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Студентка группы 41ЭК

Лысюк Мария Владимировна

Научный руководитель

доцент, PhD, Суворов А.Д.

Консультант

доцент, PhD, Белянин А.В.

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When Do Extremes Meet? A Model of Recruiting in Organization

Maria Lysyuk¹

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Abstract

The motivation of this work was to find when the composition of heterogeneous team is more efficient than homogeneous one from the perspective of comparing economists and non-economists. The author finds that extremes meet in the coordination games, where the benefits of interaction between participants are the most considerable. One of the reasons behind this result is that mixed groups behave more conformally in comparison with economists. One more question, which this paper is devoted to is the dilemma between profit-maximization behaviour and moral values. The findings show some contradictory results. When the question is touched upon the well-being of the whole society economists as a group behave more self-interestedly, thus making it more attractive to hire heterogeneous teams for the more balanced views. On the other hand, when the situation concerns people near them behaviour of economists is, surprisingly, less self-oriented in comparison with other groups.

¹Higher School of Economics, Economics Faculty (lyszyuk.m.v@gmail.com). I am grateful to Anton Suvorov and Alexis Belianin for their support, assistance and comments during design of the experiments and experimental sessions. I also acknowledge the financial support from the Higher School of Economics.

1 Introduction

By opinion of Alex Osborn (a founder of the technique, which we call today brainstorming) human creativity has increasingly become a group process. At the Kellogg School of Management this trend was quantified (Lehrer, 2012): for the past fifty years the level of group work has increased in more than 95 % of scientific areas. Moreover, the size of each time rises by 20% each decade. Today, regardless of the sphere of interest papers written by multiple authors are cited more than two times as many as papers written by individuals (Lehrer, 2012).

What is the nature of such a phenomena? One of the possible explanations is that all remaining problems are incredibly hard. A century ago geniuses alone could solve the most puzzling problems. In this way, for example in the mathematics Einstein is considered to be the last universal genius. Today a real professional must be increasingly specialized, because there is an excessive amount of information one mind can handle. Long ago Wright brothers could together construct an airplane, today the company needs hundred of engineers just to design and produce engines for airplanes. Beyond this, researchers who want to invent something absolutely new have to collaborate: the most interesting discoveries lie on the intersections of disciplines. « The larger lesson is that the increasing complexity of human knowledge, coupled with the escalating difficulty of those remaining questions, means that people must either work together or fail alone.» (Lehrer, 2012)

Moreover, not only in science, but also for real life problems many solutions are entrusted to groups. Why? Possibly, because of the widespread belief in general wisdom. In a world, where there is a great amount of information and facts, where people have to solve numerous of problems every day based on their value judgements, two or more heads may be really more beneficial than one. However, we still don't know the ideal team composition. Does it necessarily exist?

Mostly previous literature addresses the influence of characteristics of individuals in a group on the effectiveness of decision making. However, few or neither of them try to classify types of problems, which demand homogeneous or heterogeneous workforce. As predicted by Andrea Prat (2002) if agents solve any coordination types of problems

it is better to have a homogeneous team, on the other hand if the employees have a task of inventing something new, then it is better to have a heterogeneous team in order to benefit from being different. The aim of this paper is to learn when it is beneficial to form a homogeneous team of economists or heterogeneous team of non-economists.

In this experimental paper, firstly the ability of economists to solve economic problems in non-economic context will be checked. This will be made through the so-called weak-link game, which is of particular importance, because beyond the economic hidden motives this game is a coordination type of a game. It is not a big news that fast coordination is crucial for efficient solutions.

Moreover, in the further parts of experiment it is checked the ability of economists to solve problems where they should choose between profit maximization and moral values both from the perspective of the society and the individual side. Here it is expected that heterogeneous teams would be more efficient because of more balanced views in comparison with the homogeneous teams of economists.

The previous part of the experiment is encouraged by the observation that interconnection between ethics and economics is completely disregarded in the university course for economists, while this dependency could be significant (Frey et al., 1993). Authors argue that the interaction between ethics and market circumstances is important in the following situations:

- 1) ethical norms promote market transactions, creating atmosphere of trustworthiness;
- 2) in the case of asymmetric information and time inconsistency market transactions are facilitated in the long run by price system as well as by ethical norms;
- 3) in the case of market failures (externalities or public goods), where price system fails to guarantee the effective resource allocation, ethical norms matter a lot.

The paper is organized as follows. Section 2 reviews the literature related to the topic of the paper. Section 3 describes the experimental design and procedures. Section 4 states hypotheses, made in the experiment, and explains motivation behind them. Section 5 offers an overview of empirical analysis and results. Finally, section 6 concludes the paper.

2 Related Literature

2.1 Homogeneity and Heterogeneity of Workforce

This paper aims to understand the influence of heterogeneity on the successful coordination and cooperation among its members. Particularly, the author is interested in the peculiarities of economic way of thinking. In this section I will describe the precise contribution of this paper with respect to the existing team-theoretical and empirical literature, concerning the question of heterogeneity. After that I will turn to the findings about economists and the biases of their world outlook.

Firstly, we should somehow classify the cases in which it is appropriate to form homogeneous or heterogeneous team. The discussion about heterogeneity refers to the work of Lazear (1996). He argues that forming teams is efficient from the economic perspective when the possible gains from the complementarity of workers is obvious, when the specialization of each worker allows to accumulate task-specific human capital, or when the transmission of knowledge is valuable for the team members as a whole.

More than that, in the work of Hong and Page (2001) heterogeneity is associated with different perspectives (differences in how individuals represent problems by themselves) and heuristics (the algorithms they use to find solutions). The authors assume that in the absence of incentive or communication problems diverse approaches lead to optimal solutions of complex problems, despite the fact that individual is able to find the right solution alone. These assumptions provide valuable arguments of why collaboration of agents outperform individuals: by virtue of being different, individuals can improve each other's solutions to a problem. One more theoretical work (Prat, 2002) is devoted to the dilemma of employers to hire homogeneous or heterogeneous workforce. The model predicts that activities for which coordination is a major concern try to find new opportunities to solve existing problems will have a more heterogeneous team in order to maximize the probability of creating successful innovations.

When it is clear that there are benefits from making the heterogeneous team the next question is which characteristics should be taken into consideration. In a heterogeneous work group, members have various backgrounds and experiences. The previous

research in this field shows a great contribution to the analysis of the specific abilities of team members on its performance. Examples of differences might be demographic characteristics, such as age or sex; cultural diversity, professional characteristics, such as education and organization tenure.

Gender differences were touched upon in the work (Apesteguia et al., 2012), which explores the team composition through the analysis of the L'Oreal E-Strat online business simulation game. In this game teams, which consist of three members, compete for the prize of 10000 Euro. The study shows that winners mostly consisted of 2 men and 1 woman. Due to the fact that differences in performance are explained by the differences in decision-making, both investment in R& D (men's propensity) and in social sustainability initiatives (women's propensity) were crucial for the victory. This fact supports the assumption that for the successful performance the team should be heterogeneous. These results are advocated by Dufwenberg, M. and Muren, A. (2006). They find the evidence of a gender effect in group decisions: female-majority groups give more to the individual recipient in dictator game and also choose the equalitarian division more often than male-majority groups do. As the authors of the previous article they found the interesting but puzzling result that groups with two women and one man are the most generous.

