Pointless Vendettas

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Abstract

We introduce the experimental *vendetta game*. Two groups of four players each interact over ten identical rounds. In each round each player decides whether or not to reduce the payoff of each member of the other group, at an own cost. Reducing payoffs entails no material benefit for either the player or his group and is motivated by nastiness. Over the rounds, however, players can use reductions to avenge earlier transgressions. Fear of retaliation keeps destruction rates low (13%). The introduction of a symbolic reward, however, trebles the frequency of hostile acts (40%).

Keywords

Conflict, group behaviour, spite, laboratory experiments.

JEL Classification Codes

C90, D74, Z13.

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1. Introduction

In societies with strong clan-based structures and weak central governments, blood feuds are still common even in the modern age. From time to time dramatic cases hit the news. In 2002 a longstanding dispute in the province of Sohag, Egypt, culminated in the murder of 22 members of one family by a rival clan. Reportedly, the feud had been sparked by a fight between children eleven years earlier. In 2009 in the village of Bilge, southeast Turkey, 44 attendants of a wedding party were massacred by another family, allegedly because the bride refused to marry one of theirs. In both cases the event that triggered the hostilities was relatively trivial, but the resulting cycle of revenge was devastating.

Deadly vendettas are only one instance of persistent group conflict with the potential to escalate. Countless other examples exists: Mobbing and sabotage at the workplace, gang rivalries among teenagers or football supporters – very often fierce levels of conflict are held up even after the origin of the dispute has long become obscure. What is also notable in these examples is the absence of an economic rationale, that is often assumed to be the main driver of conflict. Economic theory models of conflict typically assume that war is a struggle for a resource (e.g. (Grossman (1991), Acemoglu and Robinson (2000, 2001), Garfinkel and Skaperdas (1996)). Often it is possible, though, to interpret the commodity in question also as an immaterial asset, like religious or ethnic dominance, or a combination of both (Esteban and Ray (2005)). The puzzle remains why we observe so much immensely costly fighting in the world, though economic efficiency would normally favour peaceful settlement.[1] Seemingly, feuds can emerge for no material reason and then develop a dynamic of their own.

The above examples are cases in which it is most likely that the root of conflict is outside the realm of economic reasoning, though even here, in the Turkish case there were rumours of a land dispute underlying the massacre. In the broader context of violent conflict material and immaterial causes of war are even harder to separate empirically. Virtually every conflict in the world involves some economic resource (land, oil, minerals, etc.). So it is easy to blame warfare on economic interests. However, the presence of material resources in a war does not imply causality, moreover economic sense of a conflict diminishes rapidly when taking costs and destruction into account.[2] It is well possible that conflict would emerge even in absence of economic factors, driven solely by immaterial forces like national pride, honour, matters of principle, religion, ideology, or hatred.

[1] see Fearon (2007) and the literature discussed therein for attempts to solve the puzzle. The empirical literature is inconclusive. Collier, Hoeffler, and Rohner (2008) find that economic resources are more likely to be the constraint rather than the motivation of civil conflict, departing from the view two of the authors had expressed earlier (Collier and Hoeffler (1998)).

[2] History is full of examples of murderous wars fought over the most trivial of matters. In 1325 a group of soldiers from Modena invaded Bologna to steal a wooden bucket. This enraged the Bolognan leaders so much that they sought revenge, resulting in a 12-year war that killed thousands. Bologna never got back their bucket. Historians have not resolved what was the significance of the ordinary-looking device.

In this paper we study the motives underlying hostile group relationsships in a novel way. In a laboratory experiment we set up an environment in which conflict can emerge and be sustained. We create the experimental environment so that we can *rule out* economic interest as a potential cause for war. To this end, we introduce the *vendetta game.* There are two groups of four players each, interacting with one another for ten identical rounds. In each round each player receives the same endowment and then decides whether or not to reduce the payoff for each member of the other group, at an own cost. Reducing the other group's payoff entails no material benefit for the destroyer or his or her group; it is a purely destructive and hostile act. In the repeated interaction, the members of the group that has been hit can retaliate by destroying money of the perpetrator's group in the next round. Destruction and retailation can only take place at the group level; players cannot single out individual members of the other group for punishment.

