.8
F	25.2	20.0	163.8	153.4	656.7	649.6	32.9	24.7	873.8	824.8	202.0	194.5
Prob > F	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000	.0000

Notes: Individual random effect Tobit regressions. The numbers of left- (right-) censored observations is 537 (20) in columns (1) and (2), 241 (280) in columns (3) and (4), 58 (154) in columns (5) and (6), 289 (271) in columns (7) and (8), 77 (913) in columns (9) and (10), 25 (789) in columns (11) and (12). Estimates in columns (5), (6), (11) and (12) are the same as those in Panel (Ia) above. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(IIIb) Tests for the equality of coefficients on variable (a) included in the Table (IIIa)

		Treatment					
		Column (1)	Column (3)	Column (5)	Column (7)	Column (9)	Column (11)
Treatment	Column (1)	----	.4018	.0000***	.0110**	.0000***	.0000***
	Column (3)	----	----	.0000***	.0001***	.0000***	.0000***
	Column (5)	----	----	----	.0000***	.0004***	.2652
	Column (7)	----	----	----	----	.0000***	.0000***
	Column (9)	----	----	----	----	----	.0465**
		Treatment					
		Column (2)	Column (4)	Column (6)	Column (8)	Column (10)	Column (12)
Treatment	Column (2)	----	.0006***	.0000***	.6255	.0000***	.0000***
	Column (4)	----	----	.0000***	.0001***	.0000***	.0000***
	Column (6)	----	----	----	.0000***	.0000***	.0838*
	Column (8)	----	----	----	----	.0000***	.0000***
	Column (10)	----	----	----	----	----	.0008**

Note: Two-sided Chi-squared tests. Numbers are *p*-values. For these tests, For these tests, we first estimated pooled regressions of the relevant pair of columns to obtain the coefficient estimates, then performed then performed Chi-squared tests.

*, ** and *** indicate significance at the 0.10 level, at the 0.05 level and at the .01 level, respectively.

Table B.7. Average Contribution by Treatment, and Related Non-Parametric Test Results

(1) Average contribution by phase

		Phase 1		Phase 2		Phase 3		Phase 4	
		1 st period	Average	1 st period	Average	1 st period	Average	1 st period	Average
Treatment	I. Factor of 1.3								
	0% info	3.73	2.58	2.08	1.50	1.68	1.27	1.10	1.31
	50% info	4.85	3.60	5.38	3.31	5.90	3.75	6.13	3.62
	100% info	4.88	2.92	6.45	3.63	7.90	4.19	8.28	4.68
	II. Factor of 1.7								
	0% info	6.28	5.35	4.88	4.55	5.60	4.25	5.05	4.21
	50% info	7.02	5.86	8.22	6.34	8.76	7.15	9.02	7.12
	100% info	7.70	7.14	8.50	7.33	9.03	7.52	9.08	7.53

(2) Did contributions rise over the phases?

(2-1) Set-level Wilcoxon signed ranks tests

		Comparison of the <u>average</u> contribution by phase				Comparison of the <u>first</u> periods within phase			
		Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4	Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4
Treatment	I. Factor of 1.3								
	0% info	.0679*	.1441	.7150	.0679*	.0679*	.1441	.0947*	.0679*
	50% info	.1441	.4652	.4652	1.000	.4615	.7150	.3573	.0679*
	100% info	.1441	.2733	.4652	.0679*	.0679*	.0679*	.2733	.0679*
	II. Factor of 1.7								
	0% info	.1441	.4652	.7150	.2733	.4652	.4652	.0947*	.2733
	50% info	.1380	.0782*	.6858	.2249	.1380	.0782*	.6858	.0431**
	100% info	.5775	.7150	1.0000	.7150	.1441	.1615	.8415	.1441

Notes: Numbers are p -value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

	Treatment	Comparison of the average contribution during periods 1 – 5 by phase				Comparison of the average contribution during periods 1 – 7 by phase			
		Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4	Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4
	I. Factor of 1.3								
	0% info	.7150	.7150	.0679*	.1441	.7150	1.0000	.1441	.1441
	50% info	.0679*	.4652	.7127	.4652	.4652	.2733	1.0000	.7150
	100% info	.0679*	.2733	.2733	.0679*	.0679*	.2733	.4652	.0679*
	II. Factor of 1.7								
	0% info	.2733	.4652	.0679*	.4652	.1441	.4652	.4652	.2733
	50% info	.1380	.1380	.0796*	.0431**	.0431**	.0431**	.5002	.0431**
	100% info	.0679*	.5775	.5775	.0679*	.1441	.5775	.0947*	.0679*

Notes: Numbers are p -value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(2-2) Individual-level Wilcoxon signed ranks tests

	Treatment	Comparison of the <u>average</u> contribution by phase				Comparison of the <u>first</u> periods within phase			
		Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4	Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4
	I. Factor of 1.3								
	0% info	.0001***	.0739**	.7044	.0005***	.0007***	.0056***	.0028***	.0000***
	50% info	.3054	.1120	.4319	.7983	.1212	.0852*	.3721	.0660*
	100% info	.0813*	.0222**	.2484	.0000***	.0094***	.0003***	.0041***	.0000***
	II. Factor of 1.7								
	0% info	.0974*	.1635	.5869	.0016***	.1072	.6050	.2950	.0274**
	50% info	.1269	.0218**	.5172	.0029***	.0147**	.0165**	.0167**	.0002***
	100% info	.8983	.7707	.3169	.5674	.0741*	.0155**	.2247	.0023***

Notes: Numbers are p -value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

		Comparison of the average contribution during periods 1 – 5 by phase				Comparison of the average contribution during periods 1 – 7 by phase			
		Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4	Phase 1 vs. 2	Phase 2 vs. 3	Phase 3 vs. 4	Phase 1 vs. 4
Treatment	I. Factor of 1.3								
	0% info	.0001***	.0435**	.3095	.0001***	.0000***	.0380**	.4026	.0001***
	50% info	.6518	.0672*	.5725	.2462	.5496	.0612*	.8219	.2447
	100% info	.0094***	.0141**	.0268**	.0000***	.0274**	.0180**	.0406**	.0000***
	II. Factor of 1.7								
	0% info	.3318	.1554	.6871	.1073	.1027	.0703*	.5167	.0242**
	50% info	.0081***	.0056***	.0939*	.0000***	.0147**	.0034***	.5432	.0000***
	100% info	.0062***	.0862*	.0546*	.0001***	.0359**	.2227	.0380**	.0001***

Notes: Numbers are *p*-value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results:

In the 0%, 1.3 treatment, the per-phase average contribution decreased over the phases. Also, the first contributions decreased over the phases (periods 1, 11, 21) in this treatment. The decreasing trends are sometimes significant at the 10% level according to set-level Wilcoxon signed ranks tests, but are significant at the 5% or 1% level according to individual-level Wilcoxon signed ranks tests.

