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Abstract

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Social Capital and Mobility: An Experimental Study

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ABSTRACT

Theoretical models of social capital (David, Janiak, and Wasmer 2010; Bräuninger and Tolciu 2011) predict that communities may find themselves in one of two equilibria: one with a high level of local social capital and low migration or one with a low level of local social capital and high migration. There is empirical literature suggesting that immigrants who join communities high in social capital are more likely to invest in local social capital and that the whole community will then end up in the equilibrium with high local social capital and low migration. However, this literature suffers from the selection of immigrants, which makes the identification challenging. In order to test the causal influence of the initial level of local social capital, we take the setup used in the theoretical models into the laboratory. We treat some communities by increasing the initial level of social capital without affecting the equilibrium outcomes. We find that while most communities end up in one of the two equilibria predicted by the theoretical models, the treated communities are more likely to converge to the equilibrium with a high level of local social capital and low migration.

KEYWORDS

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1. Introduction

Migratory movements are driven by a desire for a better future or simply by force. Irrespective of their motives, migrants lose their social connections in their communities of origin and need to integrate into the social networks of their receiving communities by investing in local social capital (SC). These investments may yield considerable returns, as social capital has been shown to be correlated for example with labour market outcomes (Freitag and Kirchner 2011) as well as with physical and mental health (Costa and Kahn 2007; Folland 2007; d'Hombres et al. 2010).

Theoretical models of local social capital accumulation (David, Janiak, and Wasmer 2010; Bräuninger and Tolciu 2011) have described individual investments in social capital as a function of a community-level stock of social capital. Higher stock brings higher returns to those who (a) previously invested and (b) stay in the community. These models typically produce two stable equilibria: a community with high social capital and low mobility (high-SC equilibrium) and a community with low social capital and high mobility (low-SC equilibrium). However the model does not provide any guidance about which equilibrium a particular community will end up in, or how that outcome depends on the initial level of social capital in the community. In this paper, we address whether immigrants who come into a community that is already high in local social capital are more likely to invest more in that local social capital than immigrants who come into a community that is low in local social capital.

Empirical evidence drawn from historical events following World War II suggests that communities affected by migration may end up in one of the two equilibria described in the theory. In the aftermath of the Second World War, ethnic Germans were expelled from Central and Eastern European countries and forced to move to Germany and Austria. Their expulsion resulted in a sudden inflow of 8 million people into West Germany alone. These immigrants *(expellees)*, who moved into established communities, were similar to the domestic population of those communities in terms of language, culture and human capital, but were substantially poorer (Bauer, Braun, and Kvasnicka 2013). Chevalier et al. (2018) use municipality-level data from West Germany to show that the expellees eventually succeeded in becoming politically integrated, with their higher taste for wealth redistribution and preferences for different political parties disappearing in the mid-1960s. The voter turnout in municipal elections, often used as a proxy for SC levels (e.g. Knack 1992; Hotchkiss and Rupasingha 2018), converged even sooner, in 1950.

The expulsion of the ethnic German population did not only affect the receiving communities in Germany and Austria. On the other side of the border, in what is now the Czech Republic, the ethnic Germans had lived in the Sudetenland, a highly ethnically segregated region close to the border, for centuries. Their expulsion emptied whole municipalities and completely destroyed the region's local social capital. The empty settlements they left behind were swiftly resettled by volunteers who sought to improve their economic and social status by acquiring a house, a piece of land or a better job (see e.g., Wiedemann 2016). These settlers were homogeneous in terms of language and culture but they had little or no social connections prior to the resettlement. The new communities they created therefore, presumably, had low initial levels of local social capital. Guzi, Huber, and Mikula (2019) show that the resettlement increased the population churn in resettled municipalities and that this effect has persisted to the present day. They also document that to this day the resettled municipalities still report lower voter turnout in local elections and lower civic participation in local clubs – i.e., in local social capital.

