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Underlying Motivations For Rule-Violation Among Juvenile Delinquents: A Lab-in-the-Field Experiment

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Abstract:

This paper reports on a lab-in-the-field experiment that investigates differences in rule-violating behavior between the inmates of juvenile detention centers and regular adolescents from primary schools of similar age in response to three specific contexts: (i) when they interact with ingroup and outgroup members, (ii) when they are exposed to an unfair economic situation and (iii) when the rule-violating behavior is exposed to others. Our results show substantial similarities between the delinquents and non-problematic adolescents. Even though the juvenile delinquents violate rules more, we find no evidence of ingroup favoritism. Moreover, both groups care similarly about their social image and do not violate rules substantially more after the unfair treatment. Our findings thus show that juvenile delinquents are not inherently different from non-problematic adolescents and highlight the importance of social values for successful resocialization.

JEL: C93, I21, J13

Keywords: delinquency, adolescence, rule-violation, experiment, random allocation game

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1 Introduction

Adolescence constitutes a turbulent period of rapid changes in the lives of many young people. Multiple studies have documented a sharp rise in rule-violating and anti-social behavior at this time (Loeber and Stouthamer-Loeber, 1986; Wolfgang et al., 1987) leading many adolescents to delinquency. Juvenile delinquents generate significant costs to society through the direct physical and psychological harm they cause to others. The numbers are not negligible: approximately 54,000 young people in the United States and 10,000 in the European Union are held in juvenile facilities and prisons per year.¹ Only in the US this results in the estimated direct average cost of imprisonment of \$240 a day per a youth (American Correctional American Correctional Institution, 2008). In addition to that, about 1.6 million juveniles were arrested for delinquent behavior in the USA in 2014 alone (Sickmund and Puzzanchera, 2014). All this however comprises rather the tip of the iceberg when compared to the indirect costs of such behavior: problematic juveniles suffer in terms of their future prospects in education and health, they are often stigmatized, rejected by peers and tend to have poor labor market outcomes (Patterson et al., 1989; Scott et al., 2001; Tarry and Emler, 2007). Revealing more about potential causes of such misbehavior would therefore save substantial amounts of resources that could be diverted to other purposes.

Similarly to other types of preferences,² rule-violating behavior seems to be still developing in early adolescence (Glätzle-Rützler and Lergetporer, 2015). Therefore, there should be an opportunity to remedy such problematic behavior with the use of proper behavioral treatments that could be even more cost-effective than traditional economic incentives like increasing the severity of punishment or incarceration (Aizer and Currie, 2014; Bayer et al., 2009; Nagin et al., 2009; Levitt, 1998; Becker, 1968). Several large RCTs have tested long-term wide behavioral interventions (Blattman et al., 2017; Cook et al., 2014; Heller, 2014; Heller et al., 2017), but to the best of our knowledge no study so far has directly tested the particular channels of misbehavior on the delinquent youth that the long-term interventions broadly aim at. We consider it of utmost importance to uncover these suspected underlying drivers as it may not only save substantial amounts of resources but eventually also improve the lives of many.

In this paper, we study how young delinquents incarcerated in juvenile detention centers (JDCs) and regular adolescents attending primary schools (PSs) react to a series of behavioral interventions with their misbehavior in a lab-in-the field experiment. Specifically, we are interested in the interventions that had already been shown to influence the rate of misbehavior in the laboratory experiments. We study the three following questions: (i) ingroup/outgroup discrimination, (ii) sensitivity to an unfair economic situation, and (iii) the role of social motivations through the exposure of misbehavior to others. Understanding precise mechanisms that influence rule-violating behavior of juvenile delinquents is crucial for designing the resocialization programs. Comparison with regular adolescents then helps to answer if delinquents differ in their responsiveness to social and economic cues. In the last step, we investigate how our experimental rule-violating measure correlates with the real life misbehavior of delinquents which should support external validity of our results.

Rule-violating³ behavior is measured in a modified Random Allocation Game (RAG, Hr-

¹<https://www.ojjdp.gov/ojstatbb/ezacjrp/asp/display.asp>, <http://ec.europa.eu/eurostat/web/crime/database>

²The most prominent examples are fairness views (Almås et al., 2010), other-regarding preferences (Fehr et al., 2008), and cognitive and non-cognitive skills (Cunha and Heckman, 2006).