Materially, destruction in the vendetta game is pointless; there is no gain to be had from it, neither for oneself nor for the own group or for society as a whole. Other conventional motivations to harm others are also ruled out. There is no inequality in the original distribution of endowments, hence envy or inequity aversion play no role. There is no selfish behaviour to be punished, since own-income oriented individuals would not destroy money in the first place. So high intensity of conflict in this game would be strong evidence that material incentives are not a necessary condition for conflict. Note that most immaterial potential drivers of hostility are also eliminated. The groups in the experiment are purely artificial and share no history of dispute. Interaction is anonymous, hence ethnic, religious or ideological differences are ruled out. What is left are pure spite and nastiness to spark an intergroup conflict, and cycles of retaliation to keep it alive.

What prediction would we derive from the existing experimental literature? To our knowledge a similar setup has not been tried before. Some studies have found that people are willing to pay for destroying other people's money in one-shot designs, out of inequity aversion (Zizzo and Oswald (2001), Zizzo (2004)) or nastiness and spite (Abbink and Herrmann (2009); Gaechter and Herrmann (2006, 2009)). The few studies that involve cycles of retribution, on the other hand, found fear of retaliation to *prevent* lasting conflicts, in individual joy-of-destruction games (Abbink and Sadrieh (2008)), or public good games with multiple-round punishment (Nikiforakis and Engelmann (2008)). None of the settings, however, involves a pointless intergroup conflict as it is at the heart of the present study.

We conduct two treatments of our experiment. In both treatments the eight players in a pair of groups play ten rounds of the vendetta game. In each round, each player can destroy 10 points of the endowment of each member of the other group. The own costs of the destructive act are also 10 points. In this treatment destructions are motivated only by the visceral pleasure individuals feel when hurting others. In a second treatment we add an individual incitement to destroy money, to model exogenous symbolic rewards a person might reap for carrying out a destructive act, like social prestige or honour. We model this, in an abstract way, in a second

treatment with the *pointless prize draw*. Among all players in each group who reduced the other group's payoff, a "winner" of a prize of 5 points is drawn. Since the prize is smaller than the fixed destruction costs, there is no material benefit in destroying money to chase the prize. It may serve as a device to reduce the *moral* costs of hostility, though. A player who has a preference for nasty actions, but shies away from them for either fear or scruples, may use this "biscuit" to justify destruction before his or her own conscience.

Conflicts without economic motivations have not been studied in the experimental literature. In the few existing laboratory studies on conflict war is modelled as a contest for an economic resource (Durham, Hirshleifer and Smith (1998), Duffy and Kim (2005), Abbink and Brandts (2008), Lacomba et al. (2008)), based on rent-seeking style game-theoretic models (Hirshleifer (1989, 1995), Neary (1994)). The results of rent-seeking experiments typically show greater conflict intensity than predicted by equilibrium theory, both between individuals and groups (Abbink et al. (2008), Ahn et al. (2008)). This suggests that contest settings trigger aggressive motivations beyond the strife to gain an economic advantage. The existing games, however, do not allow to unambiguously separate conflict arising from spite and nastiness from that stemming from material competition.

2. Model and the experimental design

The experiment was conducted at Atatürk University in Erzurum, eastern Turkey. The experiment was computerised, with software developed using the *RatImage* programming package (Abbink and Sadrieh (1995)). Subjects were recruited all over the university campus. Each subject was allowed to participate in only one session. Since this was the first economic experiment conducted at Atatürk University, no subject had participated in experiments similar to the present one. The subjects were undergraduate students from a wide range of disciplines, 86.1% were male and 13.9% female. Almost all participants were Turkish citizens born in the Eastern part of the country. In a post-experimental questionnaire we asked the participants about their general attitude to life. Among the 76.3% of subjects who answered this question almost half (49.1%) described themselves as "conservative", followed by "moderates" (19.1%). "Liberals" were only a minority (14.6%, the remainder were "other").[3]

In each session three pairs of groups (3x2x4 = 24 participants) played in parallel. The composition of the groups did not change, neither did the matching between groups. Subjects were not told who of the other participants were in the same group, but they knew that the groups did not change. The subjects were visually separated from one another by styrofoam boards to ensure that they could not influence each other's behaviour other than via their decisions in the game.

Each session began with an introductory talk. A research assistant read aloud the written instructions (reproduced in the appendix). The language used in the instructions was neutral.

