

# Supplementary Materials for the paper: On the escalation and de-escalation of conflict

*J.A. Lacomba, F. Lagos, E. Reuben, and F. van Winden*

## SM1. Experimental procedures

The computerized experiment was conducted in 2006 in the CREED laboratory at the University of Amsterdam. Subjects were recruited through the CREED recruitment website and the experiment was programmed with z-Tree (Fischbacher, 2007). The experiment lasted around one hour. In total, 206 subjects participated in the experiment.<sup>1</sup>

The number of subjects and sessions in each treatment and sequence of play is summarized in Table SM1. Subjects played one of the three games repeatedly for twenty periods: in ten of the twenty periods, subjects were randomly rematched such that they faced a different opponent in every period (*Strangers*), and in the remaining ten periods, subjects were always matched with the same opponent (*Partners*). We implemented two matching sequences to control for order effects. In each period, subjects received 1000 tokens as their endowment. At the end of the experiment, two periods (one from Partners and one from Strangers) were randomly selected for payment. Average earnings, including a €2.50 show-up fee, were €16.69 (1000 tokens equaled €10.00).

After arrival in the lab's reception room, each subject drew a card to be randomly assigned to a seat in the laboratory. Once everyone was seated, subjects were given the instructions for the experiment (see below). Subjects were told that the experiment consisted of two independent parts. We emphasized the fact that their choices in the first part would not affect their earnings in the second part. Thereafter, subjects had to answer a few exercises in order

---

<sup>1</sup> In addition, 84 subjects participated in the two additional treatments: 40 subjects participated in the treatment where the winner of the contest was forced to take all of the loser's production and 44 subjects participated in the treatment where earnings were equal to the share of conflict expenditures. In both these treatments, subjects faced only the Strangers matching protocol.

to check their understanding of the game to which they had been assigned. Next, they played 10 periods of the respective game via the computer. Subjects submitted their conflict expenditures as an integer number between 0 and 1000 tokens. Take and destruction rates were submitted as a percentage (an integer between 0 and 100).<sup>2</sup> During the game subjects were asked to provide their expectations of the other player's actions and, at the end of periods 1, 10, and 20, to self-report their experienced emotions. At the end of the first part, instructions were distributed concerning the second part of the experiment. They consisted of informing subjects they would play precisely the same game for 10 more periods but with a different matching procedure. After finishing the second part, subjects answered a debriefing questionnaire after which they were paid in private and dismissed.

**Table SM1 – Experimental Design**

Game	Sequence	
	Partners → Strangers	Strangers → Partners
Total Control	38 subjects / 2 sessions	38 subjects / 2 sessions
Scorched Earth	32 subjects / 2 sessions	34 subjects / 2 sessions
Resistance	32 subjects / 2 sessions	32 subjects / 2 sessions

## SM2. Instructions

Below is a sample of the instructions used in the experiment. It corresponds to the Resistance treatment in which subjects first played under the strangers matching scheme. After playing for 10 periods, subjects were told they would play again the same game but with a different matching scheme. Instructions for other treatments and for partners matching are very similar and available upon request.

<sup>2</sup> Restricting take rates and destruction rates to multiples of 0.01 imply a couple of additional subgame-perfect Nash equilibria in the RE game (the predictions of the TC game and the SE game remain unchanged). Specifically, given a winner  $i$  and loser  $j$ ,  $d_j^* = 0.01$  and  $t_i^* = 1$  is now a subgame-perfect Nash equilibrium as well as  $d_j^* = 0$  and  $t_i^* = 0.99$ . Note that both equilibria imply a very small deviation from the  $t_i^* = 1, d_j^* = 0$  equilibrium described in the paper. For instance, equilibrium conflict expenditures decrease from  $c_i^* = c_j^* = 0.5y$  to  $c_i^* = c_j^* = 0.495y$  if  $d_j^* = 0$  and  $t_i^* = 0.99$  and  $c_i^* = c_j^* = 0.499y$  if  $d_j^* = 0.01$  and  $t_i^* = 1$ .

## *Welcome*

Welcome to this experimental session on decision-making. In this session, you can earn money. How much you earn depends on your decisions and the decisions of other participants. In addition – and thus independent of your earnings in the experimental session—you will receive a show-up fee of 2.50 euro. The session has two different parts. The earnings of each part are independent. At the end of the session you will be paid your earnings of each part plus the show-up fee privately (one by one) and in cash in euros.

During the experimental session, you must be quiet and not communicate with other participants. If you have a question, please raise your hand. We will then come to your table to assist you.

Neither during nor after the experiment will others be informed of your actions nor your answers to any questions. Since your answers will be linked to your table number, but not to your name, anonymity is assured also with respect to the analysis of the experimental session.