In the 100%, 1.3 treatment, by contrast, the first contributions increased over the phases. The increase in the first contribution, based on a comparison between those in phase 1 and phase 4, is significant at the 10% level according to a set-level Wilcoxon signed ranks test, and at the 1% level according to an individual-level Wilcoxon signed ranks test.

In the 1.7 treatments, with the 50% or 100% condition, the first contributions rose over the phases. The increase in the contribution, based on a comparison between phase 1 and phase 4, is significant at the 5% level under the 50% condition according to set-level Wilcoxon signed ranks test, and at the 1% level under each condition according to individual-level Wilcoxon signed ranks test.

(3) Did contributions rise or decline within phases?

(3-1) Average Contributions in Periods 1 to 4 and in Periods 5 to 8

		Phase 1		Phase 2		Phase 3		Phase 4	
		Pds 1–4	Pds 5–8	Pds 1–4	Pds 5–8	Pds 1–4	Pds 5–8	Pds 1–4	Pds 5–8
Treatment	I. Factor of 1.3								
	0% info	3.457	2.250	1.975	1.413	1.594	1.213	1.263	1.413
	50% info	4.656	3.313	4.506	3.303	5.050	3.644	5.169	3.413
	100% info	3.963	2.600	5.306	3.075	6.388	3.431	7.081	4.075
	II. Factor of 1.7								
	0% info	6.119	5.25	5.15	4.525	4.913	4.131	5.088	4.169
	50% info	6.615	5.995	7.62	6.365	8.68	7.54	8.945	7.61
	100% info	7.444	7.481	8.244	7.763	8.781	8.006	9.156	8.125

(3-2) Wilcoxon signed ranks tests: Average contributions in Periods 1–4 versus Period 5–8

		Set-level test				Individual-level test			
		Phase 1	Phase 2	Phase 3	Phase 4	Phase 1	Phase 2	Phase 3	Phase 4
Treatment	I. Factor of 1.3								
	0% info	.0679*	.1441	.2733	.4652	.0011***	.0331**	.1731	.4795
	50% info	.0679*	.0679*	.0679*	.0679*	.0132**	.0007***	.0011***	.0001***
	100% info	.0679*	.0679*	.0679*	.0679*	.0000***	.0000***	.0000***	.0000***
	II. Factor of 1.7								
	0% info	.0679*	.1441	.1441	.0679*	.0497**	.3619	.0347**	.0872*
	50% info	.2249	.0431**	.0431**	.0431**	.2333	.0001***	.0098***	.0001***
	100% info	.7150	.0947*	.0679*	.0679*	.4462	.1060	.0142**	.0032***

Notes: Numbers are *p*-value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results:

In both 1.3 and 1.7 treatments, regardless of the difference in the information conditions, in most comparisons, the average contributions in periods 5–8 are significantly lower than those in periods 1–4 at the 10% or sometimes at the 5% level, according to set-level Wilcoxon signed ranks tests, and often at the 1% level according to individual-level Wilcoxon signed ranks tests.

(4) The difference in average contribution between the treatments: “Set-level” Mann Whitney test results

(4a) Phase 1							(4b) Phase 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.3865	.8845	.0209**	.0143**	.0209**	----	.1489	.0433**	.0209**	.0143**	.0209**
50% info	----	----	.5637	.03865**	.05**	.0833*	----	----	1.000	.3865	.0275**	.0833*
100% info	----	----	----	.0833*	.0275**	.0433**	----	----	----	.3865	.0275**	.0433**
II. Factor of 1.7												
0% info	----	----	----	----	.4624	.1489	----	----	----	----	.1416	.0833*
50% info	----	----	----	----	----	.1416	----	----	----	----	----	.4624
100% info	----	----	----	----	----	----	----	----	----	----	----	----
(4c) Phase 3							(4d) Phase 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0833*	.0833*	.0833*	.0143**	.0209**	----	.1489	.0209**	.1489	.0143**	.0209**
50% info	----	----	1.000	.5637	.0275**	.0433**	----	----	.5637	.5637	.0275**	.0209**
100% info	----	----	----	.7728	.0275**	.0433*	----	----	----	.7728	.0864*	.0833*
II. Factor of 1.7												
0% info	----	----	----	----	.500	.0833*	----	----	----	----	.0864*	.0833*
50% info	----	----	----	----	----	.8065	----	----	----	----	----	.6242
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Numbers are *p*-value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(4e) Period 1 (First period in Phase 1)

(4f) Period 11 (First period in Phase 2)

	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.3065	.0421**	.0204**	.0139**	.0202**	----	.0209**	.0202**	.0294**	.0143**	.0209**
50% info	----	----	1.000	.1102	.0143**	.0591*	----	----	.3836	.7728	.5000	.0833*
100% info	----	----	----	.1489	.1430	.1489	----	----	----	.3065	.2129	.1465
II. Factor of 1.7												
0% info	----	----	----	----	.6242	.1489	----	----	----	----	.0500**	.0433**
50% info	----	----	----	----	----	.2207	----	----	----	----	----	.6242
100% info	----	----	----	----	----	----	----	----	----	----	----	----

(4g) Period 21 (First period in Phase 3)

(4h) Period 31 (First period in Phase 4)

	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0194**	.0202**	.0202**	.0135*	.0202**	----	.0209**	.0209**	.0209**	.0143**	.0209**
50% info	----	----	.0814*	.8839	.0194**	.0202**	----	----	.0433**	.6631	.0143**	.0209**
100% info	----	----	----	.3865	.0639*	.0833*	----	----	----	.1489	.1761	.1913
II. Factor of 1.7												
0% info	----	----	----	----	.0491**	.0433**	----	----	----	----	.0500**	.0433**
50% info	----	----	----	----	----	.5316	----	----	----	----	----	.8065
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Set-level Mann-Whitney test. Numbers are *p*-value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results:

The average contribution in the 0%, 1.7 treatment is significantly higher than that in the 0%, 1.3 treatment in Phases 1 to Phase 3 at the 5% or at the 10% level, but the difference is not significant in Phase 4. The average contributions in the 50%, 1.7 treatment and in the 100%, 1.7 treatment are significantly higher than those in the 50%, 1.3 and 100%, 1.3 treatment in each phase, often at the 5% level and sometimes as the 10% level.

In the 1.3 treatments, the average contribution is significantly higher with the 100% condition than that with the 0% condition at the 5% level in Phases 2 and 4, and at the 10% level in Phase 3.

In the 1.7 treatments, the average contribution is significantly higher with the 100% condition than that with the 0% condition in Phases 2, 3, and 4 at the 10% level. In Phase 4, the average contribution is also significantly higher with the 50% condition than that with the 0% condition at the 10% level.