[3] In Turkey, "general lifestyle" typically also involves the respondent's attitude towards Islam.

After the introduction subjects had to perform a quiz to make sure that all subjects had understood the rules of the game. Only after all subjects had correctly answered all questions the computer programme started play.

To avoid experimenter demand effects, the destruction choice was nested into a more time-consuming task that subjects performed individually. Note that because subjects had to work for their endowments, we also avoid the house-money effect. The task was adapted from Abeler et al. (2009). The subject was shown a table with a random sequence of 0s and 1s and had to count the number of zeros in the table. A subject earned 60 points for a correct answer at the first attempt, a wrong answer was penalised with a 5 point deduction. If the answer was still wrong after two attempts the subject earned 50 points. By restricting the penalties we made sure that no subject could incur absolute losses: A subject with two erroneous attempts would earn enough to cover the maximum damage of 40 points imposed by the other group plus destruction costs of 10 should the subject decide to destroy.

After a subject had completed the counting task he or she decided whether or not to reduce the other group's payoff. Reducing means that the payoff of each of the four members of the other group is reduced by 10 points, while the destroyer incurs costs of 10 points. Thus the cost-damage ratio was 1:4. After all players had simultaneously made their decisions in the round, feedback was given about the number of destructions carried out in the own and the other group.

In the prize treatment an additional payoff of 5 points was allocated to each group. The winner of this prize was drawn randomly among all group members who reduced the other group's payoff. Note that to be eligible for the prize of 5 points a subject had to incur the destruction cost of 10 points, thus the prize draw does not change the game theoretic prediction of no destruction in a subgame perfect equilibrium.

The total earnings of a subject from participating in this experiment were equal to the sum of all the profits he made during the experiment. A session lasted for about one hour (this includes the time spent to read the instructions). At the end of the experiment, subjects were paid their total earnings anonymously in cash, at a conversion rate of TL3 for 100 points. Subjects earned between TL10.00 and TL21.00 with an average of TL17.48, which is considerably more than students' regular wage in Erzurum.[4] At the time of the experiment, the exchange rate to other major currencies was approximately US-$0.65, €0.46, RMB 4.4, £0.40, and ¥62 for one Turkish Lira.

We conducted three sessions with each treatment. In each session three pairs of groups played in parallel. Since there is no interaction between the pairs of groups, each pair can be considered an independent observation. Thus we gathered nine observations per treatment,

[4] GDP per capita in the province of Erzurum is approximately US-$1200. Hence stakes in our experiments in relation to general income were higher than in most economic experiments.

comprising a total of 144 participants. For the statistical data analysis we use non-parametric tests applied to the independent observations.

3. Results

Figure 1 shows the destruction rates over the ten rounds of the experiment.[5] Destruction rates are low, but positive, in the baseline treatment. Towards the end of play the rates stabilise at around 10%, rising slightly in the very end. The addition of the prize draw, however, makes destruction rates shoot up, despite the prize being so tiny that even the winner loses from participating in the lottery. Destruction frequencies roughly treble, both over the whole experiment (up from 12.6% to 40.6%, significant at $p<0.001$, one-sided, Fisher's two-sample randomisation test) and in the first round (from 20.8% to 54.2%, significant at $p < 0.0001$ one-sided, Fisher's exact test).[6]

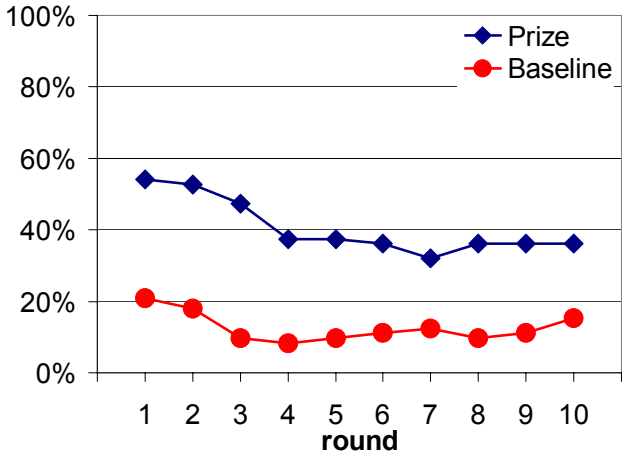

Figure 1. Average destruction rates over the ten rounds of the experiment

Both treatments show a similar dynamic of play, albeit at different levels. Destruction rates start relatively high in the first two rounds. They then quickly drop, but the downward trend is