Kahane, Longley, and Simmons (2013) in their work assess the effect of cultural diversity on team performance. Studying data from the National Hockey League, the authors evaluated that the benefits of players from European countries with various techniques exceed the communication costs and costs to integrate workers into a cohesive team. On the other hand, within foreign worker group, diversity reduces performance: when hiring foreign workers, it is better to have a higher concentration of workers from the same foreign countries (because of integration costs). The analysis of the solution of cases in teams (Watson et al., 1993) shows that the effects of cultural diversity can be relevant only in the long run period.

Beyond the pros of heterogeneity, much attention should be paid to the question of integration of such teams to the company and compliance with its culture. Thus, the integration and communication costs poorer performance of heterogeneous teams can occur because the differences among characteristics of groups members are positively

related to differences in their performance. This situation is modelled through the collaboration of an employer and employee (Mello and Ruckes, 2006). In particular, an employer should decide, whether to hire an employee, which is similar to her or not. It is significant for an employer, because heterogeneity in the opinion of the authors of the model implies that agents would search information in various sources. Thus, new information could be really helpful in decision-making process. However, when a superior chooses a project not preferred by the subordinate, the subordinate is assumed to exert less effort to implement it. The threat of the replacement could make employees stay quiet and promote conformance, which eliminates the benefits of heterogeneous teams. Still, the authors insist that heterogeneous groups display higher turnover.

The peculiarities of the work in a company with its structure and rules may cause some interesting effects from the perspective of heterogeneity. As for organization, the combination of types of workers, which have worked together or not, influences a lot team performance (Perretti, and Negro, 2007). Newcomers enhance exploration, innovation, and the chances of finding more creative solutions to team problems, old-timers increase exploitation, inertial behaviour and resistance to new solutions. Thus, trade-off and balance between exploration and exploitation is of particular importance. The authors showed that innovation comes from both new-comers and the novel combination of old-timers. The structure of hierarchy plays a great role (Athey et al, 2000). The homogeneity of upper-level workforce can create bias towards less initially able entry-level workers, but who are similar to them and, thus, better mentored by themselves. Therefore, they infringe upon minorities' interests, decreasing that way diversity at the entry-level. In the case of procrastination, when the work should be implemented in two periods, workers can put it off till the second period, thus reducing the quality of the outcome. The authors (Wu, Ramachandran and Krishnan, 2014) prove that the higher is the diversity in salience measure, the lower will be the effort distortion between periods, thus increasing quality.

The professional abilities play a great role for defining the success of the cooperation. The collaboration of high-ability and low-ability workers could be beneficial for the employer (Hamilton, Nickerson and Owan, 2003). Worker heterogeneity could

shape team productivity by facilitating mutual learning or by influencing the group production norm. Mutual learning suggests that more able workers may be able to teach the less able workers to be more productive, thereby enhancing their productivity. Such results prove that the teams with the high spread of the abilities are productive. Beyond that, there is a strong evidence of productivity spillovers (Mas and Moretti, 2006). Substituting a worker with below average permanent productivity with a worker with above average permanent productivity is associated with a 1 percent increase in the effort of other workers on the same shift. The finding of a positive spillover suggests that positive peer effects dominate free-riding. Thus, combining high-ability and low-ability agents provokes mutual learning as well as mitigates free-riding.

2.2 Biases of Economic Way of Thinking

One of the interesting questions, which psychologists and behavioural economists put is whether teaching economics with its rational models encourages self-interested behaviour in real life. One of the first experiments was conducted by playing the public good game. In the paper of Marwel and Ames (1981) it was revealed that first-year year students with major in economics are much more likely than students of other specializations to free ride and contribute a little part of the endowment to the public good. The ultimatum bargaining game (Carter and Irons, 1991), lies in the allocation of funds between allocator and receiver. If receiver agrees for the allocation, offered by the allocator, funds are divided in the declared proportion, otherwise all receive nothing. The study, concerned with this game, showed the same tendency: economists in comparison with non-majors are more likely to offer «unfair» allocations, which were rejected by the receivers. This trend was further explained by the analysis of how much professors of different disciplines (Frank et al., 1993) are eager to donate to private charities. Among economists 9,3% were reported giving no money to charity, while among other disciplines this varied between 2,9% and 4,2%. Also the interesting trend was noticed among students, playing prisoners dilemma (Frank et al., 1993). There the proportion of students, who decided not to cooperate, was 71,8% for economics majors, while just 47,3% for non-economic majors (which was significant at 0.01 level). Beyond this, even the group of economists is not homogeneous inside. The proportion of

uncooperative economists, studying in the first year is 53,7% and for students, who are graduating, is 40,2%. Moreover, the group of economists is heterogeneous inside by one more characteristic: the minor specialization matters. Thus, there is much difference between political economists and business economists in the question of donating funds to charity (Frey and Meier, 2003): political economists donate more than business economists. Ariel Rubinstein (2006) also notices some difference among the influence of specialization on behaviour of students. In the task of firing workers during recession, MBA students fired less workers, which is needed for profit maximization, following the motives of human nature in comparison with economists, who in general fired the quantity of workers, which is necessary for profit maximization.

Although a lot of evidence has been presented, there are some sceptic comments on the fact that economist behave less cooperatively in social dilemmas. Thus, the experiment with an envelope full of money was conducted in the work of Frank et al. (1996). The experiment was designed in a way that envelope with money and name of the owner was «lost» in one of the classrooms, where students of different specializations studied. The result of the experiment was that economists were even more likely to return the envelope to the owner in comparison with students of other majors. Consequently, this result contradicts the arguments for the non-cooperative behaviour of economists.

What is even more interesting is whether such self-interested behaviour is dictated by the selection bias (in other words, economics attracts special kind of people) or by indoctrination bias (in other words, that economics changes minds of people, which become more self-oriented). The experimenters (Frey et al, 1993) asked students the following question:

« At a sight-seeing point, reachable only on foot, a well has been tapped. The bottled water is sold to thirsty hikers. The price is one Swiss franc or one German franc per bottle. Daily production and therewith the stock are 100 bottles.

On a particularly hot day the supplier raises the price to SFr/DM 2 per bottle. How do you evaluate this price rise?»

About 85% of general population found this distribution unfair, while only 67% of advanced economics students treated it this way. Therefore, this is the evidence that

economists believe in the market and the price mechanism. However, about 65% of freshmen in economics found such a behaviour unfair, which allows to reject indoctrination hypotheses, thus confirming that if the tendency to self-interest behaviour among economists exist, than it occurs, because economics attracts certain type of people.

3 Experimental Design and Procedures

For discovering the issues the paper is devoted to a number of experiments was conducted. In this section will be given the design of the experiments and the motivation, which is led behind each of them.

General to all treatments in the experiment were the following rules. In the experiment teams among the participants were formed. Each team consisted of three participants. The participants did not know who was her partner in a team. Team composition remained the same during the whole experiment.

All experiment consists of five parts.

3.1 Part 1A.

The main motivation of this part of the experiment is to check how different groups (in our case a homogeneous group of economists and non-economists) as well as heterogeneous groups of economists and non-economists play coordination games. Coordination is one of the most important features of group behaviour. For the fast and effective decisions coordination is a must. The question is whether the nature of the task is a leading factor, which defines the efficiency of coordination, or the variety of opinions matters, when the ability to change your opinion in order to fasten coordination prevails. For the revealing the truth behind this question, the following treatment was conducted.