The established communities in West Germany which experienced an inflow of expellees maintained their high level of SC, while the municipalities in the Czech Republic that suffered the destruction of their SC are still lower in SC. However, the evidence that empirical research can deliver is limited due to the self-selection of immigrants and their unobserved characteristics. Migration is typically a matter of choice, and migrants are usually free to choose their country or municipality of destination. The observed effects could be therefore driven by self-selection rather than by the local social capital levels in the receiving communities. To tackle this concern, we simulate the process of migration and investment in local social capital in a laboratory experiment.

We propose an experimental design that follows theoretical models of local social capital accumulation (David, Janiak, and Wasmer 2010; Bräuninger and Tolciu 2011). A community is modelled as a group of experimental subjects, who make two choices. First, they decide how much to invest in SC and second, they choose whether to stay in the community or to move elsewhere. People who stay enjoy the return from their SC investments. People who leave receive a reward (e.g. a better job or lower housing costs), but lose the benefits of their local social network.

The experiment enables us to examine whether community members' choices and the equilibrium the community ends up in depend on the community's initial level of SC. An exogenous shift in the initial level of SC is modelled through an *investment leader*. This is a player who always invests as much as possible in local SC and never leaves the community. Since returns from SC investment depend also on other players' investments, the investment leader increases the lower bound return from SC investment for the other community members. For this reason, we hypothesise that communities with an investment leader are more likely to end up in the high-SC equilibrium than communities without such a leader. Our experimental results confirm this hypothesis.

This effect is not due to the leader's impact on equilibrium payoffs; if anything the introduction of the leader should lead to the opposite effect, because the leader does not affect the payoff in the high-SC equilibrium, but increases the expected payoff in the low-SC equilibrium. The leader impacts the search for an equilibrium, which is modelled by repeating the same experimental game in the same group of players. Two mechanisms are possible: the leader either impacts community members' expectations, so that communities with a leader invest more and expect others to invest more, in the first round of the game, or, alternatively the higher prevalence of the high-SC equilibrium in leaders' communities may stems from players (with the same initial choices and expectations) receiving higher payoffs in the leader treatment, and therefore moving towards the high SC equilibrium in the second round of the game, through feedback and learning. Our experimental results provide evidence in support of the former explanation. We find that in the treatment with a leader, community members expect others to invest more in SC, and invest more themselves, and that this already happens in the first round of the game, before any feedback is given. This finding suggests initial expectations about the behavior of other community members are an important mechanism that can explain differences in communities' levels of social capital and migration.

The rest of this study has the following structure: in Section 2 we present the experimental design and formulate hypotheses; in Section 3 we describe the experimental procedures and data; in Section 4 we present and discuss the results.

2. Experimental design

Our experimental design follows the logic of the models of local social capital (SC) and mobility by David, Janiak, and Wasmer (2010) and Bräuninger and Tolciu (2011). These models consider an individual living in two periods. In period 1, individuals work and invest in their SC. At the beginning of period 2, some individuals receive job offers from a company located in a different community. Workers who accept the new jobs receive a mobility bonus but lose all their SC. On the other hand, individuals who are not offered new jobs or who reject their offers do not receive any bonus but retain their SC. The return the individuals derive from their SC depends not only on their SC in period 2, but also on the SC of the other people living in the same community. So their level of SC might provide a positive externality to other individuals in the same community.

In our experiment, each community is inhabited by four players. At the beginning of period 1, each player receives an endowment $I = 80$ CZK[1] and chooses the amount to invest in SC $n_i \in (0, 80)$. In period 2, three out of four group members receive new job offers. If they accept, they lose all their SC, i.e. $s_i = 0$, but receive a mobility bonus b. The size of the bonus

[1] At the time of the experiment, 1 USD equaled 23 Czech Crowns (CZK) and 1 EUR equaled 26 CZK. A standard wage for an hour of unqualified student labor was approx. 100 CZK.

is uncertain. There is a 10% probability of a bonus of 80 CZK, and a 90% probability of a bonus of either 25 CZK in the low-bonus treatment or 40 CZK in the high-bonus treatment. We varied the 90%-probability bonus to test the sensitivity of our results to the size of this parameter. Players who either receive no job offer or reject the offer received have a level of SC in period 2 of $s_i = n_i$. The return from SC is calculated as the investment of player i times the rate of return as determined by the sum of SC of other players in the group:

$$r_i = s_i \sum_{j=-i} \frac{s_j}{120},$$

The payoff to each player equals $I - n_i + r_i$ if they receive no offer or reject one, or $I - n_i + b$ if they accept a job offer. The game is repeated 10 times in partner matching to facilitate learning by the players, and convergence of the community to an equilibrium. At the end of period 1 of each round, players receive feedback about the other players' investment. At the end of each round, players learn how many players accepted job offers, the rate of return, the return from SC, and their payoff in that round.