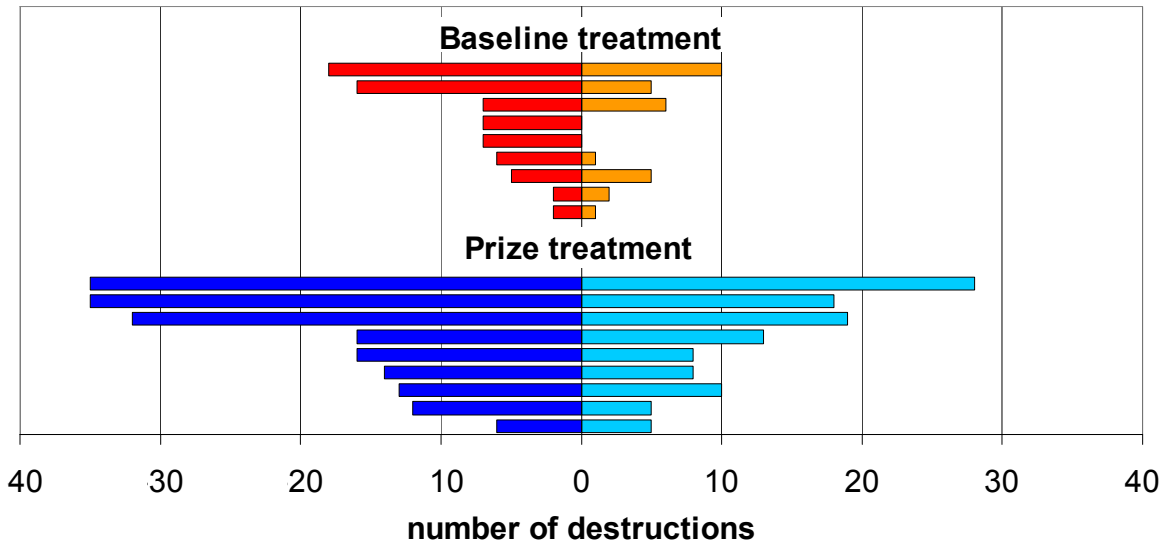

Figure 2. The left (darker) part of Each bar shows the total frequency of the group with the higher destruction rate in the pair (max. possible: 40), within each treatment the bars are sorted from the highest to the lowest number in each treatment.

[5] The raw data are provided in appendix B.

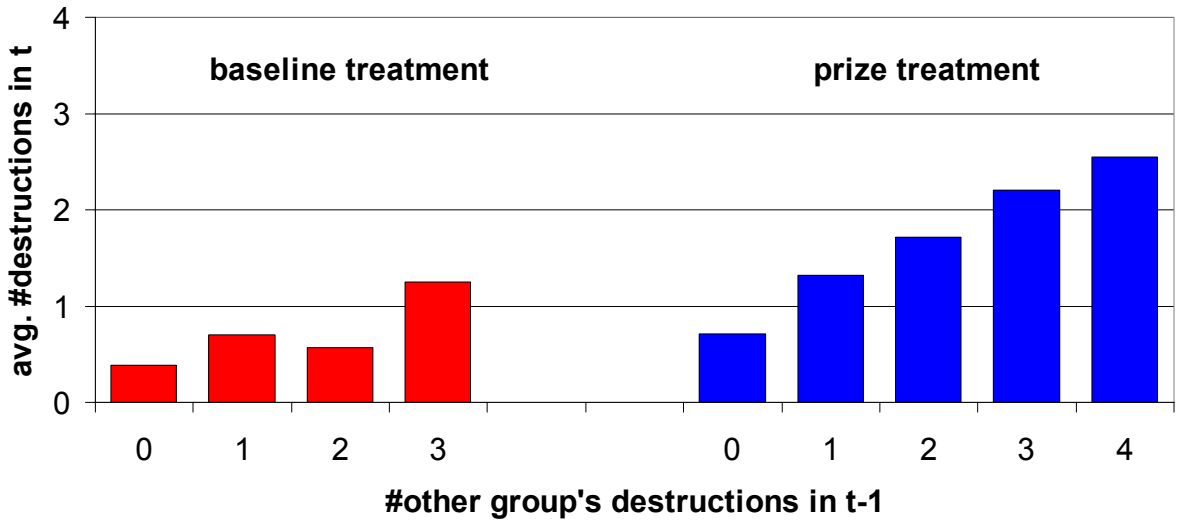

Figure 3. Average number of destructions in a group in a round t as a response to suffered destruction in round t-1. In the baseline treatment no goup observed 4 destructions in any previous round.