## *Instructions for the first part of the experiment*

This experiment consists of 10 rounds of decision-making. In each round, you will be matched into a pair with one other participant. This other participant will be a different person for all the 10 rounds. In each round, the computer will randomly determine whom you will be matched with. For convenience, we will sometimes call this other participant 'Other'.

At the beginning of each round, both you and the participant you are paired with (Other) will get 1000 tokens to earn money with. At the end of the experimental session, one of the rounds will be randomly selected for paying out. The earnings of that round, together with the show-up fee, will then be paid out.

Each round will consist of four phases. In phase 1, you and Other will have to allocate the 1000 tokens that each of you have received to two 'projects'. In phase 2, there will be a lottery, based on the allocation of tokens. In phase 3, the winner of the lottery will have to choose a percentage. Finally, in phase 4, the loser of the lottery will have to choose a percentage. We will now discuss these phases in detail.

### *Phase 1: Allocation of tokens to two projects*

In this phase, you as well as Other will have to allocate the 1000 tokens that each of you received to two projects: project P1 and project P2. Any distribution of tokens is allowed, including putting all tokens in only one project. Tokens put into P1 (P1-tokens) directly lead to earnings, whereas tokens put into P2 (P2-tokens) will give a chance to get earnings, as will be explained next.

#### *Project P1:*

For tokens put into P1 it holds that: 100 tokens = 1 euro in earnings. Thus, each token allocated to P1 generates earnings of 1 eurocent.

#### *Project P2:*

This project concerns a lottery. The tokens that you and Other put into P2 will determine your and Other's chances of winning this lottery. Whoever is the winner of this lottery will have to choose a percentage in phase 3. This percentage determines the share of the P1-tokens of the loser of the lottery that will go to the winner. This is further explained below. Whoever is the loser of this lottery will have to choose a percentage in phase 4. This percentage determines the share of the P1-tokens of the loser of the lottery that will be destroyed. This is also further explained below. We will now show how the chance of winning the lottery is determined. Your chance of winning is determined by your share in the total number of tokens in P2:

$$\text{Your chance of winning} = \text{Your P2-tokens} / (\text{Your P2-tokens} + \text{Other's P2-tokens})$$

Similarly, Other's chance of winning is determined by Other's share of the tokens in P2. Thus, the chances for you and Other together always sum up to 100%. For example, suppose that you put 200 tokens in P2 and Other puts 800 tokens in P2. Your chance of winning the lottery then equals:  $200/(200+800) = 200/1000 = 1/5$  (20%), whereas Other's chance of winning equals:  $800/1000 = 4/5$  (80%).

For any given number of tokens that Other will put into P2, your chance of winning increases the more tokens you put into P2 yourself. In our example, if you would have put

800 in P2, instead of 200, your chance of winning would have become:  $800/(800+800) = 800/1600 = 1/2$  (50%).

Clearly, the chance of winning will always be 50% if both you and Other put the same number of tokens in P2. However, you will not know Other's decision when you make your own decision. Once you and Other have decided you will be informed about each other's decision regarding the allocation of tokens to P1 and P2.

Note that there will be no lottery if neither you nor Other puts any tokens in P2. In that case phases 2, 3 and 4 will not take place, the round ends here and your earnings at the end of this round amount to 1000 tokens from your P1-tokens (10 euros).

#### *Phase 2: Lottery, based on tokens in P2*

In this phase, the computer will perform the lottery, based on the tokens put into P2, to select and announce the winner.

#### *Phase 3: Winner of lottery chooses a percentage*

In this phase, only the winner of the lottery must make a decision, which consists of choosing a percentage. This percentage determines the share of the P1-tokens of the loser of the lottery that will be transferred to the winner. The percentage must be an integer between 0 and 100. Also the values 0 and 100 are allowed. After the winner of the lottery has chosen the percentage, this decision will be known by the loser of the lottery. Also for the tokens obtained by the winner in this way it holds that: 100 tokens = 1 euro.

#### *Phase 4: Loser of lottery chooses a percentage*

In this phase, only the loser of the lottery must make a decision, which consists of choosing a percentage. This percentage determines the share of the P1-tokens of the loser of the lottery that will be destroyed. The percentage must be an integer between 0 and 100. Also the values 0 and 100 are allowed. Also for the tokens destroyed by the loser in this way it holds that: 100 tokens = 1 euro.

### *Example of determination of earnings in a round*

We illustrate with an example how earnings in a round are determined. Suppose that, in phase 1, you put 400 tokens in project P1 and 600 tokens in project P2, while Other (the participant you are paired with) puts 800 tokens in P1 and 200 in P2. This means that your chance of winning the lottery equals  $600/(600+200) = 3/4$  (75%), while Other's chance equals  $1/4$  (25%). Furthermore, assume that the outcome of the lottery, in phase 2, shows that you are the winner. Assume next that, in phase 3, you decide that 60% of the P1-tokens of Other are to be transferred to you. Assume next that, in phase 4, Other decides that 50% of her or his P1-tokens are to be destroyed. The transfer from Other to you is then equal to 240 tokens (60% of 400 tokens).