³In the literature such behavior is often labeled “norm-violation.” Since in our case it is not clear what

uschka et al., 2014; Lowes et al., 2017). This game brings a trade-off between a cost of following the official rules of the game, and a benefit from rule-violation. The setup of the RAG requires subjects to distribute tokens between themselves and another adolescent based on the outcome of a roll of a fair dice with three black and three white sides. Subjects should follow the following rule: first mentally choose one of the two colors, throw the dice and if the chosen color comes up, allocate the token to themselves; otherwise they should give it to a certain counterpart. This feature of the design adds to the privacy of subjects as even if they were directly observed, none would be able to prove they misreport the outcome. Even though rule-violation cannot be detected at the individual level, we are able to measure rule-violation at the group level when the observed distribution differs from the theoretically predicted one.⁴

Our design allows answering several particularly relevant questions. First, we create a standardized environment suitable for a clean comparison of misbehavior of two types of adolescents. Since the delinquents are placed into a JDC due to a court order, usually following multiple occurrences of serious misdemeanors, it provides a compelling reason to believe that they would cheat more than regular adolescents in a comparable environment.

Second, sharing difficult experiences in the JDCs may foster their group bonding to establish in-group favoritism and out-group avoidance (Chen and Li, 2009). Moreover, the exposure to other delinquents can lead to negative peer effects and the building of a criminal capital (Bayer et al., 2009). This happens during their formative period of life which can foster the creation of criminal identity. It can then influence behavior e.g. by prescribing different norms and cause disutility when deviating from them (Akerlof and Kranton, 2000). We test for the potential discrimination between ingroup and outgroup peers by letting subjects interact with both ingroup and outgroup counterparts in the RAG in a within-subject design.

Third, one of the most commonly proposed reasons for misbehavior is a higher sensitivity to emotions and inability to process full cognitive control over impulsive reactions (Moffitt et al., 2011; Somerville et al., 2010; White et al., 1994). The young delinquents may misbehave precisely due to the lack of control over how they are treated. We focus in particular on the reaction to an unfair treatment since as Houser et al. (2012) show, fairness perceptions can affect subsequent honesty. In the spirit of Houser et al., we implement the unfair treatment by randomly exposing a half of the subjects to an unexpected income shock at the beginning of the experiment. We also vary the source of the income shock: either a random adult played a mini-dictator game where the options were either to share half of the endowment with a young person or not; or participants were informed they either won in a lottery or not.⁵ This helps us to investigate alternative motivations for subsequent violation of rules, particularly as the inequality that arises in the lottery treatment cannot be perceived as an unfair act. We hypothesize that placing adolescents into a clearly favorable position could be reflected by a reciprocal attenuation of their dishonest behavior, especially when they were treated fairly in contrast to simply being lucky.

Fourth, the fact that with almost all of the misconduct young delinquents directly or

constitutes a societal norm in this particular case, we prefer to coin this behavior a rule-violation.

⁴In principle, RAG measures changes in the trade-off between self-benefiting selfishness and moral costs of rule-violation, and without directly measuring change in selfishness we cannot disentangle the precise share of effect going through either of the two channels. However, Lowes et al. (2017) control for behavior in a simple dictator game in their analysis of behavior in the RAG and conclude that it plays role, but the treatment-induced differences in their analysis. We therefore note this caveat in the interpretation and labeling of our results.

⁵Our “lottery” treatment is labeled “no intentions” treatment in Houser et al.. In contrast to their design, we did not measure subjective perceptions of unfairness of the treatment.

indirectly hurt other people raises the frequently raised question whether they do not process well or even completely lack capacities for affective empathy (Crone and Dahl, 2012; Stadler et al., 2007; Sterzer and Stadler, 2009). We inspect this channel by measuring the role of social context in their misbehavior adapting the design of Cappelen et al. (2017) and examine the rate of misbehavior under extrinsic and intrinsic social motivations.⁶ This dimension is manipulated by randomly exposing the full context of the distribution of endowment in the RAG in a message to the recipient or not. In other words, for randomly selected half of participants we make salient in the message to the recipient that violation of rules was an option while the message for the other half of subjects includes only a short description of the sender. We posit that if the source of the problems with young delinquents lies in the non-processing of others' feelings, the rate of their misbehavior should not change when someone is able to find out about it. Subjects learned about this message before they made decisions in the RAG.