We look at how the initial level of SC influences the outcome. In Treatment 0 (T0), all four players participate in the experiment, and three of them receive job offers in period 2. In Treatment 1 (T1), one group member, the investment leader, is played by a computer algorithm that always chooses $n_i = 80$, and never receives an offer in period 2. In order to keep the same number of players without the job offer, all three "human" players receive job offers with probability 1. The players are all made aware of the existence and choices of the robot player in T1, as well as the fact that the three remaining players will all receive job offers.

Both treatments lead to two subgame-perfect equilibria in pure strategies: In the high-SC equilibrium, all players in a given group choose $n_i = 80$, and do not accept any job offers. In the low-SC equilibrium, the players choose $n_i = 0$, and accept job offers. In both treatments the maximum payoffs in both equilibria is 160 CZK. While any individual with $n_i = 0$ receives the maximum payoff with an exogenously given probability, the payoff of any player with $n_i > 0$ depends on the other players' choices. Since the expected payoff in a high-SC equilibrium exceeds that in a low-SC equilibrium, players are motivated to invest in SC. T1 reduces the risk of the investment, because it changes the support of the rate of return $\frac{s_j}{120}$. Compared to T0, where the rate of return ranges from 0 to 2, the lowest rate in T1 equals 2/3, as the "computer" player always has $s = 80$. This reasoning leads to the following hypothesis:

Hypothesis 1 (H1)**.** *A higher proportion of groups will converge to the high-SC equilibrium in T1 than in T0. Hence investment and SC will be higher and the job acceptance rate will be lower in T1 than in T0.*

If we find support for H1, it would be interesting to see whether this result is due to different feedback generated by identical choices in the two treatments, or whether it can be attributed to different ex-ante expectations. According to the first mechanism, the difference between T0 and T1 would be due to natural heterogeneity between players and learning in the repeated-game setup. Suppose there are two groups, one in T0 and one T1, whose "human" players make the same investments in the first round of the experiment. If the average investment is less than 80, the rate of return for players in T1 will be higher, and those players will be less likely to accept job offers. This might lead to different choices in round 2 (especially if the rate of expected return is below 1 in T0 and above 1 in T1). Consequently, the two groups might converge to different equilibria. According to the second mechanism, the presence of the investment leader with high SC in T1 affects players' expectations about their fellow players' investments, and consequently affects their own investment choices. To be able to identify this mechanism, we elicit expectations about the investments that other "human" players will make. This is done in period 1 after each player has chosen their investment in SC. In T0, players guess what the average investment chosen by the three remaining players will be. In T1, they estimate the choices the two remaining "human" players will make. In the result section, we also test the following hypothesis.