In Part 1A the participants have to solve the following task:

Imagine that you are an employee of the large consulting company. Your team consists of three participants, who work on one of the projects. Team participants simultaneously and independently choose the level of efforts to work on this project. The level of efforts is an integer, which varies from 1 to 7; the bigger numbers correspond

to bigger efforts.

The outcome of the projects defines by the minimum level of efforts in a team. The winnings U_i of each participant i are defined as follows:

$$U_i = 9 \cdot \min(e_1, e_2, e_3) - 5 \cdot e_i + 27, \text{ where}$$

e_1 - the level of efforts of the first participant;

e_2 - the level of efforts of the second participant;

e_3 - the level of efforts of the third participant;

e_i - the level of efforts of the participant herself.

In such a way the winnings are defined as difference between the result of team work on the project and individual costs from efforts.

The table of winnings:

Minimum level of efforts in a group							
	7	6	5	4	3	2	1
7	55	46	37	28	19	10	1
6	-	51	42	33	24	15	6
5	-	-	47	38	29	20	11
4	-	-	-	43	34	25	16
3	-	-	-	-	39	30	21
2	-	-	-	-	-	35	26
1	-	-	-	-	-	-	31

This interaction repeats in 5 rounds.

After each round of interaction you will be shown the minimum of efforts in each round and your winnings in this round.

Originally, this game is a so-called weak-link game (Van Huyck, 1990). As it can be seen from the payoff function there are 7 equilibriums in this game: $(e_1, e_2, e_3) = (1, 1, 1); (2, 2, 2); (3, 3, 3); (4, 4, 4); (5, 5, 5); (6, 6, 6); (7, 7, 7)$. First 6 of them are strictly Pareto ranked. Thus, dissatisfaction in a game can occur because of 2 reasons. Firstly, because the participants don't reach the equilibrium in each round, and secondly, because attained equilibrium could be Pareto dominated.

3.2 Part 1B.

Some extension was made in order to check, whether in the case of all types of groups introduction of leadership fastens coordination. Beyond this, we concern the question of conformity. Is it true that various types of group and people conform differently? This treatment allows us to explore this question by measuring the difference between the efforts of a leader and the efforts of the participant.

In Part 1B the participants have to solve the following task (which is the extension of the previous one):

This part differs from the previous one, because now the team has a leader. The leader is the first one to choose the level of efforts. After that two followers are informed about the level of efforts of the leader. Then followers simultaneously and independently choose own level of efforts. The possible level of efforts varies from 1 to 7 and the rules of getting the winnings are the same as in the previous part of the experiment.

After the interaction as in the previous round participants were shown the minimum level of efforts of the their team in one round and their winnings for the round. As in the previous part, the interaction repeated in 5 rounds.

3.3 Part 2.

The next part of the experiment is encouraged by the fact that economists feel free to talk about the «optimal level of corruption», « optimal level of emissions», the price of life. For all other people it seems odd to speak about it, human nature gets the best. However, economists understand that for the well-being it is useless to eliminate corruption at all, because the costs of its extermination could exceed the benefits of such a policy. Moreover, a popular opinion about the fact that life is priceless could lead in some cases to situation when it becomes free. For example, if we assume that the life is priceless, then how much should we pay to the victims of catastrophes, nothing at all? The economists realize this situation and prove that people do have the price of life, when for example they buy safer cars instead of less safer. As far as it can be revealed, by difference in price they exactly value the price of their own life.

This idea leads to the fact that in comparison with other people, the economists

will show resistance to the feelings of human nature (*ceteris paribus*) while choosing between optimal for the whole society solutions and solutions, which somehow relate to the sympathy to one of the sides of the problem.

In this part of the experiment, which lasts one round, participants had to solve the following problem.

Imagine that your group represents city administration of Nsk city. In Nsk there is an enterprise, which makes emission of harmful substances to the local river. Harmful substances negatively influence the health of people, local flora and fauna. For the evaluation of ecological damage the independent not engaged expert organization was hired. Moreover, the costs for the decrease of emissions were counted. The table represents the calculations of damage, which were prepared by professional ecologists and also the evaluation of total costs for the preservation of the level of emissions in the indicated limits:

Quantity of emissions per month, tons	10	20	30	40	50	60	70	80
Costs for sanitation per month , mm. rubles	167	133	103	77	55	37	23	13
Ecological damage per month, mm. rubles.	10	30	50	70	90	110	130	150

The city administration has to prescribe the enterprise any limit of the level of emissions in a range from 10 to 80 tons per month (divisible by 10) and insert comparable penalty for violation, so that the enterprise certainly will follow this constraint.

Which constraint will you choose? Take into account that this question has no right or wrong answers, different reasons could lead to different results!

Interaction among the participants of the experiment is as follows. At the beginning all participants of a team simultaneously and independently choose the limits of the emission. After that each of the players sees the limits suggested by another participant of his team. Then during 3 minutes you will have an opportunity to discuss the situation with your teammates in the chat and whenever possible to reach a consensus.

After 3 minutes of communication in the chat participants one more time offer the limits for the emission. The final decision of a group defines as the arithmetical mean of the offers made by the participants, rounded to the nearest 10.

For the participation in this part of the experiment you obtain the fixed winnings

at the rate of 100 rubles independently of decisions made by you and participants in your group.

Once more, this part of the experiment is encouraged by the idea that non-economists are not comfortable with such terms as «optimal level of emissions». It is assumed that non-economists would be more obliged to take care of the ecology in comparison with economists, thus the returns to heterogeneity will result in more balanced views in the team.

3.4 Part 3.

The implementation of this part of the experiment was motivated by the article of Ariel Rubinstein «A sceptic's comment on the study of economics» (2006). Being suspected in the way economics is taught, he conducted an experiment, where two measures were quantified:

- 1) are economists more self-interested in comparison with other students;
- 2) does framing effect influence even graduates?

Designing a problem of the necessity of firing workers in a company during recession he revealed that firstly, economists are really more self-interested in comparison with people of other specialisations. However, there is some heterogeneity among them: MBA students are less oriented to profit maximization in comparison with students from other economic specialisations. Beyond this, having presented information in the form of both formula and table, he revealed that even Harvard PhD students are different in their opinions, when they were presented this or that form of information. Consequently, the question about the accuracy of teaching economics evolves.

The previous part of the experiment pursued the interest of comparing the behaviour of economists, mixed groups and non-economists in the situations when personal interests are contrasted with the well-being of the society in general. However, this one opposes self-interest behaviour to the care of the people, who are situated behind, whose fortune depends on the principal. The well-being of certain people is interpreted in an other way in comparison with the well-being of the whole society. Expecting the self-oriented behaviour of economists and the change of their opinion in the cooperation with non-economists the following treatment was conducted:

In this part of the experiment, which lasts one round, participants had to solve the following problem.

Imagine that you are a vice-president of ILJK company. The company has administrative workers, who can not be fired, and 196 technical workers, who can be fired. The company was founded 5 years ago and is owned by three families. The work doesn't require specific knowledge and skills, so that for the preparation workers need only one week of trainings. All technical workers are within company during 3-5 years.

The company pays workers beyond the minimum wage. The average wage of technical workers of company ILJK is about 18000 rubles per month. The company provides the employees with the benefits, which are required by law.