Since 100 tokens are worth 1 euro, your earnings at the end of this round then amount to:  $400/100 = 4$  euro (from your P1-tokens) plus  $240/100 = 2.40$  euro (via the transfer from Other), which amounts to  $4 + 2.40 = 6.40$  euro earnings in total.

Other's earnings in this example amount to:  $800/100 = 8$  euro (from Other's P1-tokens) minus  $400/100 = 4$  euro (due to the destruction) minus  $240/100 = 2.40$  euro (due to the transfer to you), which amounts to  $8 - 4 - 2.40 = 1.60$  euro earnings in total.

### *Summary*

There will be 10 rounds of decision-making. In each round, you will be randomly and anonymously paired with one other participant who will be a different person for all the 10 rounds. Furthermore, each round consists of four phases.

In phase 1, both you and the participant you are paired with will get 1000 tokens to allocate to two projects, P1 and P2. Each token put in P1 earns 1 eurocent (1 euro per 100 tokens). Tokens put in project P2 determine the chance of winning the lottery in phase 2. The winner of this lottery decides in phase 3 which percentage of the P1-tokens of the loser (of the lottery) is transferred to her or him (the winner). This decision will be known by the loser of this lottery. Next the loser of this lottery decides in phase 4 which percentage of her or his P1-tokens is destroyed. There will be no lottery if you as well as the participant you are paired with allocate 0 tokens to P2. In that case the round ends after phase 1.

At the end of the experimental session one of the rounds will be randomly selected to be paid out. The earnings from that round will be paid out in private and in cash.

To make you fully familiar with the determination of your earnings, we will shortly ask you to answer some questions. If you want, you can now look again into these Instructions. When you are ready, please click on [ready].

### **SM3. Additional statistical analysis**

In this section, we present the regressions reported in the main body of the paper as well as the results of basic treatment comparisons using nonparametric tests. All regressions report robust standard errors clustered at the session level to take into account within-session correlation. Because clustered standard errors are only valid asymptotically and lead to the rejection of the null hypothesis too often when there are fewer than thirty clusters, we compute the standard errors using bootstrapping (see Cameron, Gelbach, and Miller 2008).

Table SM2 presents the regressions used to compare conflict expenditures across the various games. In all regressions, the dependent variable is the subjects' individual, per-period, conflict expenditure. As independent variables, we use dummy variables indicating the game the subjects were playing in. Note that the omitted category is the TC-game. Regression A uses the data from Strangers whereas regressions B and C use data from Partners. All regressions use subject random effects. In the lower part of the table, we present the comparisons reported in the paper that cannot be immediately observed by looking at the regression output. Regression A includes the two additional treatments reported in footnotes in the paper. The treatment in which winners are forced to take all of losers' production is labeled as "Forced take" and the treatment in which there is no lottery and earnings are proportional to expenditures is labeled as "Proportional take". Regression C interacts the treatment dummy variables with a dummy variable that equals one if the group is a peaceful group (attained five or more periods without conflict) and zero if it is an aggressive group (attained less than five periods without conflict).

**Table SM2 – Differences in conflict expenditures across games**

Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Scorched Earth	-0.058	(0.032)	-0.010	(0.074)	-0.035	(0.053)
Resistance	-0.174**	(0.034)	-0.103	(0.054)	-0.105*	(0.046)
Forced take	0.056*	(0.022)				
Proportional take	-0.053	(0.038)				
Total Conquest × peaceful group					-0.479**	(0.025)
Scorched Earth × peaceful group					-0.445**	(0.044)
Resistance × peaceful group					-0.381**	(0.029)
Constant	0.631**	(0.022)	0.381**	(0.051)	0.545**	(0.025)
<i>Comparisons</i>						
Forced take – Proportional take = 0	0.108**	(0.032)				
Scorched Earth – Resistance = 0	-0.117**	(0.034)	-0.093	(0.057)	-0.070	(0.051)
Constant = 0.5	0.131**	(0.022)	-0.119*	(0.051)	0.045	(0.033)
$R^2$	0.085		0.018		0.398	
# of observations/subjects/clusters	3740/290/16		2060/206/12		2060/206/12	

*Note:* GLS regressions with individual conflict expenditures as the dependent variable and subject random effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

As reported in the paper, we can see in regression A that conflict expenditures are significantly higher in RE-Strangers than in both TC-Strangers and SE-Strangers, and that there is no significant difference between TC-Strangers and SE-Strangers. In regression B, we see that the significant differences between the games disappear with Partners matching. Similar results are obtained with nonparametric tests. If we do pairwise comparisons with Mann-Whitney U tests using mean conflict expenditures in each session as units we obtain the following results. Conflict expenditures are significantly higher in RE-Strangers compared to TC-Strangers ( $p = 0.029$ ) and SE-Strangers ( $p = 0.029$ ), and there is no significant difference between TC-Strangers and SE-Strangers ( $p = 0.343$ ). Conflict expenditures do not differ significantly between TC-Partners and SE-Partners ( $p = 0.886$ ), between TC-Partners and RE-Partners ( $p = 0.200$ ), or between RE-Partners and SE-Partners ( $p = 0.200$ ).