The first contribution is significantly higher in the 100%, 1.3 treatment and in the 50%, 1.3 treatment than in the 0%, 1.3 treatment, at the 5% level in Phases 2, 3 and 4.

The first contribution is significantly higher in the 100%, 1.7 treatment and in the 50%, 1.7 treatment than in the 0%, 1.7 treatment, at the 5% level in Phases 2, 3 and 4.

(5) The difference in average contribution between the treatments: “Individual-level” Mann Whitney test results

(5a) Phase 1							(5b) Phase 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0787*	.4640	.0007***	.0000***	.0000***	----	.0127**	.0004***	.0003***	.0000***	.0000***
50% info	----	----	.1269	.0298**	.0007***	.0000***	----	----	.3861	.2031	.0000***	.0000***
100% info	----	----	----	.0023***	.0000***	.0000***	----	----	----	.3755	.0000***	.0000***
II. Factor of 1.7												
0% info	----	----	----	----	.6315	.0336**	----	----	----	----	.0001***	.0000***
50% info	----	----	----	----	----	.0271**	----	----	----	----	----	.0898*
100% info	----	----	----	----	----	----	----	----	----	----	----	----
(5c) Phase 3							(5d) Phase 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0000***	.0000***	.0002***	.0000***	.0000***	----	.0001***	.0000***	.0004***	.0000***	.0000***
50% info	----	----	.2831	.6157	.0000***	.0000***	----	----	.0748*	.6292	.0000***	.0000***
100% info	----	----	----	.9118	.0000***	.0000***	----	----	----	.4464	.0000***	.0000***
II. Factor of 1.7												
0% info	----	----	----	----	.0001***	.0000***	----	----	----	----	.0002***	.0001***
50% info	----	----	----	----	----	.2311	----	----	----	----	----	.3341
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Individual-level Mann-Whitney test. Numbers are *p*-value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(5e) Period 1 (First period in Phase 1)							(5f) Period 11 (First period in Phase 2)					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.2188	.1356	.0074***	.0000***	.0000***	----	.0004***	.0000***	.0152**	.0000***	.0000***
50% info	----	----	.9532	.1229	.0123**	.0018***	----	----	.2831	.6731	.0004***	.0001***
100% info	----	----	----	.1356	.0000***	.0000***	----	----	----	.1367	.0016***	.0004***
II. Factor of 1.7												
0% info	----	----	----	----	.6135	.2612	----	----	----	----	.0004***	.0002***
50% info	----	----	----	----	----	.3468	----	----	----	----	----	.3848
100% info	----	----	----	----	----	----	----	----	----	----	----	----
(5g) Period 21 (First period in Phase 3)							(5h) Period 31 (First period in Phase 4)					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0000***	.0000***	.0001***	.0000***	.0000***	----	.0000***	.0000***	.0000***	.0000***	.0000***
50% info	----	----	.0437**	.8544	.0000***	.0000***	----	----	.0398**	.2498	.0001***	.0000***
100% info	----	----	----	.0490**	.0019***	.0002***	----	----	----	.0008***	.0138**	.0016***
II. Factor of 1.7												
0% info	----	----	----	----	.0001***	.0000***	----	----	----	----	.0000***	.0000***
50% info	----	----	----	----	----	.3626	----	----	----	----	----	.3176
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Individual-level Mann-Whitney test. Numbers are p -value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Table B.8. Test Results for the Equality of the Coefficients of Variables (a) through (e) across the treatments in Table 4 (supplementing the regression analysis in Table 4 of “Play it Again”)

(I) For equality of the coefficients of variable (a):

		Treatment					
		0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
Treatment	0% 1.3	----	.0396***	.0000***	.9529	.0000***	.0002***
	50% 1.3	----	----	.0002***	.0343**	.0021***	.0884*
	100% 1.3	----	----	----	.0000***	.4122	.0457**
	0% 1.7	----	----	----	----	.0000***	.0001***
	50% 1.7	----	----	----	----	----	.1977

Notes: Two-sided F test. Numbers in the panel are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed F tests.

(II) For equality of the coefficients of variable (b):

		Treatment					
		0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
Treatment	0% 1.3	----	.0055***	.0000***	.0969*	.0000***	.0000***
	50% 1.3	----	----	.0000***	.0000**	.0000***	.0275**
	100% 1.3	----	----	----	.0000***	.8580	.0000***
	0% 1.7	----	----	----	----	.0000***	.0000***
	50% 1.7	----	----	----	----	----	.0000***

Notes: Two-sided F test. Numbers in the panel are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed F tests.

(III) For equality of the coefficients of variable (c):

		Treatment					
		0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
Treatment	0% 1.3	----	.0029***	.0000***	.1285	.0000***	.0000***
	50% 1.3	----	----	.0000***	.0000**	.0000***	.0571*
	100% 1.3	----	----	----	.0000***	.4495	.0002***
	0% 1.7	----	----	----	----	.0000***	.0000***
	50% 1.7	----	----	----	----	----	.0000***

Notes: Two-sided F test. Numbers in the panel are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed F tests.

(IV) For equality of the coefficients of variable (d):

		Treatment					
		0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
Treatment	0% 1.3	----	.0000***	.0000***	.4057	.0559*	.8078
	50% 1.3	----	----	.3562	.0004***	.0074***	.0000***
	100% 1.3	----	----	----	.0000***	.0003***	.0000***
	0% 1.7	----	----	----	----	.2998	.5563
	50% 1.7	----	----	----	----	----	.0977**

Notes: Two-sided F test. Numbers in the panel are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed F tests.

(V) For equality of the coefficients of variable (e):

		Treatment					
		0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
Treatment	0% 1.3	----	.0000***	.0000***	.0715*	.0000***	.0000***
	50% 1.3	----	----	.0001***	.0000***	.6886	.3057
	100% 1.3	----	----	----	.0000***	.0001***	.0000***
	0% 1.7	----	----	----	----	.0000***	.0000***
	50% 1.7	----	----	----	----	----	.1389

Notes: Two-sided F test. Numbers in the panel are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively. For this test, we first jointly estimated the coefficients of all variables using a pooled regression, and then performed F tests.

Table B.9. Trends of Average Contributions by Treatment: Regression Analyses (supplementing the regression analysis in Table 4 of “Play it Again”)

Case 1: Dependent variable: Set average contributions during periods 1 to 10 of each phase.