stopped quite soon. From about the fourth round on destruction rates are stable. We compute Pearson rank correlation coefficients for destruction rates over time, separately for the first and the second half of the experiment. In the first five rounds we can detect a systematic downward trend: In seven of eight observations of the baseline treatment for which a non-zero coefficient can be computed the coefficient is negative, in the prize treatment there are eight negative coefficients against only one positive one. Both relations are significant at $p < 0.05$ (one-sided), according to the binomial test. In the second half of the experiment there is even a majority of positive coefficients: five out of seven coefficients are positive in the baseline treatment, five out of nine in the prize condition. These relations are not statistically significant.

Figure 2 shows the destruction frequencies in the nine pairs of groups we have observed in each treatment. The figure shows a strong correlation between the destruction rates in the two groups of a pair, especially in the prize treatment. The Spearman rank correlation coefficients are $r=0.35$ (not significant) in the baseline and $r=0.89$ (significant at $p<0.01$) in the prize treatment. Thus, a high level of hostility in one group is responded by high destruction in the other group. This shows that destructions are frequently carried out in order to take revenge for suffered destructions in earlier rounds.

The role of retaliation is corroborated by the analysis in figure 3. The figure shows the immediate response of groups to the number of suffered destructions in the previous round. In both treatments there is a clear tendency to respond to greater experienced payoff reductions with an increase in the own group's destruction. This correlation is far more pronounced in

[6] Note that in the first round individual decisions are statistically independent observations, since no feedback about other subjects' behaviour has been given. Thus we apply the statistical test on individuals for first round data, and on group averages for the aggregate data.

the prize treatment, where the relationship between destructions suffered and carried out is almost proportional. In the baseline treatment, however, players respond only weakly if the suffered destructions are relatively low; they seem to shy away from punishing the group for the misbehaviour of individual members. This tolerance has two consequences: First, it prevents escalation into high-intensity conflict, as we observe them in some observations of the prize treatment. Second, it prevents aggression from disappearing completely as it did in the individual full-feedback setting of Abbink and Sadrieh (2008). Nasty players can carry out their hostile acts with relative impunity, since as long as destructions are few they are not regularly avenged.

4. Discussion

We designed a framework in which intergroup conflict can occur although we have stripped off all material reasons for engaging in hostilities. Our data show that, first, spite and nastiness alone can motivate hostile acts. However, without further incitement, the threat of retaliation brings down rates of conflict, helped by a certain degree of tolerance towards occasional transgressions. Hence the fear of attacks escalating into a long-term vendetta can restrain conflict, in absence of a central authority. In this sense our results support classic findings from anthropology. In an early work, for example, Evans-Pritchard (1940) observed that the Nuer people in southern Sudan had no central authority, but nevertheless managed to organise a prosperous and largely peaceful society, refuting the Hobbesian view that absence of a state would necessarily lead to anarchy and war. The central authority could be replaced by strong clan ties and well-accepted social norms of retributive justice in case of transgressions.[7]

The results from the prize treatment, however, show that peace maintained by the looming threat of disaster is fragile. Exogenous rewards, even though they provide no material incentive, can trigger stable and high destruction rates, exceeding one-third even towards the end of the experiment. Fear of retribution then has only a short-lived effect of preventing hostilities; people are inclined to pay back aggressive acts in equal measure.

Our study can only be a first step into the behavioural analysis of economically unmotivated conflicts. Several roads for future research spring into mind. First, attitudes towards conflict vary widely across cultures. The question arises whether our findings would be different in other locations than the one in eastern Anatolia where we conducted the experiment. A full-fledged cross-cultural experiment, though beyond the scope of this paper, could provide valuable insight. Second, the groups in our experiment are artificial, while in reality conflicts mostly arise between exogenously defined groups (families, tribes, or nations). We might expect conflict to be even more intense between naturally occurring groups with a history of conflict.