**Table SM3 – Differences in conflict expenditures across matching protocols**

Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Partners × Total Conquest	-0.250**	(0.037)	-0.094**	(0.029)	-0.168**	(0.037)
Partners × Scorched Earth	-0.202**	(0.067)	-0.087**	(0.026)	-0.127**	(0.021)
Partners × Resistance	-0.178**	(0.016)	-0.038	(0.027)	-0.086	(0.062)
Partners × Total Conquest × peaceful group			-0.455**	(0.023)		
Partners × Scorched Earth × peaceful group			-0.370**	(0.077)		
Partners × Resistance × peaceful group			-0.331**	(0.047)		
Constant	0.557**	(0.023)	0.557**	(0.023)	0.848**	(0.044)
$R^2$	0.094		0.302		0.020	
# of observations/subjects/clusters	4120/206/12		4120/206/12		4120/206/12	

*Note:* GLS regressions with individual conflict expenditures as the dependent variable and subject fixed effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

Table SM3 presents the regressions used to compare conflict expenditures and take rates across the two matching protocols. All these regressions use subject fixed effects. In regressions A and B, the dependent variable is the subjects' individual, per-period, conflict expenditure. In regression C, the dependent variable is the winners' per-period take rate. As independent variables, we use dummy variables indicating the matching protocol interacted with the game subjects were playing, and in regression B, also with a dummy variable that equals one if the group is a peaceful group and zero if it is an aggressive group.

We can see in regression A that conflict expenditures in each game are significantly lower with Partner matching. In regression B, we see that the significant difference in conflict expenditures induced by the matching protocol is always there in peaceful groups but not always in aggressive groups. Finally, in regression C, we see a significant difference in take rate in the TC-game and the SE-game but not in the RE-game. Similar results are obtained with nonparametric tests. If we do the abovementioned comparisons with one-sided Wilcoxon signed-rank tests using mean conflict expenditures in each session as units we obtain a significant difference between Partners and Strangers in all games at  $p = 0.063$  (both overall and among peaceful groups), which is the lowest obtainable  $p$ -value given the number

of independent observations. Among aggressive groups, we do not find a significant difference between Partners and Strangers ( $p \geq 0.125$ ). Running the same tests for take rates results in a significant difference in take rates Partners and Strangers in the TC-game and the SE-game ( $p = 0.063$  for both) but not in the RE-game ( $p = 0.125$ ).

Table SM4 presents the regressions used to compare the trend in conflict expenditures across the various games. In all regressions, the dependent variable is the subjects' individual slope obtained by regressing conflict expenditures on the period number. As independent variables, we use dummy variables indicating the game the subjects are playing (the omitted category is the TC-game). Regression A uses the data from Strangers whereas regressions B and C use data from Partners. In the regressions for Partners, we exclude the last period in order to avoid the clearly observed endgame effect. All regressions use subject random effects. In the lower part of the table, we present the comparisons reported in the paper that cannot be immediately observed by looking at the regression output. Regression A includes the two additional treatments reported in footnotes in the paper (labeled as "Forced take" and "Proportional take"). Regression C interacts the treatment dummy variables with a dummy variable that equals one if the group is a peaceful group and zero if it is an aggressive group.

As reported in the paper, we find that conflict expenditures significantly increase over time in TC-Strangers (regression A) but not in TC-Partners (regression B). Moreover, the time trend in TC-Strangers does not differ from that in SE-Strangers and RE-Strangers. Similar results are obtained with nonparametric tests. Specifically, we calculate the Spearman's correlation coefficient between the conflict expenditures of each subject and the period number in order to use the session means of these coefficients as the units of nonparametric tests. We ran pairwise comparisons between the three games using Mann-Whitney U tests but we found a significant difference in neither Strangers ( $p \geq 0.200$ ) nor Partners ( $p \geq 0.486$ ). Thus, unlike regression B, the nonparametric test does not detect a difference between TC-Partners and RE-Partners. If we run a one-sided Wilcoxon signed-rank test to evaluate whether the time trends in the TC-game are increasing significantly, we obtain a significant result TC-Strangers ( $p = 0.063$ ) but not for TC-Partners ( $p = 0.563$ ).