Independent Variable	Group account efficiency					
	0% info	Factor of 1.3		Factor of 1.7		100% info
	(1)	50% info	100% info	0% info	50% info	100% info
	(1)	(1)	(2)	(1)	(3)	(4)
Phase variable {= 1, 2, 3, 4}	-0.40*** (0.10)	-.077 (0.098)	0.59*** (0.14)	-0.61*** (0.12)	0.69*** (0.12)	0.13 (0.15)
Constant	2.68*** (0.27)	3.06*** (0.27)	2.80*** (0.38)	4.48*** (0.34)	4.62*** (0.37)	7.15*** (0.40)
# of Observations	16	16	16	16	20	16
F	16.44	0.62	18.66	24.27	26.45	0.84
Prob > F	.0019	.4478	.0012	.0005	.0001	.3790
R-Squared	.3917	.0054	.2771	.3876	.3065	.0100

Notes: Set fixed effects linear regressions. The dependent variables are set-level average contribution during periods 1 to 7. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Case 2: Dependent variable: Set average contributions during periods 1 to 7 of each phase.

Independent Variable	Group account efficiency					
	0% info	Factor of 1.3		Factor of 1.7		100% info
	(1)	50% info	100% info	0% info	50% info	100% info
	(1)	(1)	(2)	(1)	(3)	(4)
Phase variable {= 1, 2, 3, 4}	-0.54*** (0.11)	0.071 (0.11)	0.90*** (0.16)	-0.69*** (0.16)	0.95*** (0.12)	0.46** (0.15)
Constant	3.20 (0.30)	3.4*** (0.30)	3.13*** (0.44)	4.99*** (0.43)	4.90*** (0.33)	7.11*** (0.41)
# of Observations	16	16	16	16	20	16
F	24.03	0.41	31.27	18.98	59.93	9.31
Prob > F	.0005	.5354	.0002	.0011	.0000	.0110
R-Squared	.5223	.0032	.4790	.3845	.4694	.1078

Notes: Set fixed effects linear regressions. The dependent variables are set-level average contribution during periods 1 to 7 of each phase. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Table B.10. Non-parametric Test Results for the difference of average last period that subjects contribute a positive amount, across phases or across treatments (supplementing the analysis in Table 5 of “Play it Again”)

(1) Did the last period that subjects contribute a positive amount become earlier and earlier over the phases? (Test of earlier decay feature)

(1-1) Set-level Wilcoxon-signed ranks tests

	Comparison of the <u>average</u> last period in which a subject contributed a positive amount, by treatment					
	Phase 1 vs. 2	Phase 1 vs. 3	Phase 1 vs. 4	Phase 2 vs. 3	Phase 2 vs. 4	Phase 3 vs. 4
Treatment	I. Factor of 1.3					
	0% info	.1441	.0679*	.0656*	.1441	.2733
	50% info	.2733	.0947*	.0679*	.2733	.0656*
	100% info	1.000	.1441	.4652	.7150	.0679*
	II. Factor of 1.7					
	0% info	.0947*	.0679*	.0679*	.1975	.0679*
	50% info	.0422**	.2249	.0796*	.2249	.5002
	100% info	.0679*	.0656*	.0588*	1.000	.0947*
						.0656*

Notes: Numbers are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(1-2) Individual-level Wilcoxon-signed ranks tests

	Comparison of the last periods in which a subject selected a positive amount by treatment					
	Phase 1 vs. 2	Phase 1 vs. 3	Phase 1 vs. 4	Phase 2 vs. 3	Phase 2 vs. 4	Phase 3 vs. 4
Treatment	I. Factor of 1.3					
	0% info	.0013***	.0001***	.0004***	.0442**	.0172**
	50% info	.0932*	.0015***	.0002***	.0292**	.0112**
	100% info	.3500	.1023	.0206**	.1296	.0205**
	II. Factor of 1.7					
	0% info	.1951	.0374**	.0001***	.3654	.0016***
	50% info	.0291**	.0314**	.0005***	.3275	.1708
	100% info	.0509*	.0005***	.0000***	.0726*	.0219**
						.0057***

Notes: Numbers are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results: In the 1.7 treatments, the average last period in which subjects contributed a positive amount became earlier in Phase 2 compared with Phase 1, and also in Phase 4 compared with Phase 3; the differences are significant at the 10% level (in Phase 2 at the 5% level for the 50%, 1.7 treatment) according to set-level Wilcoxon signed ranks tests. Results are similar in Phase 2 but are stronger in Phase 4 when individual-level Wilcoxon signed ranks tests are used.

In the 0%, 1.3 treatment and the 50%, 1.3 treatment, the average last periods in which subjects contributed a positive amount became earlier in Phase 2 compared with Phase 1, and also in Phase 3 compared with Phase 2; the differences are significant according to individual-level Wilcoxon signed ranks tests. The average last period in which subjects contributed positive amounts in the 0%, 1.3 treatment and 50%, 1.3 treatment are significantly earlier in Phase 4 compared with Phase 1 at the 10% level according to a set-level Wilcoxon signed ranks test.

(2) Between-treatment difference in the last period in which a subject contributed a positive amount: Set-level Mann Whitney test results

	(2a) Phase 1						(2b) Phase 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% Info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.2482	.2482	.4678	.0143**	.0202**	----	.1102	.0833*	.3094	.0275**	.0209**
50% info	----	----	1.000	.4678	.3893	.0421*	----	----	.7728	.8845	.1416	.0433**
100% info	----	----	----	.4678	.3893	.0759*	----	----	----	.5637	.3231	.0591*
II. Factor of 1.7												
0% info	----	----	----	----	.0143**	.0202**	----	----	----	----	.1099	.0433**
50% info	----	----	----	----	----	.0639*	----	----	----	----	----	.1761
100% info	----	----	----	----	----	----	----	----	----	----	----	----
	(2c) Phase 3						(2d) Phase 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% Info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.2454	.1489	.0833*	.0139**	.0209**	----	.1102	.0433**	.2482	.0143**	.0209**
50% info	----	----	.7715	.7715	.1383	.1465	----	----	.7728	.7728	.0500**	.0209**
100% info	----	----	----	.7728	.0851*	.0294**	----	----	----	.7728	.2683	.1102
II. Factor of 1.7												
0% info	----	----	----	----	.0139**	.0209**	----	----	----	----	.0500**	.0209**
50% info	----	----	----	----	----	.1743	----	----	----	----	----	.2683
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Numbers are *p*-values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(3) Between-treatment difference in the last period in which a subject contributed a positive amount: Individual-level Mann Whitney test results

	(3a) Phase 1						(3b) Phase 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% Info	50% info	100% info	0% info	50% Info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.3867	.5110	.4712	.0192**	.0010***	----	.2620	.3177	.2385	.0186**	.0012**
50% info	----	----	.8003	.9602	.1469**	.0059***	----	----	.7474	.5690	.1084	.0027***
100% info	----	----	----	.8383	.0871*	.0031***	----	----	----	.6155	.0248**	.0002***
II. Factor of 1.7												
0% info	----	----	----	----	.1881	.0157**	----	----	----	----	.1858	.0371**
50% info	----	----	----	----	----	.1187	----	----	----	----	----	.1595
100% info	----	----	----	----	----	----	----	----	----	----	----	----
	(3c) Phase 3						(3d) Phase 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% Info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0152**	.0338**	.0371**	.0002***	.0001***	----	.0749*	.0165**	.0871*	.0002***	.0001***
50% info	----	----	.5145	.3145	.0016***	.0003***	----	----	.3745	.5732	.0005***	.0000***
100% info	----	----	----	.4102	.0018***	.0001***	----	----	----	.9806	.0037***	.0001***
II. Factor of 1.7												
0% info	----	----	----	----	.2367	.1168	----	----	----	----	.0647*	.0142**
50% info	----	----	----	----	----	.3459	----	----	----	----	----	.2396
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Numbers are *p*-values (2-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results:

[Comparison across the different information conditions:]

In the 1.3 treatments, the average last period in which subjects contributed a positive amount is significantly earlier in the 0% condition than in the 100% condition at the 10% level in Phase 2, and at the 5% level in Phase 4, according to set-level Mann-Whitney tests.