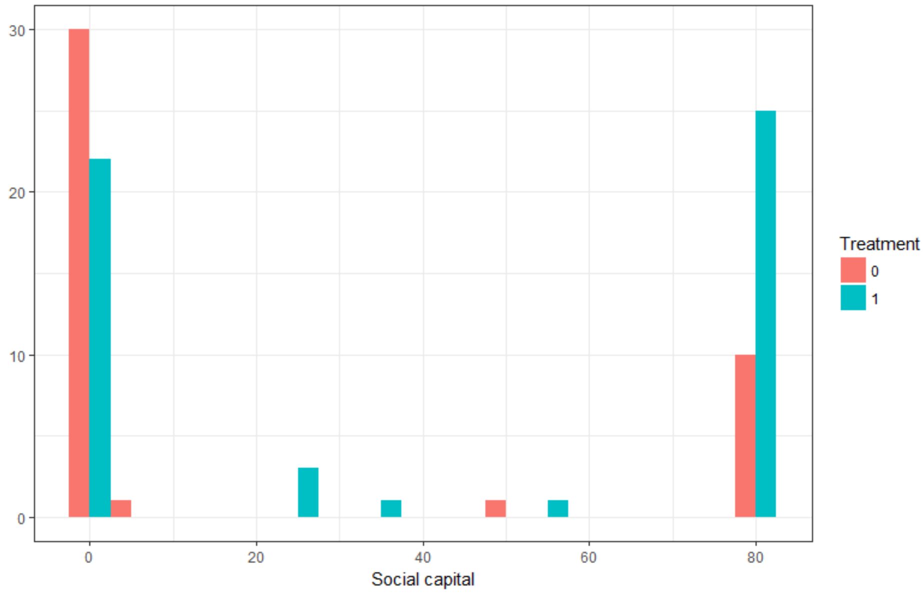
Hypothesis 2 (H2). *The expected investment by other "human" players is higher in T1 than in T0.*

3. Experimental procedures and data

The experiment was conducted in November 2018 at the Masaryk University Experimental Economics Laboratory (MUEEL) in Brno, Czech Republic. In total, we recruited 324 student subjects using hroot (Bock, Baetge, and Nicklisch 2014). The experiment environment was programmed in zTree (Fischbacher 2007). At the beginning of the experiment, an experimenter read the instructions aloud, while students followed on paper copies (see Appendix A for the experimental instructions). At the end of the experiment, one period was randomly selected for payment. Subjects received their payoffs from that round and an additional bonus of 50 CZK if the difference between the estimated and actual average investment was less than or equal to 5 CZK. Each experimental session contained a second part, administered after this experiment, which is not related to this paper. The whole experimental session took approximately 70 minutes. The average payoff equaled 280 CZK.

We conducted 14 experimental sessions, 7 sessions of T0 and 7 sessions of T1. We also varied the mobility bonus to test the robustness of our results: This was 40 CZK in 8 sessions and 25 CZK in 6 sessions. Summary statistics are presented in Table 1. Each session contained 10

Figure 1. Histogram of group averages of SC in round 10 of the experiment.



periods with the same game. For the analysis of the expectations and investments in the first period, we can take the choices of all 324 participants as independent. Once we are interested in the outcomes in the last period, the independent observations are the 94 groups. Figure 1 presents the histogram of the group level average SC in round 10. It is clear that most groups converged to one of the equilibria, i.e. the level of SC in period 2 equals either 0 or 80. Only 6 out of 94 groups have an average SC between 10 and 70. The graph also shows that in line with Hypothesis 1 the relative share of groups in the high-SC equilibrium is higher in T1 than in T0.

