Territoriality and Gender in the Laboratory

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Abstract:
We study how males and females differ significantly in the way same-gender peers affect their social behavior, particularly as this seems related to 'territoriality'. We have people play a Prisoner's Dilemma game with a partisan audience. In each session, there are either two (6-10-person) same-gender groups or one group of each gender. Groups are separated into two rooms. Each person plays the Prisoner's Dilemma once at home and once when away, observed by a partisan (home) audience each period. People additionally receive a 1/3 share of the payoffs from games in which they make no choices.

Males cooperate substantially more often when away, while females cooperate substantially more often when at home. The first finding is in broad agreement with the hypothesis that males exhibit a higher degree of territoriality than females. Our results constitute a puzzle for evolutionary psychology, which does not readily explain the observed pattern for females.

Keywords: Territoriality, group membership, gender differences, cooperation

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Introduction

Males of nearly every species exhibit at least some degree of *territoriality*. By this we mean that one acts in an aggressive manner when there are intruders within the bounds of one's own 'territory'.[1] By the same token, women have typically been more nurturing and less involved in the defense of their territory. There is considerable evidence of territoriality in modern affairs, whether on the battlefield or in sports.

One wonders, however, the extent to which the traditional gender roles and patterns of behavior that have been with us for so long may have become blurred in contemporary society, particularly with respect to the most recent generations. While disciplines such as evolutionary psychology might predict territoriality and dominance relations for males, the predictions for women are less obvious. Women are now in roles that are very different than in hunter-gatherer times, being competitive in venues ranging from the business world to politics to water polo. It is therefore not entirely clear whether we should expect the degree of territoriality and cooperation to differ greatly across gender.

We investigate this issue in the context of an experimental game played by (primarily) undergraduate students at the University of California at Santa Barbara. The game is a classic Prisoner's Dilemma, but with some important differences in implementation: We induce a sense of group membership by randomly allocating participants into two groups (of 6-10 people), who then reside in separate rooms. In each period, two players (one from each room) are seated on opposite sides of a table in each of the two rooms and simultaneously select a choice by sliding a card face down to the experimenter, who then reveals the choices by turning the cards over.

[1] Classic references on this topic include Gottmann (1973), Halloway (1974), and Sack (1986). In our analysis territoriality indicates more closeness to the group than a geographical location. That is, territory in this paper is where the group is, not a specific place.

Those participants not actively making a choice are seated behind the home player and serve as an audience. Participants receive 1/3 of the payoffs from each outcome in which they did not make a choice, as well as full payoffs from the outcomes resulting from their own choices. Each person plays once in his or her own room and once in the other room.[2] Groups are gender homogeneous, either all-male or all-female.

We observe some striking differences in the behavior of males and females. While there is no significant difference in the overall cooperation rate across gender, there is a remarkable difference in the patterns of play in one's own territory and in the other group's territory. Males are significantly and substantially less cooperative when playing in their own territory, while females are significantly *more* cooperative in the home environment. Thus, we do indeed find evidence of territoriality in the laboratory for males. We also find that, despite possible changes in gender roles in contemporary society, females behave quite differently than do males in this respect.

Theoretical Background

While game theory is a very effective tool for analyzing behavior in social interaction among individuals with preferences over individual and social outcomes, it is typically silent on the effect of group membership and composition on behavior. Nevertheless, there may very well be effects from group membership and composition by itself on the decisions made by individual members. Despite this, we are not aware of any economic theory that addresses differences in behavior in our laboratory environment according to gender and territory.

[2] Some people have mentioned that our setup could also be seen as reflecting coalition size rather than territoriality *per se*. Yet, the coalition size is actually the same for both the home and away player, it is only a question of physical presence and saliency. In our view, the term territory is here synonymous with the physical presence of one's group members, given the sterile and landless laboratory environment.