To further uncover the underlying motivations, we unexpectedly allowed the participants to switch the content of the message after the RAG. In other words, they could switch from the full to no context message to the recipient, or vice versa. One example of exposed underlying motivation could be that if participants are ashamed of their rule-violating behavior, they can switch from the complete-information message to the no-information message. Or, in case they are proud of their honest behavior, they can switch from the no-information to the complete-information message.

Our results reveal similar behavioral patterns between the young delinquents and primary schools students. Even though the JDC adolescents violate rules slightly more (by about 0.37 SD), the response to our treatments is largely similar in both groups. Interestingly, both groups change their behavior only marginally if they are treated unfairly with no difference regarding the source of the extra income, and neither group discriminates against the out-group. The rate of rule violation drops similarly in both groups when the counterpart in the RAG receives the message with the context of the game. We interpret this as meaning that both groups value the extrinsic social motivation - the image of being honest people. It also suggests that the JDC adolescents do not have attenuated emotional capacities. Furthermore, switching from one to the other content of the message was largely motivated by the pride in honest behavior in both groups with no sign of discrimination between the two types of recipients. Lastly, misbehavior in our experimental task significantly correlates with the real-life behavioral problems of juvenile delinquents. It suggests that the RAG is an externally valid measure of rule-violating behavior.

Our findings contribute to several streams of literature. First, the results generally speak to a small but growing economic literature on the economic preferences of delinquents and prisoners. This paper is the first to show compelling evidence that the preferences for rule-violation of young delinquents are not substantially different from regular adolescents. We thus complement experimental studies showing similarities in pro-social and cooperative behavior between adult prisoners and non-prisoners (Birkeland et al., 2013; Chmura et al., 2016; Khadjavi and Lange, 2013). Moreover, unlike previous studies, we investigate not only the level-differences between the two groups but also the sensitivity to various treatments.

Second, we test several mechanisms contributing to the rule-violating behavior of problem-

⁶Following also the terminology of Cappelen et al. (2017), extrinsic social motivation in this paper reflects any other motivation stemming from a certain decision other than to perform a task for its own sake, which we consider an intrinsic motivation.

atic adolescents. Our results suggest that juvenile delinquents are concerned with their social image. It thereby supports van den Bos et al. (2014) who suggest that the delinquents should be able to process emotions connected with rule-violations normally, but may not activate such behavior spontaneously. Overall, our findings extend the literature on traditional reasons of misbehavior, such as sensation and risk seeking, conformity and peer-effects, poverty and ineffective parenting with potentially intergenerational transmission of unethical behavior (Calvó-Armengol et al., 2009; Houser et al., 2016; Patterson et al., 1989; Bayer et al., 2009).

The unfair treatment is one of the first empirical tests of generalized reciprocity (Pfeiffer et al., 2005; Nowak and Sigmund, 2005) and is more externally valid than the standard laboratory experiment of Houser et al. (2012). The non-effectiveness of the unfair treatment on subjects' behavior goes in line with Capraro and Marcelletti (2014) who also do not find support of generalized reciprocity when cooperation and altruism due to the kind actions of someone else were not transmitted further by adult participants at M-Turk.

Our results also bear a policy relevance. There are many policies worldwide like employment and resocialization programs that use fair treatment as one of the pillars of their structures, for example a re-employment programs (Ihlanfeldt, 2007). Based on our results we argue that more specific focus on social environment and social image may further foster the effects of these programs.

Last but not least, our paper speaks to the externally validated laboratory measures of misbehavior. Recently, several studies have successfully related laboratory measures of dishonesty such as the die-throwing tasks (Fischbacher and Föllmi-Heusi, 2013) to real-world behavior thus establishing their external validity. This literature uses rather minor examples of dishonesty in the real life like misbehavior in class (Cohn and Maréchal, 2018), not returning over-payment to experimenter (Potters and Stoop, 2016), and avoiding paying for public transportation (Dai et al., 2018). We show that the RAG task predicts more general misconduct and behavioral problems including offenses, thefts, or aggression suggesting that laboratory measures of cheating are valid for revealing rule-violating preferences. The support of the external validity of the laboratory cheating measure is also in line with Cohn et al. (2015) who show that a cheating task predicts the number of disciplinary offenses among prisoners.