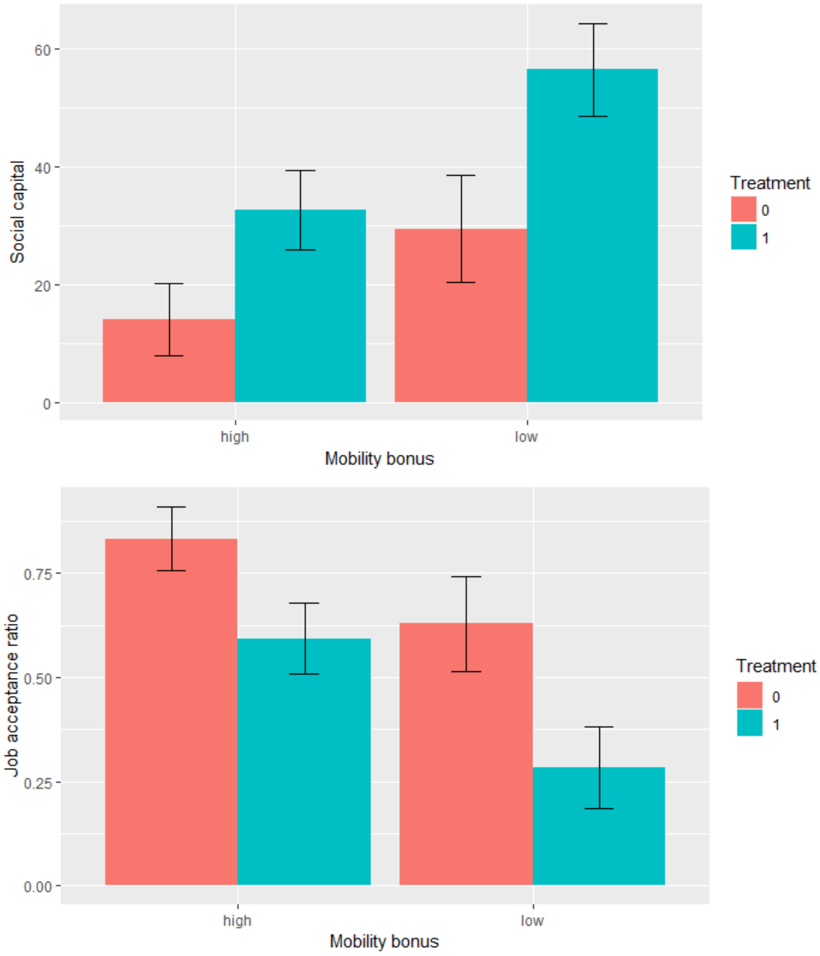
Table 1. Descriptive statistics

	Total	Treatment 0	Treatment 1	Low bonus	High bonus
Subjects	324	168	156	132	192
Female	52.8%	53.0%	52.6%	53.8%	52.1%
Business studies students	64.5%	64.3%	64.7%	65.2%	64.1%
Mean age (St. Dev.)	21.8 (2.1)	21.8 (2.1)	21.7 (2.0)	21.6 (2.2)	21.8 (2.0)
Groups	94	42	52	38	46

4. Results

Our main results are summarized in Figure 2, which shows the group averages for SC and job acceptance ratio in round 10 split by the value of the mobility bonus. The job acceptance ratio measures the share of subjects that accepted the job offered to them in period 2. In line with Hypothesis 1 the treatment increases SC and reduces job acceptance. A lower mobility bonus

Figure 2. SC and job acceptance ratio in T0 and T1 for high and low mobility bonus



increases the share of groups in the high-SC equilibrium because it reduces the incentives to accept the job offer in period 2.

Table 2 tests Hypothesis 1. Column 1 shows the logit model explaining whether a group converged to a high-SC equilibrium at the end of the experiment. Here we assume that a group has converged to a high-SC equilibrium if the average level of SC exceeds 70, and to a low-SC equilibrium if it is below 10; we exclude the six groups whose average SC was between 10 and 70. Columns 2-4 present OLS regressions of the group averages of investment, SC, and the job acceptance ratio. In all the models, Treatment 1 changes the average size of the variable in the direction predicted by H1 by about 28% of the maximum value[2], and these changes are highly statistically significant. As expected, a low mobility bonus moves all the variables in the same direction as T1. This is because the low bonus makes players less likely to accept job offers, and therefore more likely to invest in social capital and converge to the high-SC equilibrium.

[2]The average marginal effect of Treatment 1 in the logit model is 0.285. The maximum level of investment and SC is 80.

Table 2. Treatment effects in the last round

	Dependent variable:			
	High-SC equilibrium	Investment	Social capital	Job acceptance
	logistic	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Treatment 1	1.400***	21.224***	22.008***	−0.283***
	(0.494)	(7.227)	(7.391)	(0.092)
Low mobility bonus	1.177**	19.201**	20.053***	−0.262***
	(0.488)	(7.322)	(7.487)	(0.094)
Constant	−1.705***	14.539**	11.971*	0.858***
	(0.464)	(6.220)	(6.360)	(0.080)
Observations	88	94	94	94
R^2		0.140	0.144	0.153
Adjusted R^2		0.121	0.126	0.135
Log Likelihood	−52.200			
Akaike Inf. Crit.	110.400			
Residual Std. Error (df = 91)		34.802	35.588	0.445
F Statistic (df = 2; 91)		7.422***	7.681***	8.231***
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 3 shows treatment differences between expectations and investment decisions in round 1 of the experiment. The players had not received any feedback about the other players' choices, so the independent observations are their individual choices. The table provides evidence in support of Hypothesis 2. Treatment 1 increases both expectations about the average investment of the other "human" players in the group and actual investments, both by roughly similar values. Interestingly, Table 3 shows that the low mobility bonus has no impact on expectations or levels of investment.