**Table SM4 – Differences in the trend of conflict expenditures across games**

Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Scorched Earth	-0.011	(0.007)	0.000	(0.001)	0.002	(0.013)
Resistance	-0.007	(0.006)	-0.015**	(0.004)	-0.016**	(0.006)
Forced take	-0.018**	(0.003)				
Proportional take	-0.019**	(0.004)				
Total Conquest × peaceful group					-0.031**	(0.010)
Scorched Earth × peaceful group					-0.042**	(0.011)
Resistance × peaceful group					-0.022**	(0.006)
Constant	0.019**	(0.003)	0.000	(0.002)	0.011**	(0.006)
<i>Comparisons</i>						
Forced take – Proportional take = 0	0.001	(0.003)				
Forced take + constant = 0	0.001	(0.001)				
Proportional take + constant = 0	-0.001	(0.002)				
$R^2$	0.063		0.027		0.160	
# of observations/subjects/clusters	290/290/16		206/206/12		206/206/12	

*Note:* GLS regressions with individual time trends (i.e., the slope obtained by regression conflict expenditures on periods) as the dependent variable and subject random effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

Table SM5 presents the regressions used to compare the trend in conflict expenditures across the two matching protocols. In both regressions, the dependent variable is the subjects' individual slope obtained by regressing conflict expenditures on the period number in a given matching protocol (i.e., each subject has a slope for Strangers and one for Partners). We omit the last period when calculating the slopes due to the endgame effect in Partners. As independent variables, we use dummy variables indicating the matching protocol interacted with the game subjects were playing, and in regression B, also with a dummy variable that equals one if the group is a peaceful group and zero if it is an aggressive group. Both regressions contain subject fixed effects.

**Table SM5 – Differences in the trend in conflict expenditures across matching protocols**

Independent variables	(A)		(B)	
	coef.	s.e.	coef.	s.e.
Partners × Total Conquest	-0.019**	(0.003)	0.000	(0.008)
Partners × Scorched Earth	-0.006	(0.010)	0.009	(0.011)
Partners × Resistance	-0.028**	(0.008)	-0.014*	(0.006)
Partners × Total Conquest × peaceful group			-0.054**	(0.017)
Partners × Scorched Earth × peaceful group			-0.049*	(0.020)
Partners × Resistance × peaceful group			-0.031**	(0.003)
Constant	0.013**	(0.003)	0.013**	(0.003)
$R^2$	0.057		0.125	
# of observations/subjects/clusters	412/290/12		412/290/12	

*Note:* GLS regressions with individual time trends (i.e., the slope obtained by regression conflict expenditures on periods) as the dependent variable and subject fixed effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

We can see in regression A that the time trend in conflict expenditures is significantly lower with Partner matching in the TC-game and the RE-game but not the SE-game. In regression B, we see that peaceful groups display a smaller time in all games whereas this is the case in aggressive groups only in the RE-game. Similar results are obtained with nonparametric tests. As before, we calculate the Spearman’s correlation coefficient between the conflict expenditures of each subject and the period number and then use the session means of these coefficients as the units of nonparametric tests. If we do the abovementioned comparisons with one-sided Wilcoxon signed-rank tests we obtain an overall significant difference between Partners and Strangers in the TC-game and the SE-game ( $p = 0.063$  for both) but not in the RE-game ( $p = 1.000$ ). Among peaceful groups, we find a significant difference between Partners and Strangers in all games ( $p = 0.063$ ), whereas among aggressive groups, we find a significant difference only in the RE-game ( $p = 0.063$ , otherwise  $p \geq 0.313$ ).

Table SM6 presents the regressions used to compare earnings across the various games. In all regressions, the dependent variable is the subjects’ individual, per-period, earnings. As

independent variables, we use dummy variables indicating the game the subjects were playing (the omitted category is the TC-game). Regression A uses the data from Strangers whereas regressions B and C use data from Partners. All regressions use subject random effects. Regression A includes the two additional treatments reported in footnotes in the paper (labeled “Forced take” and “Proportional take”). Regression C interacts the treatment dummy variables with a dummy variable that equals one if the group is a peaceful group and zero if it is an aggressive group.

As reported in the paper, earnings are significantly higher in RE-Strangers than in TC-Strangers and there is not a significant difference between TC-Strangers and SE-Strangers (regression A). In Partners, there are no significant differences between games (regression B). Mann-Whitney U tests using session means as units confirm that earnings are higher in RE-Strangers compared to TC-Strangers ( $p = 0.057$ ) and SE-Strangers ( $p = 0.029$ ), and that there is no significant difference between TC-Strangers and SE-Strangers ( $p = 0.686$ ). In Partner, conflict expenditures do not differ significantly between games ( $p \geq 0.200$ ).