One discipline that might shed light on this issue is evolutionary psychology, an approach to psychology in which knowledge and principles from evolutionary biology are put to use in research on the structure of the human mind. In this view, the mind is a set of information-processing machines that were designed by natural selection to solve adaptive problems faced by our hunter-gatherer ancestors. Since mankind lived as hunter-gatherers far longer than as anything else, and since natural selection is too slow a process for it to design circuits that are well-adapted to our contemporary environment evolutionary psychology takes the position that "our modern skulls house a stone age mind".[3] From this perspective, principal male tasks throughout hunter-gatherer times included hunting for food and guarding the group against invaders. Both of these tasks would be expected to foster a high degree of territoriality in males.

Such territoriality is quite common among the males of many species; Huntingford and Turner (1987) find that males are much more aggressive when defending a home territory. Furthermore, Wingfield and Wada (1989) test male sparrows and find that an invasion induces a higher testosterone level. Regarding human males, there is current biological evidence that the biochemistry of a team of athletes competing against another team is affected by the location of the event. Neave and Wolfson (2003) examine the origin of the phenomenon known as the "home advantage" by testing salivary testosterone levels in soccer players. These levels were found to be about 50% higher before home games than before away games. Further, stronger perceived rivalry triggered substantially higher testosterone levels.

However, the corresponding female role has been quite different throughout this period. There is no obvious counterpart in hunter-gatherer times for women, except that interactions between males and females of different groups often reflected mating opportunities. The

[3] This quote is taken from *Evolutionary Psychology: A Primer* (http://www.psych.ucsb.edu/research/cep/primer.html), which provides some background on the topic. For a much more complete introduction to evolutionary psychology, see Tooby and Cosmides (1992).

predictions of evolutionary psychology for women in our environment are unclear. Females have traditionally been the primary source of nurturing for children, and the prescribed tasks may have more of a community-oriented flavor. In this sense, we might expect women to be more cooperative than men in general.[4] Yet, women today are not obviously less competitive than men and we also see evidence of the home-team advantage in women's sports.[5] Thus, evolutionary psychology might predict more overall cooperation from women, while contemporary norms might lead us to expect a similar territorial effect for women

The question remains whether the relatively calm and unemotional environment of an experiment will be sufficient to trigger differentials in aggression based on a completely artificial (and transparently temporary) division into groups. Nevertheless, to the extent that these patterns can manifest in the laboratory, we should certainly expect males should play more aggressively when challenged on their own territory. We might also expect women to not exhibit this differential, although it is also possible that women have become more like men in contemporary society.

Method

We conducted our experimental sessions at the University of California at Santa Barbara. Participants were recruited by e-mail from a general database of students who had registered as being interested in participating in paid experiments. There were 12-20 people in each session (always an even number), depending on how many people actually showed up for the

[4] This view is also supported by results from Gneezy, Neiderle, and Rustichini (2003), Gneezy and Rustichini (2004), and Niederle and Vesterlund (2007), all of which find that females seem to have less of a taste for competition than males.

[5] For example, the home team in the 2007-2008 WNBA regular season won 54.3% (120 of 221) of all games. By comparison, the home team in the 2007-2008 NBA regular season won 59.7% (739 of 1237) of all games. However, since the NBA had a more grueling schedule than the WNBA (each team played 82 games compared to only 17), the additional travel demands may weaken the comparability of these results.

experiment. The Prisoner's Dilemma game played is shown below. Entries denote payoff units; each unit was worth $0.50 in actual money.

Prisoner's Dilemma

	A	B
A	5, 5	1, 7
B	7, 1	2, 2

Actions were labeled A and B: in the analysis we will refer to the choice of A as cooperation and B as defection, as usual in the interpretation of behavior in the game. There were 15 sessions overall; five sessions were all-male, five sessions were all-female, and in the other five sessions one group was all-male and the other group was all-female; no participant was permitted to attend more than one session. Overall, there were 234 participants (120 female and 114 male), who earned an average of about $16 (including a show-up fee) for a bit less than an hour of their time. The instructions can be found in Appendix A.