2 Experimental design

Figure 3 depicts the timeline of the experiment. After the general introduction of the experiment, the experimenter described the endowment manipulation, which was followed by the instructions of the experimental game (the Random Allocation Game - RAG); and then to check comprehension, a set of four control questions was given to subjects. Before the execution of the RAG, the information manipulation (see section 2.2 below) was explained. After the RAG, subjects had the unexpected opportunity to switch the information content of the message for their counterpart, then they were supposed to solve a series of four Raven's matrices and the last piece of paper they filled in was a short questionnaire asking about their background characteristics. After the sessions took place, the experimenters collected additional administrative data on the adolescents' background and the reasons for their placement in a JDC from a psychologist or a social worker.⁷

⁷Since the participants did not sign the papers during the experiment with their names, we matched the administrative data with their decisions in the experiment via their date of birth. After matching, the date of birth was deleted. The experimenters also signed a consent form about non-disclosure of any data to other

2.1 Tasks

The main outcome variable is choices made in the Random Allocation Game (RAG) that allows researchers to find out if and to what extent subjects obey rules (following Hruschka et al., 2014; Lowes et al., 2017; Purzycki et al., 2016). In this game, each participant is endowed with 60 tokens that are supposed to be divided into two envelopes following a specific rule. Tokens allocated to one of the envelopes become the subject’s while tokens in the second envelope are given to another, anonymous adolescent (the counterpart). In one round with 30 tokens to allocate, the counterpart is an adolescent from another juvenile detention center and in the second round, with another 30 tokens, the counterpart is an adolescent from a regular primary school. The rule used for the allocation of the tokens consists of two steps: first the participant mentally chooses one of two colors (black or white) and then rolls a fair dice that has three white and three black sides. If the color that turns up on the dice matches the color that was previously mentally chosen, the token is supposed to be put into the envelope assigned to the subject, and otherwise in the other envelope. This procedure is done with each of the 30 tokens. Since students make the decision in private and the choice of the color is only in their minds, it is completely their own decision to follow the specified rule or not.⁸ As is typical for the class of cheating games, we rely on the law of large numbers. If subjects follow the rule based on the roll of a die, then the allocation should be binomially distributed with approximately 50% allocated in their own envelope and 50% in the envelope for the counterpart. Therefore, we interpret any significant deviation from the 50 % allocation as a rule violation. The design allows for the identification of even a small deviation from the rule: given at least thirty individuals and thirty rolls per individual in each treatment group we can identify three percentage points as significant at $\alpha = 0.05$ (Hruschka et al., 2014).

We were especially careful about establishing anonymity. First, the RAG creates the anonymity of the decision by its design since the decisions are made only in the mind of a participant. Second, the adolescents decided in the complete privacy of separated cubicles where they could neither see nor communicate with their peers (see Figure A1) and neither the experimenter nor the assistant walked through the classroom during the RAG. Third, students put tokens in the RAG into envelopes which they themselves sealed. At the end of the session, they received the envelope with their tokens back, together with tokens from other activities (the show-up fee, the endowment manipulation, raven matrices) and went with all those tokens combined to the experimental shop. Lastly, the exchange for the rewards was conducted with only one participant at a time hence classmates could not observe the number of tokens of others. In a similar vein, students were ensured that neither teachers, nor other staff members would find out how many tokens participants received in the experiment.

2.2 Treatments

The experiment consists of three main treatments. The first treatment varies the identity of parties and gave it to the principal of the JDC.

⁸The possibility of not following the rule was not explicitly mentioned. If a participant asked an experimenter about this possibility, the experimenter followed the protocol of Hruschka et al. (2014) by responding that “we are unable to detect if participants follow the rule or not, but you should follow it anyway.”

the counterpart in the Random allocation game. Once the counterpart was an ingroup member (i.e. from the same type of institution, but from another juvenile detention center/another primary school than the decision maker) and once an outgroup member (i.e. from the other type of institution) in a counterbalanced order across sessions.⁹ Comparing the allocations to ingroup and outgroup members we can observe if and to what extent each group discriminates against outgroup adolescents. Importantly, neither of the ingroups was set up in the way that participants would know the other adolescents personally. Nevertheless, they belonged to the same or different type of institution.