Until today the company has obtained the high profit. As a consequence of long recession there is a significant drop in profits. Together with your team during management meeting you should decide, how many workers to fire. Before the acceptance of the decision your financial department has prepared the forecast of the expected profit of the company:

Number of the workers, who will continue to be employed (will be fired)	The expected monthly payoff of the company
0 (all will be fired)	Loss of 8 mm. rubles
50 (146 will be fired)	Profit of 1 mm. rubles
65 (131 will be fired)	Profit of 1,5 mm. rubles
100 (96 will be fired)	Profit of 2 mm. rubles
144 (52 will be fired)	Profit of 1,6 mm. rubles
170 (26 will be fired)	Profit of 1 mm. rubles
196 (nobody will be fired)	Profit of 0,4 mm. rubles

Take into account that employees which you will fire, most likely will not find job because of the high rate of unemployment in the country.

Interaction among participants.

At the beginning you choose necessary by your opinion number of participants, which you would like to leave out of 196 (simultaneously that does each teammate). After that you see, which decision seems to be «right» by other participants in your

team. Then in chat during 3 minutes with the participants in your team you discuss, which number of technical workers it is worth to leave.

After 3 minutes of chatting each participant offers the number of workers to leave one more time. The final decision of a team defines as the arithmetical mean of offers of its participants, rounded by the nearest number from the table.

For the participation in this part of the experiment you obtain the fixed winnings 100 rubles independently of solutions, made by you and your teammates.

This part of the experiment extended for the group decision was originally made in the work of Ariel Rubinstein (2006). As you can see the maximum of profit is reached by leaving 100 workers. However, any moral values could tend people to leave more workers. In this case the employer would lose some profit on the one hand, however this would allow her to fire less workers, which is more altruistic in the conditions of the recession and high level of unemployment.

3.5 Part 4.

Continuing the logic of the previous experiment, this part aims in addition to the self-interest behaviour of different groups to check if they tend to discriminate.

In this part of the experiment, which lasts one round, participants have to solve the following problem.

Imagine that you take part in the reorganization of one of the departments of company NNN. Because of the crisis the company has a limit amount of 290 units for wage. The information about employees of this department is represented in the table:

Member number	Number of participants	Labour productivity, Q	Wage, W	Availability of children	Gender	Age
1	1	15	120	-	Male	25
2	1	12	140	+	Male	55
3	1	14	120	+	Female	25
4	1	5	50	+	Female	30
5	1	5	50	-	Female	25
6	1	5	50	-	Female	30

At the beginning you will have to offer the list of workers to leave in the company by your opinion. Then your teammates obtain information about offers made by the participants of their group. After that during 3 minutes you will have to discuss with your partners in team, whom exactly to fire or leave. After the discussion each participant offers the list of workers, whom she would like to leave, once more. The final decision will be randomly chosen by computer from three final decisions, made by the participants of the team.

In the end of the game you will be shown the list of offers, which made each of the participants, gain of the whole team and also the winnings of each participant, which is equal to one third of the total profit of the company P , which is defined by the following formula:

$$P = 50 \cdot \sum_i Q - \sum_i W$$

In other words, for each unit, which the worker produces (where the maximum defines by the productivity of the worker) the employer gains 50 units of benefit. Costs are defined by the sum of wages, paid to all of the workers.

This part of the experiment as the previous one aims to check the relationship between moral values and egoistic ones. Particularly, there is a trade off between profit maximization and the responsibility for workers, who could remain without a job. Moreover, in addition to the previous part this one checks the discrimination effects: such as leaving the old and experienced worker and women with children.

3.6 Procedures

The experiment was conducted in May 2015 in the economic laboratory at the Higher School of Economics, Moscow. The experiment is computer based.² A total of 54 participants³ took part in our experiment. The variety of students from different universities as well as disciplines was tried to accomplish. Thus, the students from the following universities took part in the experiment:

²The experiment was conducted using z-Tree, a toolbox for ready-made experiments(see Fischbacher, 2007).

³All of them were students aged from 17 to 24 years old. There were 29 men and 25 women.

Higher School of Economics (41 participants) Moscow State University (3 participant) Financial University Under the Government of Russian Federation (1 participant) State Academic University for Humanities (1 participant) Moscow State Linguistic University (3 participant) Russian State University for the Humanities (1 participant) Moscow State Pedagogic University (1 participant) Russian Presidential Academy of National Economy and Public Administration (1 participant) Diplomatic Academy of the Russian Foreign Ministry (2 participants).

These participants represent the following fields of science: economics (33 participants), mathematics (12 participants), politics (2 participants), linguistics (3 participants), psychology (1 participant), law (1 participant), culturologist (1 participant) and other social sciences (1 participant).

A total of 18 teams of three participants were formed. There were combined homogeneous teams of economists, homogeneous teams of non-economists and heterogeneous teams of both economists and non-economists. In particular the composition of the teams was as following:

- 1) 8 homogeneous groups of economists;
- 2) 5 homogeneous groups of non-economists:
 - political scientist, mathematician, mathematician;
 - linguist, linguist, mathematician;
 - mathematician, mathematician, mathematician (2);
 - culturologist, mathematician, mathematician;
- 3) 5 heterogeneous groups of economists and non-economists:
 - economist, economist, mathematician;
 - economist, economist, political scientist;
 - economist, economist, sociologist;
 - law, linguist, economist;
 - economist, economist, sociologist

All students attended one of 4 experimental sessions following on an electronic invitation preliminary received by e-mail. From 9 to 15 participants took part in each session. The procedure was standard for economic experiments: after taking their seats in front of the computers, participants had to listen to the instructions, read aloud by

one of the experimenters. Specific instructions were read before each of the parts of the experiment. At the the end of the experiment we asked each participant to fulfil the questionnaire (see Appendix for acknowledgement with questions), which helped us to better understand the motivation behind the actions of the participants. Depending on the decisions made through the experiment, participants could earn "in-game monetary units", which were then converted at the exchange rate 1 i.m.u.=0,4 Rubles. By the end of the experiment, each participant earned about 500 Rubles depending on their performance and the treatment she took part in. On average each session lasted about an hour.

4 Hypotheses

Here will be described the hypotheses to all parts of the experiment.

4.1 Part 1A and Part 1B.

Hypothesis 1: In the both parts of the weak-link game mixed groups will coordinate with the highest level of efforts, group of economists will hold in-between position, while non-economists would coordinate with the lowest level of efforts.

The hypothesis is motivated by the fact that coordination games expect the ability to change your mind if you see that some other people behave in the way, which differs from your own. Thus, the effect of heterogeneity plays a great role. As for the comparison of economists and non-economists, the last one are considered mostly as a control group, because it is clear that such types of tasks are easier to solve for economists than for non-economists, who are considered to be a homogeneous group in this paper.

Hypothesis 2: After introducing the treatment with leadership the level of efforts will increase in all groups.

Including the leadership in the experiment, we make easier for participants to coordinate, because firstly there is a smaller number of people, who should choose the same level of efforts, and secondly, because signalling by leader her level of efforts lead to the narrowed set of possible choices for the remained participants.

Hypothesis 3: Groups of economists will behave less conformally in comparison with mixed groups and non-economists, as well as economists individually behave less conformally than non-economists.

Economists, being acquainted with the principles of Nash equilibrium and Pareto efficiency in a wide range of courses, will be sure how to behave properly, thus promoting non-conformally behaviour.