Table 4 provides additional evidence about the impact of players' initial expectations on the equilibrium in round 10. This table adds first-round expectations to the models from Table 2. The players' initial expectations have a positive and highly significant impact on the share of groups that end up in high-SC equilibrium in round 10. This shows that the initial expectations triggered by the presence of the investment leader are important for reaching a high-SC equilibrium. The evidence for learning from feedback is weaker. The effect of Treatment 1 is no longer statistically significant. However, the signs of the parameter of T1 still suggest that learning from feedback might also play a role in reaching equilibrium.

5. Conclusion

This paper has studied how the initial level of social capital in a community influences the integration of new inhabitants. The theoretical models of local social capital accumulation (David, Janiak, and Wasmer 2010; Bräuninger and Tolciu 2011) show that the community

Table 3. The effect of treatment on expectations and investment choices in round 1

	Dependent variable:	
	Expectations	Investment
	(1)	(2)
Treatment 1	8.321***	9.465***
	(2.309)	(3.172)
Low mobility bonus	−1.751	1.607
	(2.364)	(3.248)
Age	0.095	−0.663
	(0.615)	(0.845)
Female	−5.355**	−4.607
	(2.356)	(3.237)
Constant	43.092***	55.235***
	(13.304)	(18.278)
Field of study	Yes	Yes
Observations	324	324
R^2	0.139	0.084
Adjusted R^2	0.067	0.007
Residual Std. Error (df = 298)	20.232	27.797
F Statistic (df = 25; 298)	1.924***	1.097
Note:	*p<0.1; **p<0.05; ***p<0.01	

Table 4. Initial expectations determine equilibrium type

	Dependent variable:			
	High-SC equilibrium	Investment	Social capital	Job acceptance
	logistic	*OLS*	*OLS*	*OLS*
	(1)	(2)	(3)	(4)
Treatment 1	0.878	10.195	10.494	−0.141
	(0.565)	(7.003)	(7.127)	(0.089)
Low mobility bonus	1.650***	21.498***	22.451***	−0.292***
	(0.584)	(6.668)	(6.786)	(0.085)
Initial expectation	0.097***	1.214***	1.268***	−0.016***
	(0.025)	(0.269)	(0.274)	(0.003)
Constant	−6.046***	−34.078***	−38.783***	1.487***
	(1.315)	(12.164)	(12.380)	(0.155)
Observations	88	94	94	94
R^2		0.299	0.309	0.313
Adjusted R^2		0.276	0.286	0.290
Log Likelihood	−42.434			
Akaike Inf. Crit.	92.868			
Residual Std. Error (df = 90)		31.602	32.161	0.403
F Statistic (df = 3; 90)		12.788***	13.412***	13.645***
Note:			*p<0.1; **p<0.05; ***p<0.01	

may end up in one of two stable equilibria (a high-SC or a low-SC equilibrium), but do not study the factors that determine which of these outcomes will materialize. The use of data from natural experiments is problematic, because the results of observational studies can be driven by self-selection or subjects' unobserved characteristics. For these reasons we have used a laboratory experiment to address our research question.

We have found that experimental communities that include an investment leader, who invests highly in SC and never moves, are more likely to end up in the high-SC equilibrium. In addition, we provide some evidence of the process by which a community converges to an equilibrium. We find that the presence of an investment leader increases ex-ante expectations about other inhabitants' SC investments, and that these expectations are an important factor in explaining whether the community ends up in the high-SC equilibrium or not. Hence, in this paper, we have not only shown that the presence of inhabitants committed to investing in local SC positively influences the outcome of the integration process, but have also documented the role of community members' ex-ante expectations in this process.