In the 1.7 treatments, the average last period in which subjects contributed a positive amount is significantly earlier in the 0% condition than in the 50% or in the 100% condition in each phase (except the comparison between the 0% and 50% conditions in Phase 2) according to set-level Mann-Whitney tests.

[Comparison between the different factors, 1.3 versus 1.7:]

In the 0% condition, the average last period is significantly later with Factor 1.7 than with Factor 1.3 at the 10% level in Phase 3 according to a set-level Mann-Whitney test. In the 50% condition, the average last period is significantly later with Factor 1.7 than with Factor 1.3 at the 5% level in Phase 4 according to a set-level Mann-Whitney test. In the 100% info condition, the average last period is significantly later with Factor 1.7 than with Factor 1.3, at the 10% level in Phases 1 and 2, and at the 5% level in Phase 3, according to set-level Mann-Whitney tests. Results are more strongly significant if we use individual-level Mann-Whitney tests.

Table B.11. End-effects Behavior by Phase and Treatment. In this table, we examine how subject i made his or her contribution decision in the tenth period of a given phase if subject i has always contributed 10 so far in the phase and subject j (i 's partner in that period) has also only contributed 10 so far in that phase, inasmuch as subject i can know.

This analysis is a supplementary analysis for Tables 5 of “Play it Again” and Table B.10 of this Appendix.

Although we found, as indicated by Figure 2 of “Play it Again,” that the majority of subjects chose 0 in the tenth period of each phase other than Phase 1 of the 100%, 1.7 treatment, and that the last periods in which subjects contributed positive amounts to their joint account became earlier over the phases, it is still interesting to see how subject i was playing in the last period of a phase under the following circumstance: subject i has always contributed 10 so far and j (i 's partner in the tenth period) has also only contributed 10 so far, at least inasmuch as subject i can know.⁶

By studying these cases, we can examine: (a) whether anyone has enough faith in their counterparts to be conditionally cooperative, and is himself conditionally cooperative, in that he contributes even in the last period, and (b) whether or not a “personal” connection between subject i and subject j (that is, having interacted together for some number of periods during the current phase) influences that faith (or alternatively, simply the desire to avoid being the only one who defects).

We counted eligible cases only in the 50% and the 100% treatments, since cooperation collapsed quickly in the 0% treatments.

It turned out that the eligible cases are relatively few in our sample. We found 36 cases in the 50% treatments and 3 cases in the 100% treatments. We see that out of the 36 and the 3 cases, a substantial number of cases (17 cases out of the 39 cases), or subjects (13 out of 23 subjects) also contributed 10 in one of the tenth periods. This suggests that nearly half of high contributors were genuine conditional cooperators in the sense that they did not wish to contribute zero when there seemed to them to be a real chance that their counterpart would contribute a positive amount (in our terms, that their counterpart was a genuine conditional cooperator who would not automatically defect because the last period of the phase had arrived). As argued in the paper, this kind of estimate should be viewed as “lower bound” in nature since some of the remaining 10 subjects may also have been conditional cooperators but had less optimistic beliefs about their counterparts. Detailed results are summarized on the next pages.

⁶ In the 50% treatments, this condition reduces to the conditions that (1) Subject j has always contributed 10 when he or she was matched with subject i so far; (2) Subject j 's recorded average past contribution as of the tenth period of the phase is 10.

(1) 1.3 treatments

	Information Condition							
	50% info				100% info			
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 1	Phase 2	Phase 3	Phase 4
# of all eligible cases	0	0	2	1	0	0	0	1
Contribution decision in Period 10								
(a) 10	N/A	N/A	2 (100%)	1 (100%)	N/A	N/A	N/A	1 (100%)
(b) Between 5 and 9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(c) Between 1 and 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(d) 0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes: Numbers in the table are the numbers of the eligible cases, and numbers in parenthesis are the percentages of those who contributed either 10 (in row (a)), between 5 and 9 (in row (b)), between 1 and 4 (in row (c)) and 0 (in row (d)), out of all of the eligible cases.

(2) 1.7 treatments

	Information Condition							
	50% info				100% info			
	Phase 1	Phase 2	Phase 3	Phase 4	Phase 1	Phase 2	Phase 3	Phase 4
# of all eligible cases	0	8	13	12	0	1	0	1
Contribution decision in Period 10								
(a) 10	N/A	5 (62.5%)	4 (30.8%)	3 (25%)	N/A	1 (100%)	N/A	N/A
(b) Between 5 and 9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(c) Between 1 and 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
(d) 0	N/A	3 (37.5%)	9 (69.2%)	9 (75%)	N/A	N/A	N/A	1 (100%)

Notes: Numbers in the table are the numbers of the eligible cases, and numbers in parenthesis are the percentages of those who contributed either 10 (in row (a)), between 5 and 9 (in row (b)), between 1 and 4 (in row (c)) and 0 (in row (d)), out of all of the eligible cases.

Table B.12. Explaining end-of –phase (period 10, 20, etc.) contribution decisions by negative experience with past end-of-phase partners’ contribution decisions
(supplementing the analysis in Table 5 of “Play it Again,” and Tables B.10 and B.11 in the Appendix)

Dependent Variable: Subject i ’s contribution decision in period $t \in \{10, 20, 30, 40\}$

Independent Variable	50%, 1.7	100%, 1.7
Phase 2 dummy {= 1 if Phase =2; 0 otherwise }	-3.41 (4.06)	-4.19 (3.99)
Phase 3 dummy {= 1 if Phase =3; 0 otherwise }	-9.86* (5.32)	-10.4** (4.98)
Phase 4 dummy {= 1 if Phase =4; 0 otherwise }	-15.2** (5.98)	-15.5*** (5.83)
Average recorded past contribution of the counterpart ¹	2.03*** (0.64)	1.35 (0.84)
Maximum deviation of a past counterpart’s contribution in period $t \in \{8, 9, 10\}$ from that past counterpart’s (recorded) past average contribution ²	-0.88* (0.53)	-1.86*** (0.69)
Maximum deviation of a past counterpart’s contribution in period $t \in \{5, 6, 7\}$ from that past counterpart’s (recorded) past average contribution ³	0.53 (0.55)	1.10 (0.88)
Constant	-14.7*** (5.66)	-5.96 (7.82)
# of Observations	200	160
Log likelihood	-213.7	-170.4
Wald Chi-squared	18.68	19.21
Prob > Wald Chi-squared	.0047	.0038

Notes: Random Effects Tobit regressions. The numbers of left-(right-) censored observations are 139(30) in column (1) and 103(33) in column (2).