4.2 Part 2.

Hypotheses 4: By reaching a decision in groups economists will choose the quantity of emissions, which minimizes the total costs, while participants in mixed groups and noneconomists will not.

Assumed that economists behave in the self-interested way, they will minimize the costs of both enterprise and society, not concerning about ecology too much.

Hypotheses 5: By reaching a decision individually economists will choose the quantity of emissions, which minimizes the total costs, while non-economists will not.

It is expected to see the same tendency on the individual level too.

Hypotheses 6: After discussion in chat economists as a group will increase or state the quantity of emissions the same, while the mixed groups and groups of non-economists will decrease the quantity of emissions.

It is assumed that economists will take into consideration only the motives of cost minimization, while in other groups participants will be concerned about ecology too.

Hypotheses 7: In the mixed groups after discussion in chat economists will decrease the quantity of emissions in comparison with one chosen before the chat.

Moreover, we assume that non-economists will be able to influence the decision of economists to the reduce the amount of the emissions.

4.3 Part 3.

Hypothesis 8: By reaching the decision in group economists on average would choose the profit maximization number of workers, while non-economists as well as mixed group will choose the quantity less than that.

The hypothesis as previous one, tend to think of economists just as of profit maximizers.

Hypothesis 9: By reaching the decision individually economists on average would choose the profit maximization number of workers, while non-economists will choose the quantity less than that.

It is expected to see the same tendency also on the individual level.

4.4 Part 4.

Hypothesis 10: The economists will exhibit profit maximizing and discriminating behaviour in comparison with other groups as well as economists individually will be more self-interested in comparison with non-economists.

The design of the treatment is conducted in a way that obtaining the maximum profit is possible both in the situation when the principal could choose the woman with children and without, not loosing any additional profit now. However, it is assumed that the profit-maximization behaviour is oriented to the long run period, thus making economists discriminate.

5 Empirical Analysis and Results

5.1 Part 1A and 1B.

As it can be seen from the graph (Figure 1) there is a tendency that heterogeneous groups coordinate at the higher level of efforts in all rounds, except the last one, where the level of efforts produced by economists is beyond the level of heterogeneous teams. More than that, there is a gap in the forth round for economists and non-economists.

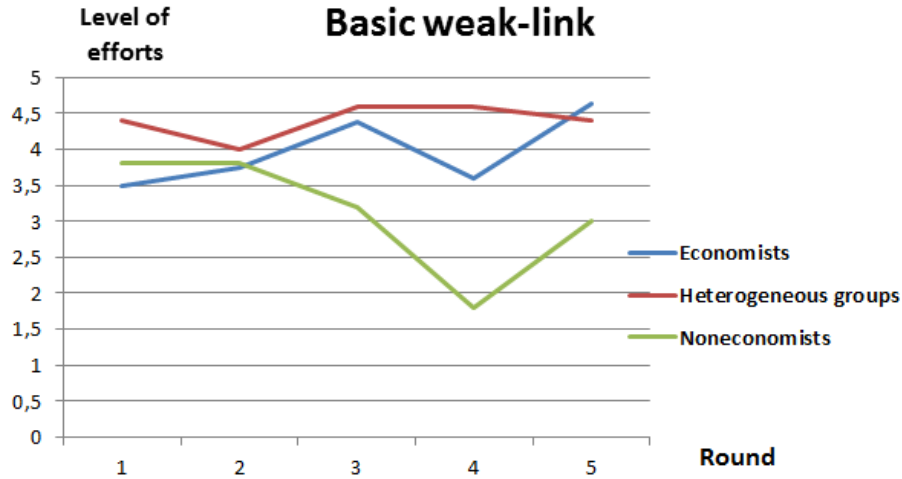


Figure 1: Average level of efforts in the basic treatment by round and groups

The one-way ANOVA test with Bonferroni corrections and one-way ANOVA with repeated measures⁴ show that the difference in means among three groups is significant (1% level), however there is no statistical significance between economists and non-economists. So, the *Hypothesis 1 is partially confirmed*.

Analysing behaviour of groups in the treatment with leadership (Figure 2) the tendencies remain the same as in the basic treatment (the heterogeneous groups coordinate with the highest levels of efforts, the economists occupy the medium position and the non-economist group coordinate at the lowest level of efforts). Moreover, these tendencies become clearer with the introduction of leadership.

⁴non-parametric tests are used because of the small number of observations

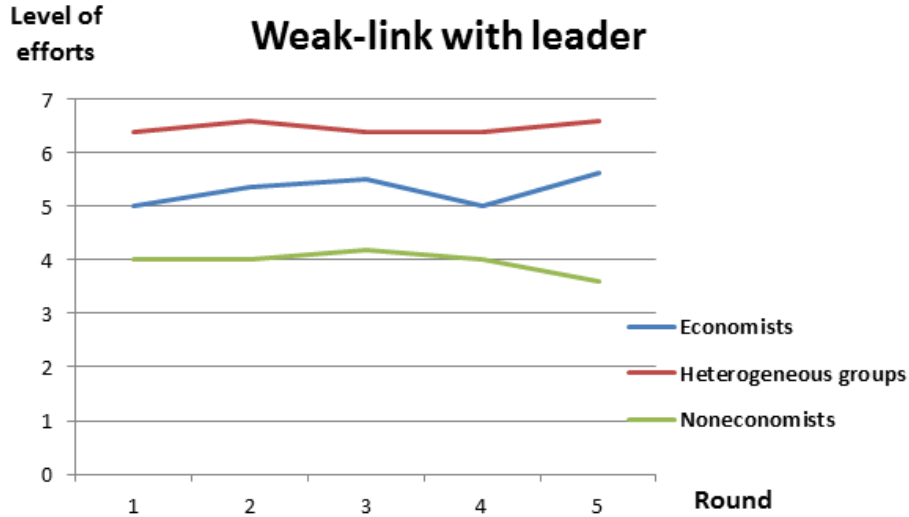


Figure 2: Average level of efforts in the treatment with leadership by round and groups

Providing one-way ANOVA test with Bonferroni corrections and one-way ANOVA with repeated measures show that the difference in means among groups is significant (1% level) as well as difference among all combinations of groups: economists and mixed groups, economists and noneconomists, mixed groups and noneconomists (at 5% level). Thus, *hypothesis 1 is confirmed*.

A number of studies show that (Gillet, Cartwright, Vugt, 2009) people in a treatment with leadership coordinate better than in basic one.

This hypothesis was checked in this paper by making panel regression with random effects (due to the fact that efforts are correlated among rounds and treatments in the same group). The results of panel regression are as follows (see Figure 3):

$$Efforts = \beta_0 + \beta_1 \cdot Economist + \beta_2 \cdot Mixed + \beta_3 \cdot Leadership, \text{ where}$$

Economist is a dummy variable, which equals 1 for group of economists and 0 for other groups; *Mixed* is a dummy variable, which equals 1 for heterogeneous group and 0 group of non-economists; *Leadership* is also a dummy variable, which equals 1 for treatment with leadership and 0 otherwise.

Efforts	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Economist	1.185	.8792298	1.35	0.178	-.5382587	2.908259
Mixed	1.9	.9754179	1.95	0.051	-.0117839	3.811784
Leadership	1.322222	.1755314	7.53	0.000	.9781869	1.666258
_cons	2.878889	.6952861	4.14	0.000	1.516153	4.241625

Figure 3: Results of panel regression with random effects for both treatments

As it can be seen from the table the variable leadership is strongly significant, thus *Hypothesis 2 is confirmed*.