Next, we manipulated the number of extra tokens participants received at the beginning of the experiment and the process by which they were distributed to subjects. Each student received either 10 tokens (condition “High”) or 0 tokens (condition “Low”) at the beginning of the experimental session. These tokens did not enter the subsequent experimental games and were paid only at the end of the experiment together with the rest of the tokens. They were distributed either by a person (condition “Person”) who essentially played a mini-dictator game with the subject, or through a lottery (condition “Lottery”). The decision in the mini-dictator game was made by an adult recruited randomly on the street. This adult person could either share 10 out of her initial endowment of 20 tokens with an adolescent, or keep all tokens for herself. It was not revealed to this adult if the adolescent, the receiver in the mini-dictator game, was from a regular primary school or from a juvenile detention center, and the participants in the experiment were informed of this fact.¹⁰ Similarly, in the Lottery condition the adolescents got either 10 or 0 tokens. It was framed as a lottery that has an equal chance of paying 10 tokens and not paying any. In both versions of the token allocation, one half of the participants in the session were randomly matched to the “High” and one half to the “Low” condition. In practice the procedure and outcome were communicated to them inside of their cubicle on a card (Figure A2) which was displayed there at eye-level for the whole duration of the experiment. The “High” and “Low” conditions were randomized on the individual level while the “Person” and “Lottery” manipulation on the session level.

Before playing the RAG, subjects were instructed that the counterpart would receive the tokens distributed by subjects together with a short message (following Cappelen et al., 2017). The content of the message could take two forms: either the “complete-information” or the “no-information” treatment and it was read aloud to students before they started making decisions in the RAG. The message in the complete-information treatment involved the context of the situation, including the procedure of the token distribution. Subjects were specifically told the following: *“The message will say that the tokens come from a young person from the Czech Republic. Then we will explain the rules of the game to them, as we explained them to you. Then, they will try the game, so that they could imagine how you play it. It means, they will see how many of the 30 tokens you have sent them and it will be clear why they received the given number of tokens.”* In the “no-information” treatment, the message did not include the description of the token division process. Subjects were told: *“The message will say that the tokens come from a young person from the Czech Republic. But they will not know how and*

⁹In the primary schools, the experimenter also briefly introduced the JDCs so that all the students would fully understand this concept because the official Czech term “Dětský domov se školou” was not necessarily to be well-known to all adolescents.

¹⁰This was done and subjects were told that a person made this decision near the Prague Main train station. The reason was to mimic a situation when an adolescent is treated either badly or nicely by a random member of the society.

how many tokens you distributed.”

After the students had made decisions in the RAG, they were provided with an opportunity to change the content of the message to the other version, i.e. if they were randomized into the complete-information treatment, they could switch the content of the message to the no-information treatment message and vice versa. They made this decision separately for the message to the ingroup and to the outgroup members. The option of switching the message had not been announced earlier in the session so participants could not strategize when making decisions in the RAG. The reason for giving them this opportunity was to disentangle the underlying motivations for obeying or violating rules. For example, if a participant was proud for not violating the rules, then he could switch from the no-info to the complete-information message so that the other adolescent would learn about this decision. Similarly, if a participant was ashamed for violating the rules, then he could switch from the complete to the no-information message.

3 Sample and procedures

3.1 Sample

We conducted a lab-in-the-field experiment in 18 juvenile detention centers and 7 regular primary schools in the Czech Republic between October and December 2015.¹¹ The principals of the JDCs and the primary schools provided written consent for conducting the experiment in class and when required, permission was given by parents. In total, 314 adolescents from JDCs and 353 adolescents from primary schools participated in the experiment.¹² The experiment was piloted both in a JDC and in a primary school before the real sessions were carried out.

All participants attended grade 5-9 which corresponds to the age range of 11 to 17 years. As expected, the JDC adolescents differ in most of the characteristics from the primary school students. Even though the JDC adolescents are similar in terms of grade level ($JDC = 7.80$ and $PS = 7.72$, $p = 0.25$, rank-sum), they are on average older ($JDC = 14.11$ and $PS = 13.25$ years, $p < 0.01$, rank-sum) since they repeat grades or postpone starting school more often, and score lower in the brief intelligence test of four Raven matrices ($JDC = 2.83$ and $PS = 3.36$ (scale 1-4), $p < 0.01$, rank-sum). There are also more boys in the JDCs than in regular schools (74% vs. 51%, $p < 0.01$, χ^2 test). In general, the delinquents come from lower socio-economic backgrounds. They have more siblings ($JDC = 4.02$ and $PS = 1.84$, $p < 0.01$, rank-sum), their parents are less educated and more likely to be divorced (refer to Table 1). Almost 45% of the delinquents had been for some time in an orphanage or a foster home before coming to a JDC.