¹ See Table B.5 as for the method of calculating this variable in the 50%, 1.7 treatment.

² By deviation, we refer to the drop in a counterpart j ’s contribution in a late period (8, 9 or 10) relative to what a naïve subject i would have expected j to contribute using j ’s past average contribution (in 50% treatments, recorded past average contribution) as the estimate.

³ Same as previous variable except refers to earlier periods (5, 6 or 7) of a phase.

*, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Table B.13. The Distribution of the Number of Periods for Which Specific Pairing (i, j) was Realized by Phase and Treatment

(1) Phase 1						
# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	38.5%	28.0%	30.5%	29.5%	29.2%	30.0%
2	15.5%	15.0%	13.5%	14.0%	14.8%	11.0%
3	6.5%	5.0%	7.0%	5.5%	6.4%	6.0%
4	2.0%	4.0%	2.5%	2.5%	2.8%	3.5%
5	0.0%	1.0%	1.0%	0.0%	1.2%	0.5%
6	0.5%	1.0%	0.5%	1.5%	0.8%	0.5%
7	0.0%	0.0%	0.5%	1.0%	0.0%	1.5%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
(2) Phase 2						
# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	37.0%	29.5%	28.0%	25.0%	26.8%	29.5%
2	15.0%	13.5%	13.0%	14.0%	13.6%	11.5%
3	5.0%	7.0%	7.0%	5.0%	7.2%	5.5%
4	3.0%	3.5%	3.0%	2.0%	4.4%	2.0%
5	0.5%	1.0%	2.0%	2.0%	0.4%	1.5%
6	0.0%	0.0%	0.5%	1.0%	0.8%	2.0%
7	0.5%	0.5%	0.0%	0.5%	0.0%	0.5%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%
10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

(3) Phase 3

# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	36.5%	27.5%	25.5%	30.0%	27.6%	26.0%
2	18.0%	15.0%	18.5%	16.0%	14.4%	15.5%
3	4.5%	8.5%	7.5%	6.5%	8.0%	4.5%
4	2.0%	3.5%	2.5%	2.5%	1.6%	4.5%
5	0.5%	0.0%	1.0%	0.5%	1.2%	1.0%
6	0.0%	0.5%	0.0%	1.0%	1.2%	0.5%
7	0.5%	0.0%	0.0%	0.0%	0.0%	0.5%
8	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

(4) Phase 4

# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	32.5%	28.5%	25.0%	27.5%	28.0%	30.5%
2	12.0%	17.5%	18.5%	13.0%	12.4%	12.5%
3	6.0%	4.5%	7.0%	6.0%	8.8%	7.5%
4	0.5%	1.5%	3.0%	1.5%	2.4%	1.5%
5	1.5%	1.5%	1.0%	1.0%	0.8%	2.0%
6	1.5%	1.0%	0.0%	1.0%	1.2%	1.0%
7	1.0%	0.5%	0.0%	0.5%	0.0%	0.0%
8	0.0%	0.0%	0.0%	1.0%	0.0%	0.0%
9	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
10	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Note. The pairing of a subject i and a subject j is said to endure or be realized for a certain number of periods of a phase regardless of interruptions. For example, if i and j are paired in a phase's periods 1, 2, 5 and 7 only, their pairing was for 4 periods; if they were paired in periods 4, 5, 6 and 7 only, their pairing is also of 4 period duration.

Table B.14. Gains due to a Longer Partnership with a Specific Partner(1) Average earnings by # of periods for which specific subject i and j were matched, by phase and treatment

(a) Phase 1

# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	10.63	11.09	11.00	13.09	14.29	14.97
2	10.76	10.94	10.82	12.81	13.70	14.32
3	11.04	10.87	10.86	13.37	13.88	15.24
4	11.24	11.17	10.81	15.00	13.54	14.07
5	N/A	11.31	10.03	N/A	14.81	17.00
6	12.65	11.61	13.00	16.32	15.60	16.42
7	N/A	N/A	10.15	15.83	N/A	16.12
8	N/A	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A	N/A

(b) Phase 2

# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	10.37	11.01	10.99	12.68	14.01	14.51
2	10.25	10.90	10.93	11.72	14.69	15.58
3	10.34	10.71	11.04	11.40	14.11	15.15
4	11.68	11.20	11.38	14.11	14.58	16.19
5	10.15	11.52	12.19	15.12	11.26	14.48
6	N/A	N/A	10.08	15.98	16.42	16.42
7	11.80	12.79	N/A	17.00	N/A	10.15
8	N/A	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	17.00	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A	N/A

(c) Phase 3

# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	10.26	10.83	11.19	12.15	14.75	14.70
2	10.18	11.00	11.16	12.25	14.55	15.51
3	10.28	11.27	11.03	13.41	14.65	15.67
4	11.00	11.91	11.77	15.69	15.95	14.32
5	11.77	N/A	11.45	14.34	16.07	16.30
6	N/A	10.45	N/A	15.80	16.71	17.00
7	11.54	N/A	N/A	N/A	N/A	17.00
8	N/A	N/A	N/A	N/A	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A	N/A

(d) Phase 4

# of periods for which specific (i, j) has been paired	0% 1.3	50% 1.3	100% 1.3	0% 1.7	50% 1.7	100% 1.7
1	10.16	11.06	11.39	11.97	15.15	15.41
2	10.15	11.04	11.28	11.94	14.20	14.79
3	10.17	10.86	11.64	13.12	14.86	15.20
4	12.14	10.78	10.42	14.26	16.64	16.04
5	10.07	12.42	12.16	16.30	16.09	15.01
6	11.66	11.03	N/A	16.21	16.42	15.31
7	11.13	13.00	N/A	15.85	N/A	N/A
8	N/A	N/A	N/A	14.55	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A	N/A
10	N/A	N/A	N/A	N/A	N/A	N/A

(2) Test Results: Is a longer partnership beneficial for subjects?

Procedure – The method of testing the impact of a long partnership on earnings is:

Step 1: In each phase, for each subject, we identify (a) the partner with whom he or she played the most times in a given phase as well as (b) a partner with whom he or she played not more than 2 times and with whom the match was of the shortest duration for that subject in that phase.