Participants initially all met in the same room, and they were randomly assigned (subject to gender constraints in the mixed sessions) to either the Row group or the Column group for the duration of the session. Row players went to a room labeled Room R, while Column players went to a different room labeled Room C.[6] In each room, participants received instructions that explained how play would proceed (the complete instructions are presented in Appendix A). Numbered slips of paper were drawn in each room to determine the period in which each person played in Room R and Room C. At the beginning of a period, a Row player sat on one side of a table in Room R while a Column player who arrived from Room C sat across from her or him.[7] In this framework, one can think of the Row player as being 'at home' in Room R and of the

[6] These labels were prominently displayed on the blackboards of the respective rooms.
[7] Similar events, with labels switched, simultaneously occur in the other room.

Column player as being 'away' in that same room. In each room, group members belonging to that room were seated in a semi-circle behind the active member of their group and observed the players.[8] All participants were required to observe strict silence at all times.

Two index cards were face down on the table; each player examined these cards and made a choice by passing the card face down to the experimenter. The experimenter then revealed the outcome to everyone in the room by flipping over the two cards immediately after receiving the choices. At the end of the period, the visitor went back to the room from which he or she arrived. The experiment continued for as many periods as needed until each player had made a choice in each room, once at home and once when away.

Payoffs had two components: the outcome of the two games one played and the outcome of all the games played by one's group members. The first component equals the sum of the payoffs in those two games. The second component equals 1/3 of the sum of the payoffs received by the active players in one's group, but only for the periods when one was not an active player. These rules were clearly explained to the participants prior to the commencement of play.

Experimental Results

The independent variable of greatest interest is the cooperation rate. Table 1 summarizes the aggregate cooperation rates for males and females, depending on the type of session and whether they are at home or away. Complete results for each individual session are shown in Appendix B.

[8] Therefore, Row players are the audience in Room R and Column players are the audience in Room C.

Table 1: Aggregate Cooperation Rates.

Number of times the participant chose A and total number of choices.

	Home	Away	Combined
Males in homogenous sessions	21/76 (27.6%)	34/76 (44.7%)	55/152 (36.2%)
Males in mixed sessions	12/38 (31.6%)	14/38 (36.8%)	26/76 (34.2%)
Males, overall	33/114 (28.9%)	48/114 (42.1%)	**81/228 (35.5%)**
Females in homogenous sessions	36/82 (43.9%)	24/82 (29.3%)	60/164 (36.6%)
Females in mixed sessions	19/38 (50.0%)	15/38 (39.5%)	34/76 (44.7%)
Females, overall	55/120 (45.8%)	39/120 (32.5%)	**94/240 (39.2%)**

In contrast to the view that women are more cooperative than men, the overall cooperation rates (in bold) for males and females are quite similar, 35.5% and 39.2% respectively. The test of the difference of proportions (see Glasnapp and Poggio 1986) finds no significant difference in these cooperation rates ($Z = 0.81$, $p = 0.418$, two-tailed test[9]). The difference is even smaller in gender-homogenous sessions, with overall cooperation rates of 36.2% for males and 36.6% for females. Thus, we see no evidence of differences in average cooperation across gender over the different conditions.

However, this is the result of a balancing of significant effects of the interaction of role and gender. Males cooperate significantly less when at home than do females, the test of proportions gives $Z = 2.67$, $p = 0.008$. Males cooperate more when away than do females, but this difference is not statistically significant; the test of proportions gives $Z = 1.52$, $p = 0.129$. Overall the cooperation rate for males is 30% higher when away than when at home, while the cooperation rate for females is 40% lower when away than when at home. Both of these differences are significant; the test of proportions gives $Z = 2.08$, $p = 0.038$, and $Z = -2.12$, $p =$

[9] All statistical tests are two-tailed, unless otherwise indicated. We round off p-values to three decimal places.

0.035, respectively. The cooperation rate in all-male sessions is 13.2 percentage points higher when away than at home; this difference is significant by the test of the difference of proportions, which gives $Z = 2.19$, $p = 0.028$. This pattern is reversed in all-female sessions, with a cooperation rate 13.3 percentage points higher when at home than when away; the test of the difference of proportions gives $Z = -1.95$, $p = 0.051$.[10] In the mixed-gender sessions, these results go in the same directions, but are more muted (especially for males) and are not significant; the test of proportions gives $Z = 0.48$, $p = 0.631$ for males in mixed-gender sessions and $Z = -0.92$, $p = 0.358$ for females in mixed-gender sessions

However, these tests do not take into account the potential interaction between gender and role at home and away, as well as differences in treatment, particularly the gender composition of the other group in the session. In Table 2, we present the marginal effects estimated from logit regressions, after clustering on each individual participant.