One more question which was interesting for us is whether economists behave more conformal in comparison with other people or not. Conformity in our experiment was measured on a group level as well as on an individual one. In the case of groups conformity means the compliance with the level of efforts of a leader, which is measured as a difference between the level of efforts of a leader and the minimum efforts in a group. One way-anova test shows that there is a statistically significant difference among the means of all three groups at 1% level. Moreover, the results of OLS regression (see Figure 4) with clustering show the significant results:

$$Difference = \beta_0 + \beta_1 \cdot Economist + \beta_2 \cdot Mixed + \beta_3 \cdot Min_{1roundordinary}, \text{ where}$$

Economist is a dummy variable, which equals 1 for group of economists and 0 for other groups; *Mixed* is also a dummy variable, which equals 1 for mixed groups and 0 for non-economists; we also control conformity for the first round efforts in the treatment without leadership-*Min_{1roundordinary}*.

Difference	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
Economist	-1.3938	.4145889	-3.36	0.004	-2.268506	-.519094
Mixed	-1.2524	.4209436	-2.98	0.008	-2.140513	-.3642867
Min_1round_ordinary	.154	.0854683	1.80	0.089	-.0263224	.3343224
_cons	1.0548	.4859074	2.17	0.044	.029625	2.079975

Figure 4: OLS regression with clustering by group for the difference between the leader and minimum of efforts in a group

It can be noticed that the coefficient before economist is greater by module in comparison with other groups, therefore economists are less conform in comparison with other groups. Thus, *Hypothesis is 3 confirmed*.

The same hypothesis was checked on the individual level by measuring conformity as a difference between the level of efforts of a leader and the level of efforts of a participant. The OLS regression with clustering by individual was conducted (see Figure 5) ⁵:

$$Difference = \beta_0 + \beta_1 \cdot Economist + \beta_2 \cdot Gender$$

Difference	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
Economist	-.7473333	.2095898	-3.57	0.001	-1.172823	-.3218435
Gender	-.416	.1825701	-2.28	0.029	-.786637	-.045363
_cons	1.141333	.24459	4.67	0.000	.6447893	1.637877

Figure 5: OLS regression with clustering by group for the difference between the leader and minimum of efforts by individuals

It can be again noticed that economist are less conform in comparison with non-economists. However, as we can see in the group level non-conformance is higher in comparison with individual one.

5.2 Part 2.

In graph (see Figure 6) some patterns can be seen by visual analysis of data. First of all, economists choose the largest quantity of emissions before chat as well as after chat in comparison with other groups. As for mixed groups before the chat they choose the lowest quantity of emissions, while much more than non-economists after the chat. Preliminary we could say that our hypotheses of the rational costs minimization behaviour of economists is confirmed as well as for non-economists, who even decrease the level of emissions after the discussion in chat. As for the mixed groups it seems

⁵the specification of the regression with control for choice in the first round with leadership was made, however this variable turned to be insignificant

that opinion of economists gets dominant. However, some statistical analysis is needed in order to test the significance of these results.

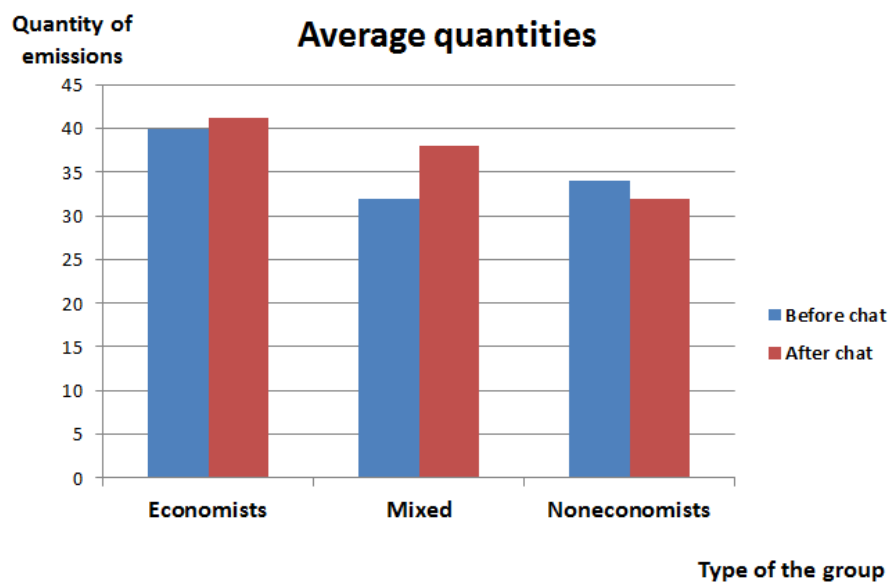


Figure 6: Average quantity of emissions before and after chat by group

In order to test the fifth hypothesis about the fact that economists tend to minimize the costs or in other words the choice of quantity, which equals 50 (see table below), we made the one-way ANOVA test with repeated measures. The test shows that means among the groups are statistically significant at 1% level. As it can be seen from the graph the level of emissions, which is chosen by economists is much more (and close to the cost minimization one) in comparison with mixed group and non-economists. Due to the fact that this difference is statistically significant, therefore *Hypothesis 4 is confirmed*.

Quantity of emissions per month, tons	10	20	30	40	50	60	70	80
Costs for sanitation per month , mm. rubles	167	133	103	77	55	37	23	13
Ecological damage per month, mm. rubles.	10	30	50	70	90	110	130	150
Total costs per month, mm. rubles.	177	163	153	147	145	147	153	163

For the checking the same hypotheses, but from the perspective of individuals

the OLS regression has been run with cluster by ID (the number of an individual). Clustering was made because the regression takes into account measures both before and after the chat. The regression⁶ looks as follows (see Figure 7):

$$Quantity = \beta_0 + \beta_1 \cdot Economist + \beta_2 \cdot Gender, \text{ where}$$

Quantity is the level of emissions chosen by the individual, *Economist* is a dummy variable, which equals 1 for economists and 0 for people of other professions and *Gender* is also a dummy variable, which equals 1 for men and 0 for women. The results of the regression are presented below (see Figure 8):

Quantity	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
Economist	7.280026	3.786414	1.92	0.060	-.3145588	14.87461
Gender	5.842967	3.668798	1.59	0.117	-1.515709	13.20164
_cons	29.55845	3.323886	8.89	0.000	22.89157	36.22532

Figure 7: Results of OLS regression for individuals with clustering by ID

As it can be inferred from the table being an economist increases the quantity of emissions by 7,3 ($p < 0.1$), thus *Hypothesis 5 is confirmed*.

One more question, which is interesting for us, is whether there was any treatment effect. In other words have the participants changed their behaviour after the discussion in chat?

To test this hypothesis on a group level we ran one-way ANOVA test, measuring whether the means among the difference between the quantities chosen after the chat with the quantities chosen before is significant. The test shows that these differences are insignificant for all three groups as well as for the pairs of different combinations of groups (economists and mixed groups, economists and noneconomists, noneconomists and mixed groups). The results are presented in the table (see Figure 9):

⁶other specifications of regressions have been run, but remained insignificant

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. oneway Difference Type, bonferroni
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Source	Analysis of Variance			F	Prob > F
	SS	df	MS		
Between groups	162.5	2	81.25	1.37	0.2834
Within groups	887.5	15	59.1666667		
Total	1050	17	61.7647059		

Bartlett's test for equal variances: chi2(2) = 0.6169 Prob>chi2 = 0.735

Comparison of Difference by Type (Bonferroni)		
Row Mean- Col Mean	1	2
2	4.75 0.887	
3	-3.25 1.000	-8 0.363

Figure 8: Results of one-way ANOVA test and Bonferroni correction for difference of quantities chosen by group between treatments

Consequently, we can say nothing about the hypotheses 6.