**Table SM6 – Differences in earnings across games**

Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Scorched Earth	-0.031	(0.034)	-0.077	(0.071)	-0.065	(0.042)
Resistance	0.097*	(0.041)	0.026	(0.055)	0.020	(0.043)
Forced take	-0.056*	(0.022)				
Proportional take	0.053	(0.038)				
Total Conquest × peaceful group					0.479**	(0.025)
Scorched Earth × peaceful group					0.486**	(0.042)
Resistance × peaceful group					0.401**	(0.032)
Constant	0.369**	(0.022)	0.619**	(0.051)	0.455**	(0.033)
$R^2$	0.021		0.001		0.244	
# of observations/subjects/clusters	3740/290/16		2060/206/12		2060/206/12	

*Note:* GLS regressions with individual earnings as the dependent variable and subject random effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

Table SM7 presents the regressions used to compare earnings across the two matching protocols. All these regressions use subject fixed effects. In both regressions, the dependent variable is the subjects' individual, per-period, earnings. As independent variables, we use dummy variables indicating the matching protocol interacted with the game subjects were playing, and in regression B, also with a dummy variable that equals one if the group is a peaceful group (attained five or more periods without conflict) and zero if it is an aggressive group (attained less than five periods without conflict).

We can see in regression A that earnings significantly higher with Partner matching in all games. In regression B, we see that peaceful groups display higher earnings in all games whereas in aggressive groups this is the case only in the TC-game. Similar results are obtained with one-sided Wilcoxon signed-rank tests using session means as units. We find a significant difference between Partners and Strangers in all games, overall and among peaceful groups ( $p = 0.063$  in all cases). Unlike in regression B, among aggressive groups, there is a significant difference between Partners and Strangers in the SE-game ( $p = 0.063$ ) but not in the TC-game ( $p = 0.125$ ) or the RE-game ( $p = 1.000$ ).

**Table SM7 – Differences in earnings across matching protocols**

Independent variables	(A)		(B)	
	coef.	s.e.	coef.	s.e.
Partners × Total Conquest	0.250**	(0.037)	0.090*	(0.036)
Partners × Scorched Earth	0.204**	(0.059)	0.027	(0.026)
Partners × Resistance	0.179**	(0.041)	0.003	(0.037)
Partners × Total Conquest × peaceful group			0.467**	(0.051)
Partners × Scorched Earth × peaceful group			0.565**	(0.051)
Partners × Resistance × peaceful group			0.414**	(0.033)
Constant	0.391**	(0.019)	0.391**	(0.019)
$R^2$	0.055		0.174	
# of observations/subjects/clusters	4120/206/12		4120/206/12	

*Note:* GLS regressions with individual earnings as the dependent variable and subject fixed effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

Tables SM8-SM10, reproduces the regression from the main body of the paper that evaluates the effect of post-conflict behavior on the probability of attaining a peaceful relation in TC-Partners (SM8), SE-Partners (SM9), and RE-Partners (SM10). Specifically, they are Probit regressions with a dependent variable that equals one if a pair of subjects  $i$  and  $j$  achieve peace in period  $x + 1$  and zero otherwise. Given that as *all* peaceful relationships are preceded by a period in which one of the two players chose not to fight, we look only at cases where  $j$  does not spend points on conflict. As independent variables we use dummy variables indicating (i) whether  $i$  chose low conflict expenditures (below the median) and (ii) whether  $i$  chose a low take rate (below the median), and in SE-Partners and RE-Partners, (iii) whether  $j$  chose a high destruction rate (above the median). Regression A is run for periods  $x \leq 5$ . As a robustness checks, regression B shows the results using all periods ( $x \leq 10$ ) and regression C shows the results using the continuous version of the independent variables (i.e., the amount  $i$  did not invest in conflict,  $y - c_i$ , the fraction  $i$  did not take,  $1 - t_i$ , and  $j$ 's destruction rate,  $d_j$ ).

**Table SM8 – Probability of attaining peace in TC-Partners**

Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Low conflict expenditures	0.116	(0.656)	0.164	(0.531)	-1.138	(1.628)
Low take rate	1.362**	(0.526)	1.031*	(0.498)	3.864**	(1.146)
Constant	-1.607*	(0.655)	-1.770**	(0.600)	-1.626*	(0.768)
Pseudo $R^2$	0.193		0.119		0.355	
# of observations/subject pairs	33/20		49/24		33/20	

*Note:* GLS regressions with individual earnings as the dependent variable and subject random effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