Table 2: Marginal effects from the Logit Regressions for Cooperation

	Cooperate
Female Away	-0.126*** (0.048)
Male Home	-0.160*** (0.056)
Male Away	-0.035 (0.060)
N	468
Log-pseudolikelihood	-304.61

Standard Errors are in parentheses; *** indicates significance at $p = 0.010$ and ** indicates significance at $p = 0.050$ (two-tailed tests). The omitted category is the female cooperation rate when at home.

[10] An alternative test when an individual makes choices in two environments (e.g., when at home and when away) is the sign test (see Siegel and Castellan 1988). This test gives $Z = 2.57$, $p = 0.010$ for the all-male case and $Z = -2.20$, $p = 0.028$ for the all-female case.

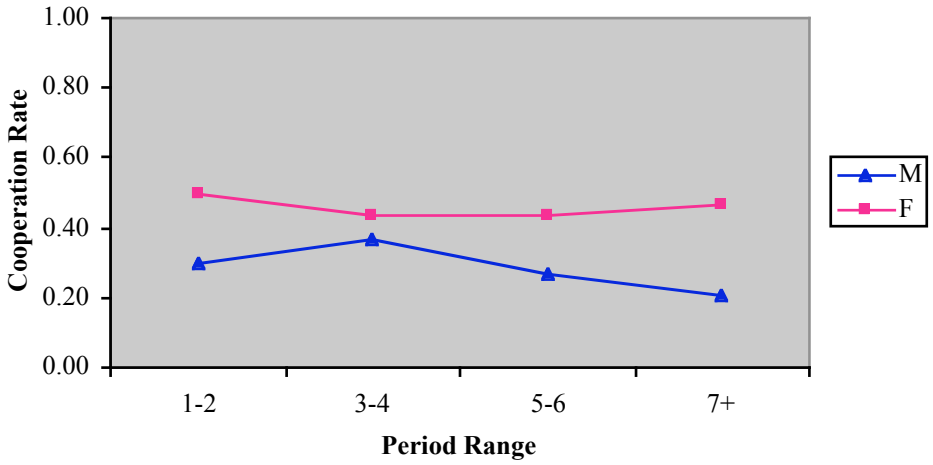
Females cooperate significantly less when away than when at home (a reduction of 13 percentage points), and male cooperate significantly less when at home than do females (a difference of 16 percentage points); both of these differences re significant at $p = 0.010$. There is no significant difference between the cooperation rates for females when at home and males when away.

While each individual makes only one choice in each environment, one might argue that each individual's decision is not independent, since an individual has observed previous outcomes when at home. The most conservative statistical test considers each session as one independent observation for each gender's cooperation rates (for both genders, there are five same-gender and five mixed-gender sessions). As can be seen from Appendix B, cooperation rates for males were higher when they were away in eight of the 10 sessions and lower in one of the 10 sessions (the rates were the same in the other session). A simple sign test indicates statistical significance ($Z = 2.06$, $p = 0.040$).

Similarly, cooperation rates for females were lower when they were away in seven of the 10 sessions and higher in two of the 10 sessions (the rates were the same in the other session); however, here the difference is not statistically significant with session-level data ($Z = -1.34$, $p = 0.180$). Finally, we can calculate the difference in home and away cooperation rates for each session and compare these across gender. A Wilcoxon-Mann-Whitney ranksum test gives $Z = 2.67$, $p = 0.008$, so that even the most conservative test indicates strongly that the male and female patterns across roles are different.