Acknowledgments

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Appendix A. Experimental instructions (translation from Czech)

Introduction [same for T0 and T1]

Welcome to the experiment. The aim of the study is to understand how people make decisions in certain situations. You will be able to earn money for your participation in the experiment, depending on your decisions and the decisions of the other participants in the experiment. You will receive payment at the end of this session in cash and in private. Other participants will not be informed about your payment.

Do not communicate with other participants during the entire experiment, do not use a mobile phone or other electronic devices except the computer at which you are seated, and pay your attention exclusively to the experiment. In case of disobedience, you will be excluded from the experiment without any payment. If you have a question while reading the instructions or later during the game itself, please raise your hand and the research assistant will come to you and answer the question.

Today's session consists of two parts. We will refer to them as Experiment 1 and Experiment 2. We will now read the instructions for Experiment 1. Please listen carefully.

Experiment 1 [T0]

Experiment 1 consists of 10 identical rounds. In each round, you will play in a group with three other players who will be randomly selected from the participants in the experiment in this room. You will not receive any information about the identity of the players in your group throughout the experiment. The composition of the groups remains the same during experiment 1.

Each round of the experiment consists of two periods. In period 1, you will receive 80 CZK, from which you can invest 0 to 80 CZK in the so-called *social capital*. In period 2, all three participants in the experiment from your group will receive an *offer* to receive a bonus of 40 CZK ***(25 CZK) [in the low-bonus treatment]***, or 80 CZK. If they accept this offer, they get a bonus, but their social capital is lost. If they do not accept it, their payment from this round will depend on their level of social capital and also on the social capital of the other members of the group. The computer player will never receive an offer. We will explain everything in detail in the following text.

Period 1: All players in the group choose their investment in social capital in period 1. You can invest any amount from 0 to 80 CZK in social capital. If in period 2 you do not receive a bonus offer or do not accept, then the amount invested equals the level of your social capital.

The return on social capital is calculated as your *social capital* ∗ *rate of return*. The rate of return depends on the level of social capital of the other three members of the group and is calculated *as the sum of the social capital of the other three members of the group* /120. The rate of return ranges from 0 if the social capital level of the other players is zero, to 2 if the social capital level of the other two players is 80 (a total of 240).

In period 1, we will also ask you to tell us how much you think, on average, the other players in the group invest in social capital.

At the end of period 1, you will find out how much other players have invested in social capital. The order of the players will be random for this information and will be drawn again in each round. Therefore, you will not be able to track how a particular player made decisions in each round of the experiment.

Period 2: Randomly selected three of the four players in the group will receive an offer to receive a bonus. The bonus has a value of 40 CZK ***(25 CZK)*** with a 90% probability and a value of 80 CZK with a 10% probability. If the player accepts the offer, then his social capital is lost, i.e. the level of his social capital is zero. In this case, the player in period 2 will receive a bonus of 40 CZK or 80 CZK, and his return on social capital is zero. If the player does not accept the offer, then (s)he receives a return on social capital in period 2.

Payoffs

The player's payoffs from each round are therefore calculated as follows:

(1) The player invests x in social capital and does not receive the offer. The player gets the rest of the amount, i.e. $80 - x$ CZK, and the return on social capital, which is calculated as $x*$ *rate of return*. The rate of return is given as the *sum of the social capital of the other three members of the group*/120. Social capital of the other players is equal to their investment if they did not receive the offer or rejected it, and 0 if they accepted the offer.

(2) The player invests x in social capital and receives and rejects the offer. In that case, his payment is the same as in the previous point.

(3) The player invests x in social capital, receives an offer of 40 CZK ***(25 CZK)*** and accepts it. The gets the rest of the amount, i.e. $80 - x$ CZK, and a bonus of 40 CZK ***(25 CZK)***. In total, (s)he receives $80 - x + 40$ ***(25)*** CZK.

(4) The player invests x in social capital, receives an offer of 80 CZK and accepts it. The gets the rest of the amount, i.e. $80 - x$ CZK, and a bonus of 80 CZK. In total, (s)he receives $80 - x + 80$ CZK.

At the end of each round, you will find out how many of the other players accepted the bids, what was the rate of return, what was the income from social capital and what was your payoff in that round.