Step 2: If the number of periods in (a) above is at least 4, and if a pair in (b) above also exists, we use the subject in this test.

Step 3: We calculate (c) that subject's average earnings in the longest relationship (in the pair (a)), and (d) his or her average earnings in the pairs in (b). If there are more than one pair in (c) (or (d)), we calculate the average of these.

Step 4: By using individual-level Wilcoxon signed ranks tests, we calculate whether the difference between (c) and (d) is significant or not.

	Treatment											
	0%, 1.3		50%, 1.3		100%, 1.3		0%, 1.7		50%, 1.7		100%, 1.7	
	# of obs.	<i>p</i> -value (two-sided)	# of obs.	<i>p</i> -value (two-sided)	# of obs.	<i>p</i> -value (two-sided)	# of obs.	<i>p</i> -value (two-sided)	# of obs.	<i>p</i> -value (two-sided)	# of obs.	<i>p</i> -value (two-sided)
Phase 1	10	.1394	24	.4237	18	.0741*	18	.0123**	21	.7151	24	.4154
Phase 2	16	.0299**	18	.7439	20	.1850	21	.0008***	24	.0741*	22	1.000
Phase 3	11	.0128**	12	.1167	14	.1981	15	.0782*	18	.1107	23	.6925
Phase 4	18	.0020***	17	.8870	15	.1914	18	.0346**	20	.2459	16	.4531

Notes: Individual-level Wilcoxon signed ranks test. *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

Results:

In the 0% treatments, regardless of which factor, 1.3 or 1.7, is used, the average earnings of a pair appear to be larger as the duration of the partnership is longer. According to Wilcoxon signed ranks tests, the efficacy of longer partnership is significant in Phase 2 to 4 of the 0%, 1.3 treatment and in all four phases in the 0%, 1.7 treatment.

In the 50% treatments, it appears that the effects of the longer partnership is weak or that no such effects exist; Wilcoxon signed ranks tests do not detect a significant difference in the average earnings between those with longer partnerships and those who interacted at most twice.

In the 100% 1.7 treatments, the average earnings appear to be larger as the pairs have interacted more times in Phases 1 and 3; but, the increase is not significant, according to Wilcoxon signed ranks tests.

These results are suggestive only, since these are based on individual-level Wilcoxon signed ranks tests with small samples.

However, they suggest that repeated interaction with known partners is a key to more cooperative outcomes when subjects cannot form reputations with those they have not interacted with, whereas it is unimportant when they can do so.

(3) Individual-level Mann-Whitney tests for the differences in average earnings by treatment, for specific numbers of periods for which given (i, j) were paired

(a) Phase 1

	(i) # of periods for which specific (i, j) were paired = 1						(ii) # of periods for which specific (i, j) were paired = 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0751*	.0785*	.0004***	.0000***	.0000***	----	.5070	.2669	.0000***	.0000***	.0000***
50% info	----	----	.7561	.0078***	.0000***	.0000***	----	----	.7677	.0001***	.0000***	.0000***
100% info	----	----	----	.0127**	.0000***	.0000***	----	----	----	.0001***	.0000***	.0000**
II. Factor of 1.7												
0% info	----	----	----	----	.0091***	.0004***	----	----	----	----	.1749	.0081***
50% info	----	----	----	----	----	.1372	----	----	----	----	----	.0895*
100% info	----	----	----	----	----	----	----	----	----	----	----	----
	(iii) # of periods for which specific (i, j) were paired = 3						(iv) # of periods for which specific (i, j) were paired = 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	1.000	.7817	.0071***	.0000***	.0000***	----	.7132	.7886	.0099***	.0288**	.0137**
50% info	----	----	.7456	.0191*	.0000***	.0000***	----	----	.2254	.0034***	.0112**	.0014***
100% info	----	----	----	.0070***	.0000***	.0000***	----	----	----	.0040***	.0049***	.0005***
II. Factor of 1.7												
0% info	----	----	----	----	.2945	.0497**	----	----	----	----	.2657	.2621
50% info	----	----	----	----	----	.1008	----	----	----	----	----	.7127
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(v) # of periods for which specific (i, j) were paired = 5(vi) # of periods for which specific (i, j) were paired = 6

	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	N/A	N/A	N/A	N/A	N/A	----	1.000	1.000	.0442**	.0603*	.1213
50% info	----	----	.2454	N/A	.0543*	.0603*	----	----	1.000	.1697	.2805	.2405
100% info	----	----	----	N/A	.0101**	.0565*	----	----	----	.0429**	.0565*	.1025
II. Factor of 1.7												
0% info	----	----	----	----	N/A	N/A	----	----	----	----	.3789	.7343
50% info	----	----	----	----	----	.1772	----	----	----	----	----	.3476
100% info	----	----	----	----	----	----	----	----	----	----	----	----

(vii) # of periods for which specific (i, j) were paired = 7

	I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3						
0% info	----	N/A	N/A	N/A	N/A	N/A
50% info	----	----	N/A	N/A	N/A	N/A
100% info	----	----	----	.0641*	N/A	.0429**
II. Factor of 1.7						
0% info	----	----	----	----	N/A	.3909
50% info	----	----	----	----	----	N/A
100% info	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(b) Phase 2

	(i) # of periods for which specific (i, j) were paired = 1						(ii) # of periods for which specific (i, j) were paired = 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0199**	.0172**	.0001***	.0000***	.0000***	----	.1602	.0002***	.0377**	.0000***	.0000***
50% info	----	----	.9346	.0115*	.0000***	.0000***	----	----	.2740	.2306	.0000***	.0000***
100% info	----	----	----	.0161**	.0000***	.0000***	----	----	----	.6820	.0000***	.0000***
II. Factor of 1.7												
0% info	----	----	----	----	.0066***	.0004***	----	----	----	----	.0000***	.0000***
50% info	----	----	----	----	----	.3482	----	----	----	----	----	.0170*
100% info	----	----	----	----	----	----	----	----	----	----	----	----
	(iii) # of periods for which specific (i, j) were paired = 3						(iv) # of periods for which specific (i, j) were paired = 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.3459	.0627*	.1163	.0000***	.0000***	----	.8773	.5253	.0015***	.0004***	.0005***
50% info	----	----	.2941	.3463	.0000***	.0000***	----	----	.4251	.0021***	.0003***	.0005***
100% info	----	----	----	.7776	.0000***	.0000***	----	----	----	.0025***	.0007***	.0007***
II. Factor of 1.7												
0% info	----	----	----	----	.0004***	.0000***	----	----	----	----	.7048	.4323
50% info	----	----	----	----	----	.4020	----	----	----	----	----	.2183
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(v) # of periods for which specific (i, j) has been paired = 5