Looking on the treatment effects from the individual perspective we ran OLS regression for individual contributions. The regression looks as follows:

$$Difference = \beta_0 + \beta_1 \cdot Ec_group + \beta_2 \cdot Mix_group + \beta_3 \cdot Risk_aversion + \beta_4 \cdot Minor, \text{ where}$$

Difference is a difference between quantity of emissions after chat and before the chat;

Ec_group is a dummy variable, where 1 means that you participated in the group of economists, 0 otherwise;

Mix_group is a dummy variable, where 1 means that you participated in the mixed group, 0 otherwise;

⁷ is a dummy variable, is a dummy variable, where 1 means that you are risk averse, 0 that you are risk lover;

⁷Risk aversion was measured by asking the participants in the Questionnaire the following question: «Imagine that you are a breadwinner in the family and have regular job, which guarantees you a fixed income. However, in this year you have an opportunity to change job, which with the probability 0,5 will double your annual income and with probability 0,5 will reduce it by $\frac{1}{3}$. Will you agree to change the job?»

*Minor*⁸ is a dummy variable, which means 1 if you have any additional education or hobbies except your main place of work, 0 otherwise.

The result of OLS regression are presented in the following table (see Figure 9):

Difference	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Economist	-12.91187	6.575132	-1.96	0.055	-26.13206	.3083203
Ec_group	13.46072	7.749292	1.74	0.089	-2.12027	29.04172
Mix_group	15.75478	6.056745	2.60	0.012	3.576875	27.93268
Risk_aversion	7.701223	3.90941	1.97	0.055	-.159173	15.56162
Minor	5.287598	3.612545	1.46	0.150	-1.975911	12.55111
_cons	-4.682114	3.900477	-1.20	0.236	-12.52455	3.160321

Figure 9: Results of OLS regression for difference of quantities chosen individually between treatments

It can be inferred from the table that if a person is an economist in the group of economists the quantity he chooses after the chat increases by approximately 0.6, while if a person is an economist in the mixed group his decision after the chat increases by 2.9, thus rejecting hypothesis 7. If a person is a non-economist his decision after the chat increases by 13,5 in the mixed group, thus proving that the heterogeneity plays the role reverse to the predicted one: economists persuade non-economists to behave in the more profit maximization way.

Also it can be mentioned that the quantity of emissions increase both if you are risk averse and if you have some additional education.

5.3 Part 3.

The preliminary analysis of data (see Figure 10) shows us that non-economists in comparison with economists leave the larger number of workers. Beyond that, the discussion in chat doesn't significantly change the position of the groups in comparison with the choice before the discussion. Moreover, it can be seen that there is practically no difference between economic and mixed groups.

⁸This variable was measured by asking participants in the Questionnaire the following question: «Do you have additional education or hobbies? (If yes, which one?)»

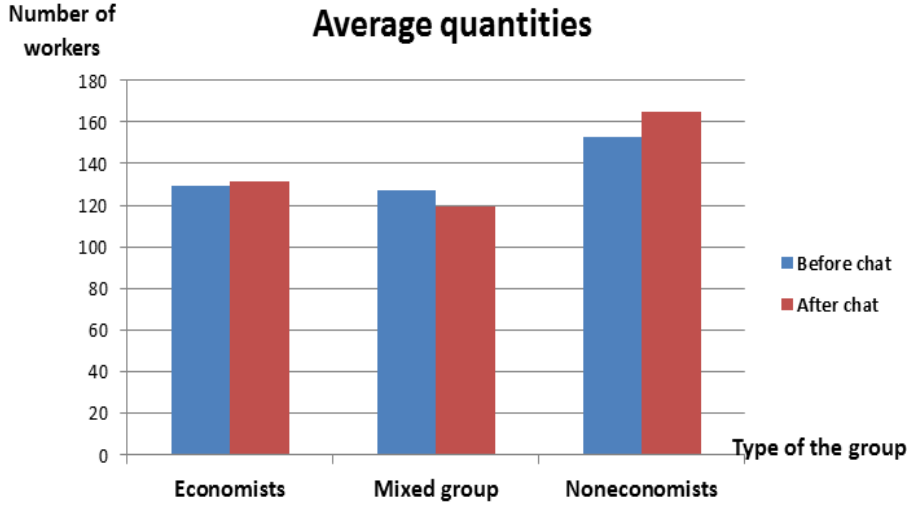


Figure 10: Average quantity of workers left in the company before and after chat by group

Beyond the expectations made by visual analysis the regression analysis with clustering by group shows the statistical difference between groups:

$$Quantity = \beta_0 + \beta_1 \cdot Economist + \beta_2 \cdot Mixed, \text{ where}$$

Quantity is the amount of workers to leave of chosen by the group, *Economist* is a dummy variable, which equals 1 if participant is from the economist group and 0 for people from other groups and *Mixed* is also a dummy variable, which equals 1 if participant is from heterogeneous group and 0 otherwise. The results of the regression are presented below (see Figure 11):

Average	Robust		t	P> t	[95% Conf. Interval]	
	Coef.	Std. Err.				
Economist	-28.3625	14.72729	-1.93	0.071	-59.43438	2.709375
Mixed	-35.4	16.42455	-2.16	0.046	-70.05277	-.7472329
_cons	158.8	12.96806	12.25	0.000	131.4398	186.1602

Figure 11: Average quantity of workers left in the company before and after chat by group

As it can be seen from the table economists leave more workers in comparison with other groups, thus rejecting hypothesis 8.

However, the different picture can be seen from the analysis of individual behaviour:

Quantity	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]	
Economist	-19.59577	9.889906	-1.98	0.053	-39.43241	.2408716
Minor	13.30611	9.211606	1.44	0.154	-5.170029	31.78225
_cons	142.6069	9.349707	15.25	0.000	123.8538	161.36

Figure 12: Results of OLS regression for firing before and after chat for individuals

As it can be seen from the results of the regression (see Figure 12), economists leave less workers in comparison with non-economists, this *confirming Hypothesis 9*.

As it has been predicted the differences among treatments are insignificant as well as before discussion in the chat. However, it is necessary to mention that the results are significant for the decisions of participants after the chat, for groups (see Figure 13):

. oneway Average_After Type, bonferroni

Analysis of Variance					
Source	SS	df	MS	F	Prob > F
Between groups	5640.56944	2	2820.28472	3.34	0.0629
Within groups	12649.875	15	843.325		
Total	18290.4444	17	1075.9085		

Bartlett's test for equal variances: chi2(2) = 1.4980 Prob>chi2 = 0.473

Comparison of Average_After by Type
(Bonferroni)

Row Mean- Col Mean	1	2
2	-12.225 1.000	
3	33.175 0.190	45.4 0.078

Figure 13: Results of ANOVA test and Bonferroni correction for firing after chat for groups

From this table we can see that there difference between means of the groups is significant at 10% level, while the differences between group of economists and mixed group are insignificant.