Out of 10 rounds of experiment 1, one round will be drawn at random and the amount you earned in this round will be paid to you. If your estimate in the given round was 5 CZK or less from the actual average invested amount of the other two players in your group, then you will get an additional 30 CZK.

Experiment 1 [T1]

Experiment 1 consists of 10 identical rounds. In each round, you will play in a group with one computer player and two other players who will be randomly selected from the participants in the experiment in this room. You will not receive any information about the identity of the players in your group throughout the experiment. The composition of the groups remains the same during experiment 1. The computer player uses the same strategy throughout the experiment, which is common knowledge to all players.

Each round of the experiment consists of two periods. In period 1, you will receive 80 CZK, from which you can invest 0 to 80 CZK in the so-called *social capital*. In period 2, all three participants in the experiment from your group will receive an *offer* to receive a bonus of 40 CZK ***(25 CZK) [the low-bonus treatment]***, or 80 CZK. If they accept this offer, they get a bonus, but their social capital is lost. If they do not accept it, their payment from this round will depend on their level of social capital and also on the social capital of the other members of the group. The computer player will never receive an offer. We will explain everything in detail in the following text.

Period 1: All players in the group choose their investment in social capital in period 1. You can invest any amount from 0 to 80 CZK in social capital.

If in period 2 you do not accept the bonus offer, then the amount invested equals the level of your social capital. A computer player always invests 80 CZK in social capital and never receives an offer, so his level of social capital is always 80.

The return on social capital is calculated as your social capital * rate of return. The rate of return depends on the level of social capital of the other three members of the group (i.e. the computer player and two other players) and is calculated as the *sum of the social capital of the other three members of the group* /120. Because the computer always has a social capital level of 80, the rate of return ranges from 2/3 (80/120) if the social capital level of the other two players is zero, to 2 if the social capital level of the other two players is 80 (together with the computer player would therefore be a total of 240).

In period 1, we will also ask you to tell us how much you think, on average, the other two players in the group (i.e. everyone but you and the computer player) invest in social capital.

At the end of period 1, you will find out how much other players have invested in social capital. The order of the players will be random for this information and will be drawn again in each round. Therefore, you will not be able to track how a particular player made decisions in each round of the experiment.

Period 2: All players except the computer player will receive an offer to receive the bonus in period 2. The bonus has a value of 40 CZK ***(25 CZK)***) with a 90% probability and a value of 80 CZK with a 10% probability. If the player accepts the offer, then his social capital is lost, i.e. the level of his social capital is zero. In this case, the player in period 2 will receive a bonus of 40 CZK ***(25 CZK)*** or 80 CZK, and his return on social capital is zero. If the player does not accept the offer, then (s)he receives a return on social capital in period 2.

Payoffs

The player's payoffs from each round are therefore calculated as follows:

(1) The player invests x in social capital and rejects the offer. The player gets the rest of the amount, i.e. $80 - x$ CZK, and the return on social capital, which is calculated as $x*$ *rate of return*. The rate of return is given as the *sum of the social capital of the other three members of the group* /120. Social capital of the other players is equal to their investment if they did not receive the offer (computer player) or rejected it, and 0 if they accepted the offer.

(2) The player invests x in social capital, receives an offer of 40 CZK (25 CZK) and accepts it. The gets the rest of the amount, i.e. $80 - x$ CZK, and a bonus of 40 CZK (25 CZK). In total, (s)he receives $80 - x + 40$ [25] CZK.

(3) The player invests x in social capital, receives an offer of 80 CZK and accepts it. The gets the rest of the amount, i.e. $80 - x$ CZK, and a bonus of 80 CZK. In total, (s)he receives $80 - x + 80$ CZK.

At the end of each round, you will find out how many of the other players accepted the bids, what was the rate of return, what was the income from social capital and what was your payoff in that round.

Out of 10 rounds of experiment 1, one round will be drawn at random and the amount you earned in this round will be paid to you. If your estimate in the given round was 5 CZK or less from the actual average invested amount of the other two players in your group, then you will get an additional 30 CZK.

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