[7] See Nisbett and Cohen (1996) for a more recent study on feuds in the Southern states of the US in the 19th century.

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Appendix A. The Written Instructions

(original text in Turkish; additions and alterations for the prize treatment in square brackets)

We thank you for coming to the experiment. The purpose of this session is to study how people make decisions in a particular situation. During the session it is not permitted to talk or communicate with the other participants. If you have a question, please raise your hand and one of us will come to your desk to answer it. During the session you will earn money. At the end of the session the amount you will have earned during the experiment will be paid to you in cash. Payments are confidential, we will not inform any of the other participants of the amount you have earned.

Matching
The experiment consists of 10 identical rounds. Participants are divided into groups of four participants. Each group is matched with another group. Thus, there are always two groups interacting with one another in the experiment. The composition of the groups stays the same throughout the experiment. Also, your group is matched with the same other group during all 10 rounds.

The earnings part
In each round you can earn money. You will be shown a panel with a series of 0s and 1s. Your task is to count the zeros. For a correct answer you will earn 60 points. If your answer is wrong, 5 points will be deducted from your account and you can try again. If your second answer is again wrong, you will earn 50 points in that round.

The allocation part
After finishing the earnings part, each participant can decide whether or not to reduce the income of the other group. If you decide to reduce the other group's income, 10 points are deducted from the account of *each* member of the other group. It costs you 10 points to reduce the other group's income.

[Prize draw
After each round an additional prize of 5 points is awarded to each group. It is determined by a random draw which group member will receive the prize. Eligible are all group members who have reduced the other group's income in the round. If no member of a group has reduced the other group's income, then no prize is drawn in that group.**]**

Information
After each round you will be informed about the results of the round. You are told (1) how many members of the other group have reduced your group's income, (2) which member(s) in your group have reduced the other group's income, **[**(3) the outcome of the prize draw**]**, and (3) **[**(4)**]** your final earnings resulting from the decisions in the two groups. **Note:** In the information screen the other members of your group will be labelled player 2, 3, and 4. These labels are randomly reallocated each round. Thus the player labelled player 2 might be a different member of your group in different rounds.

Payoffs
At the end of the experiment, all points you have earned will be converted into cash at an exchange rate of YTL 3 for 100 points. In addition, you will receive a showup fee of YTL 3.

Appendix B. The Data

A.1. The Baseline Treatment

Group-pair 1

1	2	3	4	5	6	7	8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	0	1	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1
0	0	1	1	0	0	0	0
0	0	0	0	0	0	0	1
0	0	1	0	0	0	0	1
0	0	0	1	0	0	0	0
0	0	1	0	0	0	1	1

Group-pair 2

1	2	3	4	5	6	7	8
0	0	0	0	0	1	0	0
0	0	0	0	1	1	1	0
1	0	0	1	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	1	1	1	0
1	0	0	0	0	0	1	0
0	0	0	0	1	0	1	0
0	0	0	0	1	0	0	0
1	0	0	0	0	1	1	0
0	0	0	1	1	0	1	0

Group-pair 3

1	2	3	4	5	6	7	8
0	0	1	0	0	1	0	0
0	1	1	1	0	1	0	0
1	0	0	0	0	1	0	0
0	0	0	1	0	1	0	0
0	1	1	1	0	1	0	0
0	0	0	1	0	1	0	0
0	1	0	1	0	1	0	0
0	1	0	0	0	1	0	0
0	0	1	1	0	1	0	0
1	1	0	1	0	1	0	0

Group-pair 4

1	2	3	4	5	6	7	8
0	0	0	1	0	0	1	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0

Group-pair 5

1	2	3	4	5	6	7	8
1	0	0	1	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Group-pair 6

1	2	3	4	5	6	7	8
1	0	0	0	1	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

Group-pair 7

1	2	3	4	5	6	7	8
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	1	0	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	0
0	0	0	0	1	0	0	0

Group-pair 8

1	2	3	4	5	6	7	8
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	1	0	1	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	1	0	0	0	0	0	0

Group-pair 9

1	2	3	4	5	6	7	8
0	0	0	0	0	1	0	0
1	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	1	0	0
1	0	0	0	0	0	0	0
0	0	0	0	0	1	0	0
1	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0

The first row indicates the player number in the group pair. Players 1-4 form one group, players 5-8 the other one. The decisions for the ten rounds are then listed in the ten rows of each table, beginning with the second row for round 1. 0=Subject did not reduce the other group's payoff. 1=Subject reduced the other group's payoff.