The results of OLS-regression are presented in the table (see Figure 14):

Average	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Economist	-33.175	16.55538	-2.00	0.063	-68.46196	2.111958
Mixed	-45.4	18.36655	-2.47	0.026	-84.54737	-6.252635
_cons	164.8	12.98711	12.69	0.000	137.1186	192.4814

Figure 14: Results of OLS regression for firing after chat for groups

Here it can be seen that economists as well as in the previous regression fire less in comparison with other groups.

Looking at the individual behaviour (see Figure 15):

Quantity	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Economist	-22.38101	10.4477	-2.14	0.037	-43.38751	-1.37451
Age	4.206307	2.518807	1.67	0.101	-.8580934	9.270707
Gender	1.179319	10.14664	0.12	0.908	-19.22188	21.58052
Minor	18.16998	10.7058	1.70	0.096	-3.355468	39.69544
Risk_aversion	-3.460718	11.43657	-0.30	0.764	-26.45548	19.53404
_cons	54.5047	54.32359	1.00	0.321	-54.7202	163.7296

Figure 15: Results of OLS regression for firing after chat for individuals

Thus, the same results as for all observations is repeated: as individuals economists fire more in comparison with non-economists.

However, it should be mentioned that if you look at the coefficients before variable Economist in the regression for groups it is -33, 175, while before individuals is only -19,6. Thus, comparing economic group behaviour with economic individual behavior it can be inferred that economists as a group incur more self-interested behaviour as comparing with the individual one.

Comparison with the results of the work of Rubinstein.

This part is devoted to the comparison of the results of our work with the original paper.

In the table behind is made the comparison of our results with the original one, contrasting the differences by specialization:

Quantity	EconTA	EconHSE	MathTA	MathHSE	PhilTA	PhilHSE
100(profit maximizers)	45%	42%	16%	25%	13%	34%
144	31%	30%	36%	33%	19%	11%
170	9%	6%	25%	25%	25%	22%
196 (no layoffs)	13%	15%	11%	17%	36%	22%
Other	45%	6%	13%	0%	7%	1%
Average layoffs	63	66	45 48	31	58	

As it can be revealed from the comparison in the table the differences among different specializations are minor in the Tel Aviv University, where the original experiment was conducted, and in the Higher School of Economics. The main observation that can be seen from the table behaviour oriented more to the profit-maximization in comparison with other specializations. In other words the hypothesis, which was proved earlier.

Ariel in his work also looked at gender differences. Comparing with the results of our work:

Gender Effects	EconTA	EconHSE	Not economists TA	Not economists HSE
	f/m	f/m	f/m	f/m
Average layoff	52/57	74/59	43/48	50/54
Profit maximizers	30/37%	21/21%	22/26%	10/19%

It can be inferred that in both universities women behave in a more compassionate way in all specializations except economics, while for economists there is a reversed tendency. Women whose specialization is economics are less compassionate in comparison with men.

5.4 Part 4.

The analysis of the table with the information about workers shows that there is a one optimum, which maximizes profit thus leaving 3 workers (workers number 1,3

and 4 or 5 or 6) instead of 4 possible. Only 8 out of 54 participants chose not profit maximizing behaviour. Among these eight participants there were 4 economists and 4 non-economists, thus the hypothesis 10 is rejected.

Beyond this, all participants who chose in addition to profit-maximizing behaviour the discrimination one were economists (as a third participant to leave they chose the woman under 30 without children, while they could leave the woman with children). Thus, *hypothesis 10 is partially confirmed*.

However, it is necessary to mention that the majority of the participants who chose profit maximization behaviour didn't discriminate arguing it in the chat by phrases like «obviously we will maximize profit, but we are not bad at all, we will leave the woman with children».

6 Conclusion

Providing the set of experiments, the author came to the following conclusions.

In the process of coordination the most efficient are heterogeneous groups, the in-between position occupies the homogeneous team of economists and the least efficient is the team of non-economists. The intuition behind this result lies in the importance of changing your mind in the coordination games, thus decreasing the communication costs. Besides, not only cooperating at the high level of efforts tend the heterogeneous team attractive, but also their conformal behaviour in comparison with the economists. Also our study shows that introduction of leadership in coordination games increases the efficiency of coordination among participants.

In the question of contradiction between moral values and self-interest behaviour, the study shows that from the point of view of the society as well as on the individual level economists behave self-interestedly by choosing the cost minimization solution in the problem of defining quota for emissions, while mixed groups and non-economists care about ecology more.

One of findings is connected with the fact that in group economists become to behave more self-interestedly than on the individual level. This fact is proved by the findings in the weak-link game, where it was found that in the mixed groups

economists tend to persuade non-economists and change the final solution by the most self-interested one. Moreover, economists fire more workers while making group decisions in the group with the other economists in the comparison with the individual level.

In the experiment with firing, it was found that on the individual level economists behave more self-interested than non-economists, thus confirming the results of the work of Ariel Rubinstein. However, what is interesting is that on the group level economists are behave as the least self-interested group.

Finally, it was noticed that before the discussion in chat in both the weak-link game and firing treatment there was no statistically significant difference between the groups of economists and heterogeneous groups, while this difference becomes significant after the introduction of chat. Thus, this result shows that the cooperation of the economists and non-economists could lead to the considerably different outcomes in the process of persuading each other.

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7 Appendix

7.1 Questionnaire

General Questions:

- 1) How old are you?
- 2) Your gender is:
- 3) Your main occupation now is:
- 4) Your income per month (if you don't have your earned income, then, please, evaluate the sum of money you dispose independently.
- 5) In which university do you study?
- 6) At which faculty do you study (studied)?
- 7) Do you have additional education/hobbies? (If yes, which one?)
- 8) Imagine that you are a breadwinner in the family and have regular job, which guarantees you a fixed income. However, in this year you have an opportunity to change job, which with the probability 0,5 will double your annual income and with probability 0,5 will reduce it by $\frac{1}{3}$. Will you agree to change the job?
- 9) Did you enjoy to participate in the experiment?

Questions for part 1B about the situation with international consulting company with leadership:

For Leaders:

- 10) How did you make a decision about level of efforts? Did you expect that followers would behave similarly to part 1A?

For Followers:

- 11) Do you think that it became easier for you to make decisions in comparison with part 1A without leadership?

- 12) Was the decision of a leader unexpected for you? If yes, why?

Questions for part 2 about enterprise, which make emissions:

- 13) While choosing strategy, did you follow a strategy other than profit maximization? If yes, which one?

- 14) What do you think, the real city administration would make the same decision as your team? Why?

15) Do you think that after discussion in chat accepted decision was more effective?

Questions for part 3 about situations with firing in company ILJK:

16) While choosing strategy, did you follow a strategy other than profit maximization? If yes, which one?

17) What do you think, the real management committee would make the same decision as your team? Why?

18) Do you think that after discussion in chat accepted decision was more effective?

Questions for part 4 about situations with firing in company NNN:

19) What was your motivation to fire these or those workers?

20) Do you think that equiprobable choice contributed to finding consensus? If not, why?

To what extent do you agree with following statements? (Variants: Absolutely agree/More likely agree/Neutral/More likely agree/Absolutely disagree)

21) I weigh all pros and cons before making the decision.

22) As a rule, it is easy for me to collaborate with people in a group.

23) I put moral values above all else.