(vi) # of periods for which specific (i, j) has been paired = 6

	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0641*	.1161	.0361**	1.000	.0442**	----	N/A	N/A	N/A	N/A	N/A
50% info	----	----	.8649	.0107**	.6434	.0325**	----	----	N/A	N/A	N/A	N/A
100% info	----	----	----	.0062***	.6004	.0384**	----	----	----	.0641*	.0565*	.0345**
II. Factor of 1.7												
0% info	----	----	----	----	.0667*	.8961	----	----	----	----	.5439	.2996
50% info	----	----	----	----	----	.1798	----	----	----	----	----	1.000
100% info	----	----	----	----	----	----	----	----	----	----	----	----

(vii) # of periods for which specific (i, j) has been paired = 7

	I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3						
0% info	----	.1213	N/A	.1025	N/A	.1213
50% info	----	----	N/A	.1025	N/A	.1213
100% info	----	----	----	N/A	N/A	N/A
II. Factor of 1.7						
0% info	----	----	----	----	N/A	.1025
50% info	----	----	----	----	----	N/A
100% info	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(c) Phase 3

	(i) # of periods for which specific (i, j) were paired = 1						(ii) # of periods for which specific (i, j) were paired = 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0386**	.0012***	.0200**	.0000***	.0000***	----	.0110**	.0000***	.0001***	.0000***	.0000***
50% info	----	----	.2941	.3620	.0000***	.0000***	----	----	.4874	.0500**	.0000***	.0000***
100% info	----	----	----	.8608	.0000***	.0000***	----	----	----	.0577*	.0000***	.0000***
II. Factor of 1.7												
0% info	----	----	----	----	.0000***	.0000***	----	----	----	----	.0000***	.0000***
50% info	----	----	----	----	----	.7403	----	----	----	----	----	.0183**
100% info	----	----	----	----	----	----	----	----	----	----	----	----
	(iii) # of periods for which specific (i, j) were paired = 3						(iv) # of periods for which specific (i, j) were paired = 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0828*	.0071***	.0021***	.0000***	.0000***	----	.0596*	.2478	.0004***	.0010***	.0153**
50% info	----	----	.4511	.0055***	.0000***	.0000***	----	----	.8833	.0001***	.0008***	.0148**
100% info	----	----	----	.0253**	.0000***	.0000***	----	----	----	.0003***	.0009***	.0323**
II. Factor of 1.7												
0% info	----	----	----	----	.0436**	.0124**	----	----	----	----	.9259	.1076
50% info	----	----	----	----	----	.2125	----	----	----	----	----	.1273
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Each individual pair's data is treated as independent observation for this test. Numbers are p -value (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(v) # of periods for which specific (i, j) were paired = 5(vi) # of periods for which specific (i, j) were paired = 6

	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.6434	N/A	.1213	.0331**	.0565*	----	N/A	N/A	N/A	N/A	N/A
50% info	----	----	N/A	N/A	N/A	N/A	----	----	N/A	.0641*	.0319	.1025
100% info	----	----	----	.0641*	.0083***	.0194**	----	----	----	N/A	N/A	N/A
II. Factor of 1.7												
0% info	----	----	----	----	.1554	.3404	----	----	----	----	.3774	.3476
50% info	----	----	----	----	----	.6579	----	----	----	----	----	.3778
100% info	----	----	----	----	----	----	----	----	----	----	----	----

(vii) # of periods for which specific (i, j) were paired = 7

	I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3						
0% info	----	N/A	N/A	N/A	N/A	.1025
50% info	----	----	N/A	N/A	N/A	N/A
100% info	----	----	----	N/A	N/A	N/A
II. Factor of 1.7						
0% info	----	----	----	----	N/A	N/A
50% info	----	----	----	----	----	N/A
100% info	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(d) Phase 4

(i) # of periods for which specific (i, j) were paired = 1							(ii) # of periods for which specific (i, j) were paired = 2					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0143**	.0000***	.0187**	.0000***	.0000***	----	.0431**	.0000***	.0045***	.0000***	.0000***
50% info	----	----	.0639*	.3393	.0000***	.0000***	----	----	.0189**	.1535	.0000***	.0000***
100% info	----	----	----	.8557	.0000***	.0000***	----	----	----	.8816	.0000***	.0000***
II. Factor of 1.7												
0% info	----	----	----	----	.0000***	.0000***	----	----	----	----	.0000***	.0000***
50% info	----	----	----	----	----	.3164	----	----	----	----	----	.1602
100% info	----	----	----	----	----	----	----	----	----	----	----	----
(iii) # of periods for which specific (i, j) were paired = 3							(iv) # of periods for which specific (i, j) were paired = 4					
	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0000***	.0110**	.0000***	.0000***	.0000***	----	.1824	.1432	.3173	.0210**	.0429**
50% info	----	----	.0204**	.1458	.0000***	.0000***	----	----	.8511	.0163**	.0006***	.0038***
100% info	----	----	----	.7401	.0000***	.0000***	----	----	----	.0014***	.0000***	.0007***
II. Factor of 1.7												
0% info	----	----	----	----	.0011***	.0002***	----	----	----	----	.0681*	.1481
50% info	----	----	----	----	----	.2597	----	----	----	----	----	.4237
100% info	----	----	----	----	----	----	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.

(v) # of periods for which specific (i, j) were paired = 5(vi) # of periods for which specific (i, j) were paired = 6

	I. Factor of 1.3			II. Factor of 1.7			I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3												
0% info	----	.0033***	.0083***	.0079***	.0081***	.0129**	----	.2864	N/A	.0103**	.0038***	.0103**
50% info	----	----	.8302	.0101**	.0103**	.0278**	----	----	N/A	.0202**	.0101**	.0202**
100% info	----	----	----	.0194**	.0202**	.0608*	----	----	----	N/A	N/A	N/A
II. Factor of 1.7												
0% info	----	----	----	----	1.000	.2907	----	----	----	----	.3774	.5385
50% info	----	----	----	----	----	.3865	----	----	----	----	----	.3774
100% info	----	----	----	----	----	----	----	----	----	----	----	----

(vii) # of periods for which specific (i, j) were paired = 7

	I. Factor of 1.3			II. Factor of 1.7		
	0% info	50% info	100% info	0% info	50% info	100% info
I. Factor of 1.3						
0% info	----	.0603*	N/A	.0641*	N/A	N/A
50% info	----	----	N/A	.1025	N/A	N/A
100% info	----	----	----	N/A	N/A	N/A
II. Factor of 1.7						
0% info	----	----	----	----	N/A	N/A
50% info	----	----	----	----	----	N/A
100% info	----	----	----	----	----	----

Notes: Each individual pair's data is treated as an independent observation for this test. Numbers are p -values (two-sided). *, **, and *** indicate significance at the .10 level, at the 0.05 level and at the .01 level, respectively.