Given the possibility that participants may be influenced by previous choices by group members, we analyze (see Figure 1) the rate of cooperation at home over time for males and females:

Figure 1: Cooperation rate at home over time



There is a somewhat decreasing rate of cooperation for males, and virtually no time trend for female cooperation.[11] Panel data logit analysis of the effect of the past periods on choice confirms that the time trend exists (reducing the cooperation rate by an estimated 3.4 percentage points every period) and is significant ($Z = 2.58$, $p = 0.010$) for male participants playing at home, thus strengthening the effect of the male gender on cooperation. The effect is not significant for individuals (male or female) playing when away.

A further check is to look at the correlation between a choice in one period and a choice in the next. Recall that participants only observe the host choices of their own group. The correlation between host cooperation from one period to the next is 0.475, significant at $p = 0.000$. This appears to indicate that one teammate's decision at host influences teammates who follow. However, the correlation between guest cooperation from one period to the next is even slightly higher, at 0.495 (also significant at $p = 0.000$). Since one does not observe one's

[11] The number of observations (standard errors) for male cooperation rates in the respective period ranges is 30 (0.085), 30 (0.089), 30 (0.082), and 24 (0.085); for female cooperation rates in the respective period ranges, we have 30 (0.093), 30 (0.092), 30 (0.092), and 30 (0.093).

teammates' play as guests, there is no mechanism for influence.[12] Thus, we interpret this as evidence that host choices are no less independent than guest choices.

Another issue concerns differences in behavior across mixed-gender and homogenous-gender sessions. The predictions regarding male territoriality provided by an evolutionary psychology approach are somewhat less clear in this case: the difficulty is that females were rarely invaders in hunter-gatherer times. However, it seems reasonable to presume that males are more threatened by other males in their territory, so that we might expect the difference between home and away male cooperation rates to be smaller in the mixed-gender sessions. In fact, there is some suggestive (but not conclusive) evidence for this; in Table 1, we see that males cooperate more when away by an average of 17 percentage points in the all-male sessions, as compared to five percentage points in the mixed-gender sessions. By comparison, there is little corresponding difference (15 percentage points versus 11 percentage points) for females across all-female and mixed-gender sessions.

However, we do note that the overall rate of females choosing cooperation is higher when playing against males than against females. This is true both when at home (50.0% versus 43.9%) and when away (39.5% vs. 29.3%), although the difference is not statistically significant on the pooled data (the test of the difference of proportions gives $Z = 1.20$, $p = 0.230$). We do not observe this pattern for males, as they play slightly more cooperatively against females when at home, but less cooperatively against females when away.

We also test for differences using the session-level data in Appendix B. The Wilcoxon-Mann-Whitney ranksum test gives $Z = 1.32$, $p = 0.186$ for males across session type, compared to $Z = 0.40$, $p = 0.690$ for females across session type. A logit regression finds a marginal effect

[12] Of course, one observes the visitor choices in one's own room, and this could affect their own behavior when away. But it would seem more likely that the channel of influence runs through observing one's group members rather than from observing strangers.

on cooperation of 10 percentage points for the interaction between males and same-gender or opposite-gender pairings; however, this effect is not statistically significant ($Z = 0.93$, $p = 0.352$). Finally, the ranksum test using session-level data for female cooperation rates when playing against men compared to when playing against men gives marginal statistical significance ($Z = 1.68$, $p = 0.093$, two-tailed test).

A final question concerns whether the observed behavior is driven by group membership *per se* or whether the motivation of subjects is signaling to peers: the presence of an audience corresponds to situations where peers can easily and precisely observe the behavior of other members of the group. Evidence from Charness, Rigotti, and Rustichini (2007), where we used the same game but did not form single-gender groups, suggests that the latter factor is stronger, although both factors seem to be present to some degree. In that paper, we were able to disentangle the two effects, because we varied whether or not there was an audience and whether there was feedback about the outcome given to the people in the room. Cooperation rates for people playing at home were only 28% when there was both an audience present and feedback given; this compares to 44% with an audience present but no feedback given, 62% with no audience present but feedback given to the two active players, and 50% when no audience was present and no feedback was given.