**Table SM9 – Probability of attaining peace in SE-Partners**

Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Low conflict expenditures	1.067	(0.570)	0.907*	(0.437)	0.756	(0.446)
Low take rate	1.526**	(0.520)	1.363**	(0.368)	0.798**	(0.297)
High destruction rate	0.539	(0.419)	0.598	(0.409)	0.168	(0.573)
Constant	-1.900**	(0.490)	-1.838**	(0.400)	-1.306**	(0.419)
Pseudo $R^2$	0.175		0.176		0.026	
# of observations/subject pairs	36/17		39/18		36/17	

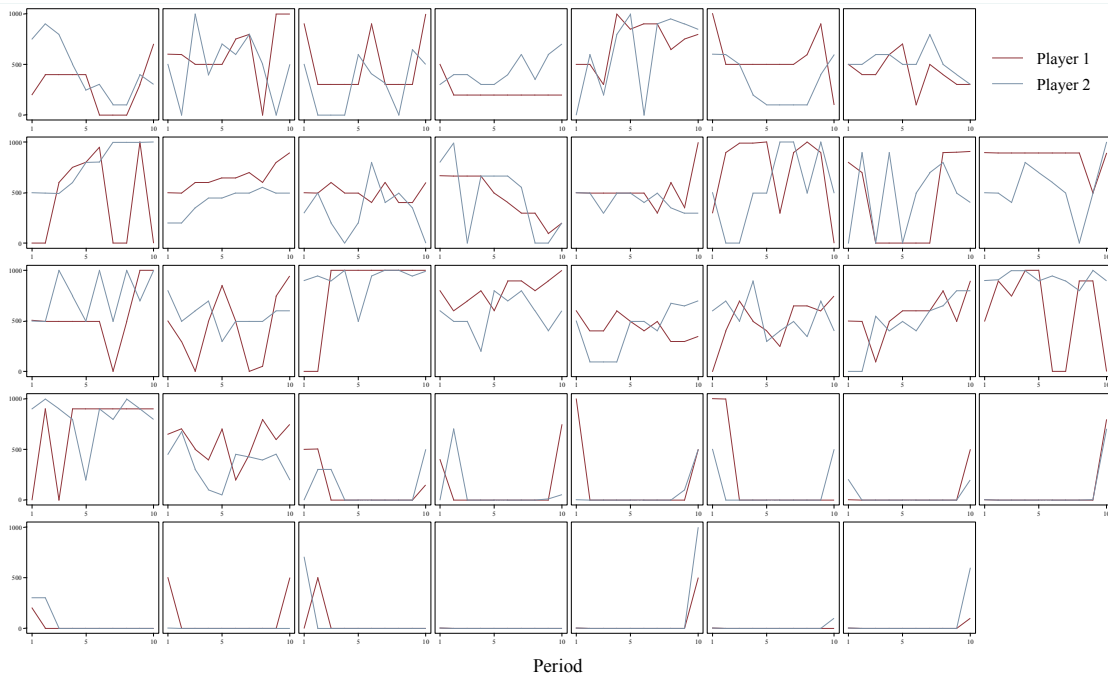
*Note:* GLS regressions with individual earnings as the dependent variable and subject random effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

**Table SM10 – Probability of attaining peace in RE-Partners**

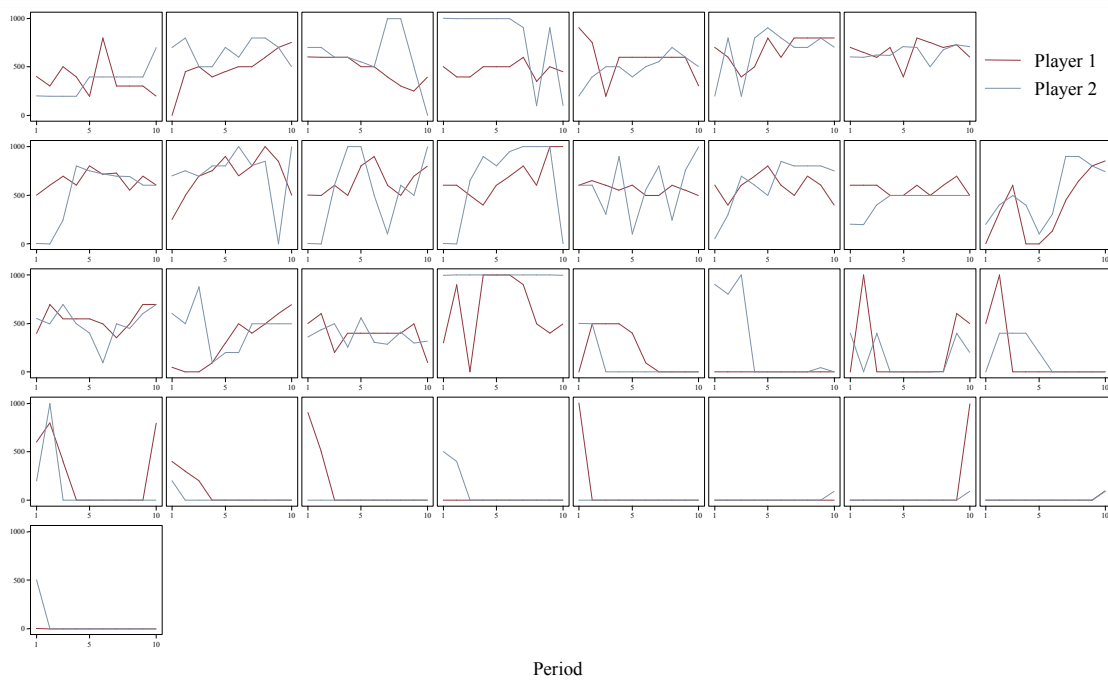
Independent variables	(A)		(B)		(C)	
	coef.	s.e.	coef.	s.e.	coef.	s.e.
Low conflict expenditures	1.041**	(0.391)	1.162**	(0.421)	1.335*	(0.625)
Low take rate	-0.466	(0.527)	-0.148	(0.576)	0.491	(0.954)
High destruction rate	-0.259	(0.547)	0.511	(0.473)	0.411	(0.572)
Constant	-0.668	(0.626)	-1.418	(0.598)	-1.454	(0.820)
Pseudo $R^2$	0.101		0.128		0.078	
# of observations/subject pairs	41/22		51/23		41/22	