A.2. The Prize Treatment

Group-pair 1

1	2	3	4	5	6	7	8
1	0	0	0	0	0	0	1
0	1	1	0	1	0	0	1
0	1	0	0	0	1	1	0
0	1	0	0	0	1	1	0
0	0	0	0	0	1	1	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	1	1	0
0	0	0	0	0	0	1	0

Group-pair 2

1	2	3	4	5	6	7	8
0	0	0	0	1	0	1	1
0	1	0	0	1	0	0	1
0	0	1	1	0	0	0	1
0	0	1	1	0	0	0	1
0	0	1	1	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	0	1	1	0	0	0	1
0	0	0	1	0	0	0	1

Group-pair 3

1	2	3	4	5	6	7	8
0	1	0	1	1	1	0	1
0	1	0	0	1	1	0	0
1	0	0	0	1	1	0	0
1	0	0	0	1	0	0	1
1	0	0	0	1	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	1	1	0	0
0	0	0	0	1	0	0	0
1	0	0	0	1	0	0	0
1	0	0	0	1	0	0	0

Group-pair 4

1	2	3	4	5	6	7	8
0	0	1	1	1	1	1	1
0	1	1	1	1	0	1	1
1	0	1	1	1	1	1	1
0	0	1	1	0	1	1	1
0	0	1	1	0	1	1	1
0	0	1	0	0	1	1	1
1	0	1	0	0	1	1	1
0	0	1	0	0	1	1	1
0	0	1	0	0	1	1	1
0	0	1	1	0	1	1	1

Group-pair 5

1	2	3	4	5	6	7	8
1	1	1	1	1	0	1	1
1	1	0	1	1	0	1	1
1	1	1	1	1	1	1	1
1	0	1	1	1	0	1	1
1	0	1	1	1	1	1	1
0	0	1	1	1	1	1	1
0	0	1	1	1	0	1	1
0	0	1	1	1	1	1	1
0	0	1	1	1	0	1	1
1	0	1	1	1	1	1	1

Group-pair 6

1	2	3	4	5	6	7	8
1	1	0	1	1	0	0	0
1	1	0	1	1	0	0	0
1	1	1	1	1	1	0	0
1	1	0	1	1	1	0	0
1	1	1	1	1	1	0	0
1	1	1	1	1	1	1	1
1	1	0	1	1	0	0	0
1	1	1	1	1	0	0	0
1	1	0	1	1	1	0	0
1	1	1	1	1	1	0	0

Group-pair 7

1	2	3	4	5	6	7	8
0	1	1	1	1	1	0	0
1	0	1	0	0	1	0	1
0	0	0	0	1	1	0	0
0	0	1	0	0	1	0	0
0	0	1	0	1	1	0	1
1	0	1	0	0	1	0	0
0	0	1	0	1	0	0	0
0	0	1	0	1	0	0	1
0	0	1	0	1	0	0	0
0	0	1	0	1	0	0	0

Group-pair 8

1	2	3	4	5	6	7	8
1	1	1	0	0	1	1	1
0	0	1	0	1	0	0	1
0	1	1	0	0	0	0	0
0	0	1	0	0	0	0	0
0	1	1	0	1	0	0	0
0	0	1	0	0	0	0	0
0	1	0	0	0	0	1	0
0	1	0	0	1	0	0	0
0	1	0	0	0	0	0	0
0	1	0	0	0	0	0	0

Group-pair 9

1	2	3	4	5	6	7	8
0	0	1	1	1	0	0	0
0	1	0	0	1	1	0	1
0	0	0	0	0	1	0	0
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	1	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0

The first row indicates the player number in the group pair. Players 1-4 form one group, players 5-8 the other one. The decisions for the ten rounds are then listed in the ten rows of each table, beginning with the second row for round 1. 0=Subject did not reduce the other group's payoff. 1=Subject reduced the other group's payoff.