Using session-level data, the difference in home cooperation rates between the audience and feedback treatment and any other treatment is statistically significant, while no other pairwise comparison yields a significant difference. The test of proportions gives a significant difference between the audience and feedback treatment and any other treatment, with no significant difference across the two no-feedback treatments or across the two no-audience treatments. Thus, overall the greatest effect occurs with both an audience and feedback, which is

the only case where signaling to one's group is feasible. However, the presence of an audience *per se* also makes group membership more salient, as even the treatment with an audience but no feedback has a lower home cooperation rate than the two treatments without an audience (although this difference is not statistically significant even with pooling the data from the no-audience treatments, using either session-level data or the test of proportions).

Discussion

Our previous research found that individual behavior in the Prisoner's Dilemma and the Battle of the Sexes games was affected by salient group membership, as people of both genders were more aggressive at home than when away. In that study, groups were comprised of a mix of males and females, and we found no significant differences in behavior across gender in this environment. However, the picture changes dramatically when each group is comprised of only males or only females, and we find strong gender effects in the relatively calm and unemotional environment of a laboratory experiment. While there is no difference in overall cooperation rates for males and females, we find that males tend to cooperate less at home and females tend to cooperate more at home. These effects are most pronounced when both groups are the same gender, and diminish (particularly for males) in mixed-gender sessions.

Needless to say, our results are outside the confines of neo-classical economic theory. Since recent experimental research on gender behavior suggests that females are less competitive than males, we might have expected to see females behave more cooperatively in our game. But we do not observe such a difference, and this previous research says nothing about differences in home and away behavior for males and females. Moreover, while evolutionary psychology offers an explanation for the observed differential when all players are male, it does not provide

a clear prediction for sessions that include females and certainly does not predict the reversal we find in this differential. In this sense, our results vis-à-vis male and female differences in behavior across home and away environments do not conform to any theory of which we are aware.

References

Charness, G., Rigotti, L. & Rustichini, A. (2007), "Individual Behavior and Group Membership," *American Economic Review*, **97**, 1340-1352.

Glasnapp, D. and Poggio, J. (1985), *Essentials of Statistical Analysis for the Behavioral Sciences*, Merrill: Columbus.

Gneezy, U., Niederle, M. & Rustichini, A. (2003), "Performance in competitive environments: Gender differences," *Quarterly Journal of Economics*, 1049-1074.

Gneezy, U. & Rustichini, A. (2004), "Gender and competition at a young age," *American Economic Review Papers and Proceedings*, 377-381.

Gottmann, J. (1973), *The Significance Of Territory*, University Press of Virginia: Charlottesville.

Halloway, R. (1974), *Primate Aggression, Territoriality, and Xenophobia*, Academic Press: New York, and London.

Huntingford, F. & Turner, A. (1987), *Animal Conflict*, Chapman-Hall: London.

Neave, N. & Wolfson, S. (2003), "Testosterone, territoriality, and the 'home advantage'," *Physiology & behavior,* **78**, 269-275.

Niederle, M. & Vesterlund, L. (2007), "Do Women Shy away from Competition? Do Men Compete too Much?," *Quarterly Journal of Economics*, **122**, 1067-1101.

Sack, R. (1986), *Human Territoriality: Its Theory and History*, Cambridge University Press: Cambridge.

Siegel, S. & Castellan, N. (1988), *Nonparametric Statistics for the Behavioral Sciences*, McGraw-Hill: Boston

Tooby, J. & Cosmides, L. (1992), "The psychological foundations of culture," in J. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture*, Oxford University Press: New York.

Wingfield, J. & Wada, M. (1989), "Changes in plasma levels of testosterone during male-male interactions in the song sparrow, *Melospiza melodia*: time course and specificity of response," *Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology*, **166**, 189-194.

Appendix A - Instructions

INSTRUCTIONS (room R)

Thank you for participating in this experiment. You will receive $5 for your participation, in addition to other money to be paid as a result of decisions made in the experiment.

There are 20 people participating in this session. They have been randomly divided into two rooms, each with 10 people. You are in room **R**, this means you are a **Row decider**.