*Note:* GLS regressions with individual earnings as the dependent variable and subject random effects. Standard errors are shown in parenthesis. Asterisks indicate significance at 1 (\*\*) and 5 (\*) percent.

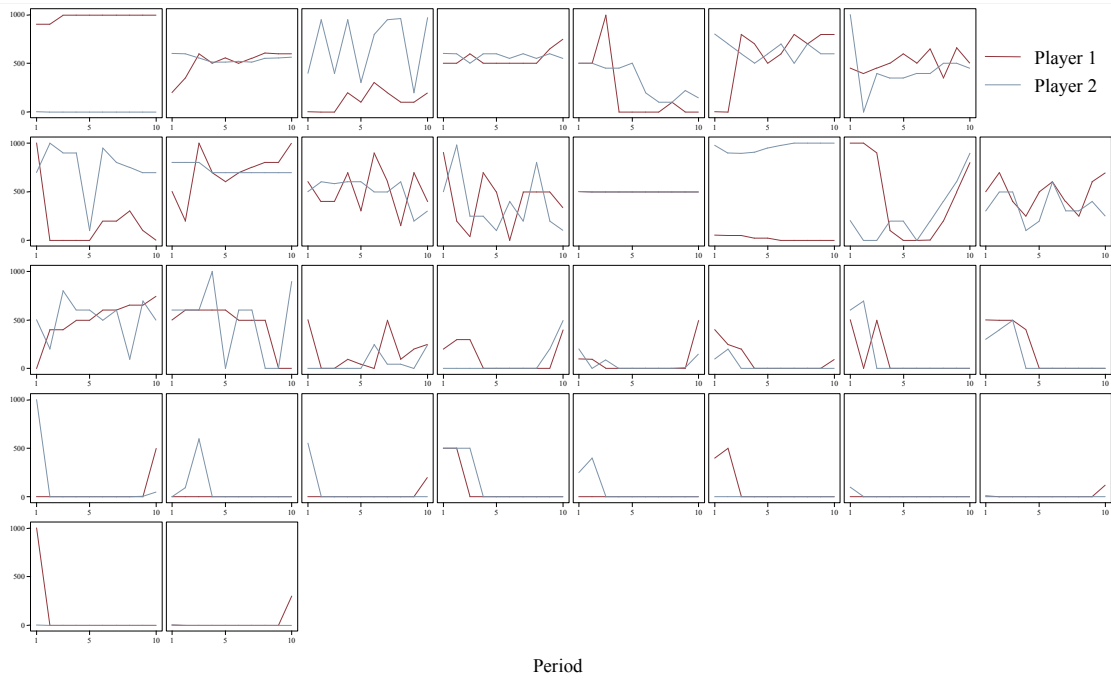




**Figure SM1 – Conflict expenditures per subject in each group in TC-Partners**



**Figure SM2 – Conflict expenditures per subject in each group in SE-Partners**



**Figure SM3 – Conflict expenditures per subject in each group in RE-Partners**

## References

- Cameron, A. Colin, Jonah B. Gelbach, and Douglas L. Miller (2008). Bootstrap-Based Improvements for Inference with Clustered Errors. *Review of Economics and Statistics* 90: 414-27.
- Fischbacher, Urs (2007). z-Tree: Zurich Toolbox for Ready-made Economic Experiments. *Experimental Economics* 10: 171-178.