There will be ten rounds in this session, and each person will make two decisions, one in each room. You have a card with a green number and a card with a (different) yellow number. These numbers will determine when and where you make decisions.

Your **green number** indicates the round during which it will be your turn to make a decision in the **room where you are now (room R)**.

Your **yellow number** indicates the round during which it will be your turn to **go to the other room (room C)** and make a decision there.

In each round there are two people making a decision. Each person will be making a simultaneous choice between A and B in the following decision matrix:

		Column	
		A	*B*
Row	*A*	5 , 5	1 , 7
	B	7 , 1	2 , 2

In each cell, the first number represents the outcome for the Row decider and the second number represents the outcome for the Column decider.

Thus, if both people choose A, the Row decider receives 5 and the Column decider receives 5. If both people choose B, the Row decider receives 2 and the Column decider receives 2. If the Row decider chooses A and the Column decider chooses B, the Row decider receives 1 and the Column decider receives 7. If the Row decider chooses B and the Column decider chooses A, the Row decider receives 7 and the Column decider receives 1.

The other nine members of each room also have a financial stake in the outcome – each person not making a decision receives 1/3 of the amount shown for the realized outcome.

Thus, if both deciders choose A, every inactive person in room R receives 5/3 and every inactive person from room C receives 5/3. If both deciders choose B, every inactive person from room R receives 2/3 and every inactive person from room C receives 2/3. If the Row decider chooses A and the Column decider chooses B, every inactive person from room R receives 1/3 and every

inactive person from room R receives 7/3. If the Row decider chooses B and the Column decider chooses A, every inactive person from room R receives 7/3 and every inactive person from room R receives 1/3.

Each unit is worth $0.50 in actual money (2 units = $1) that will be paid in cash at the end of the experiment.

All people in the room (except for the person from the other room) will be able to watch the decider who belongs to their room make his or her choice (however, no verbal comments are permitted).

The decision of the person who walks into the room, on the other hand, is made privately.

The outcome of the joint decision is immediately revealed to all people in the room.

After the 10 rounds are completed, we will total each person's earnings (from the outcomes of the two self-made decisions, as well as the other 18 outcomes), add the $5 show-up fee, and pay each person individually and privately, using the numbers on your two cards to identify your decisions.

Please feel free to ask questions.

Appendix B – Session-level data

Cooperation Rates for Males

	Home	Away	Combined
All-male sessions			
Session 1	2/16 (12%)	7/16 (44%)	9/32 (28%)
Session 2	5/16 (31%)	7/16 (44%)	12/32 (38%)
Session 3	4/16 (25%)	5/16 (31%)	9/32 (28%)
Session 4	5/14 (36%)	8/14 (57%)	13/28 (46%)
Session 5	5/14 (36%)	7/14 (50%)	12/28 (43%)
MF sessions			
Session 1	1/10 (10%)	2/10 (20%)	3/20 (15%)
Session 2	3/8 (38%)	4/8 (50%)	7/16 (44%)
Session 3	2/6 (33%)	2/6 (33%)	4/12 (33%)
Session 4	2/6 (33%)	3/6 (50%)	5/12 (41%)
Session 5	4/8 (50%)	3/8 (38%)	7/16 (44%)

Cooperation Rates for Females

	Home	Away	Combined
All-female sessions			
Session 1	11/20 (55%)	6/20 (30%)	17/40 (42%)
Session 2	6/14 (43%)	3/14 (21%)	9/28 (32%)
Session 3	4/12 (33%)	5/12 (42%)	9/24 (38%)
Session 4	10/16 (62%)	4/16 (25%)	14/32 (44%)
Session 5	5/20 (25%)	6/20 (30%)	11/40 (28%)
MF sessions			
Session 1	5/10 (50%)	4/10 (40%)	9/20 (45%)
Session 2	3/8 (38%)	2/8 (25%)	5/16 (31%)
Session 3	3/6 (50%)	3/6 (50%)	6/12 (50%)
Session 4	4/6 (67%)	3/6 (50%)	7/12 (58%)
Session 5	4/8 (50%)	3/8(38%)	7/16 (44%)