In the Czech context, the JDCs are long-term care facilities for children and adolescents (6-15 years old) with significant behavioral problems. There are approximately 600 children in all JDCs in the Czech Republic per year. In our sample, they typically have multiple behavioral problems that led to their institutionalization such as a disrespect for authority (62%), truancy (53%), and aggression (45%). To a lesser extent, the reason for institutionalization is a theft

¹¹The sample of primary schools is not representative. On the other hand, our schools were located in several Bohemian regions in towns with approximately 5,000 - 60,000 inhabitants and the observable characteristics of primary school students match a representative sample in terms of gender composition and the education level of parents (Mullis et al., 2012).

¹²Two observations from different sessions were omitted from the analysis because of a lack of comprehension of the instructions due to severe intellectual (mental) disability.

or other petty crime (32%), lying and vulgarity (28%), running away from home (26%) or drugs and alcohol abuse (22%). Just a minority of the delinquents have committed a more serious crime (3%). The majority of adolescents had stayed in a JDC for less than a year at the time of the experiment (64%, median=10 months) with only 16% staying in a JDC longer than 2 years with the maximum of 67 months. About 42% regularly take psychiatric medication, mostly mild sedatives due to their excessive aggressiveness. Some delinquents (27%) also attend classes for students with special needs within their JDC because of learning disabilities or other mental and social problems.

The structure of their daily schedule resembles more closely the routines of orphanages than juvenile prisons: in the morning the adolescents are educated in a school which is embedded in the JDC, while the rest of the day they spend doing free-time activities (sports, art), therapy sessions, and trips during the weekends. Even though the adolescents are not allowed to leave the facility, JDCs typically cooperate with the adolescents' families so that the adolescents spend some weekends with them. Overall though, the efficacy of the institutional care in JDCs as a preventive measure is questionable: for the period of 1995-2004, 73% of former JDC adolescents committed a crime (SocioFactor, 2014). A popular perception of JDCs goes in line with Bayer et al. (2009): people believe the peer effects inside of these institutions are so strong that instead of being correctional institutions, the JDCs effectively function as schools of crime.

When evaluating the success of randomization, we note that in primary schools (Table 2), students in the full information and the person treatments were slightly older (by 0.6 years) and attended a higher grade (by 0.5 school years). The F-test of differences between the treatment groups in all three cases does not return a statistic larger than 4.51. The randomization of JDC adolescents was more successful, probably due to a larger number of sessions, and the differences across the treatments were negligible (Table 3, F-statistics not larger than 1.26). Even though the randomization was not fully successful, the results are robust to addition of control variables (Table 5, Table 6). Similarly, the results are also robust to the addition of fixed-effects on the institutional level (Table A2). We report results mainly in the form of standardized coefficients because they reasonably capture the relative size of differences across treatments.

3.2 Procedures

The experiment was conducted in Czech in a pen-and-paper format (for the English translation of the instructions see Appendix B). Sessions were executed during regular school lessons and thus lasted about 45 minutes. They took place during the morning of a regular school day and all students present that day in the target grades (grades 5 to 9) participated in the experiment. Students were given the opportunity not to participate before and during the experiment, but no student left. In order to avoid communication between students who had already participated with those who had not, sessions were organized always during consecutive lessons. Moreover, no other people except one experimenter and one assistant were present during the sessions.¹³ At the beginning, the participants were assured of full anonymity, were told about the option to leave, about the experimental currency (tokens), about the show-up

¹³One session was not included in the analysis because it had to be conducted with three educators present in the room. This reduction of anonymity could substantially influence the decisions of the subjects when compared to the rest of the sessions.

fee of five tokens and about the general rules of the experiment.

Participants were paid in tokens for their decisions in the experiment which they exchanged for rewards at the end of the session in our experimental “shop”. The shop offered a broad range of sweets, juices, sport equipment, small toys and school supplies (pencils, pencil cases and notebooks) for different token prices. In order to increase their motivation, the experimental shop with the rewards and the associated token-prices were shown to the participants at the beginning of the session. One token roughly equals 3 CZK and participants earned on average 26 tokens (78 CZK/3 EUR), including a 5 token show-up fee. To put this number into a broader perspective, the one month allowance for JDC adolescents aged 6-15 years is by law 180 CZK, so the value of the rewards from the experiment was worth 14 days’ pocket money. We consider it an amount well enough motivating their effort in the experiment.¹⁴ Participants were also told they would make decisions in several tasks but only one would be chosen at random for their real payment. After hearing this, participants drew a number at random indicating the number of their seat which had been prepared by the experimenters.

4 Results

4.1 Differences between JDC and primary school adolescents

First, we compare the percentage of tokens kept by the JDC adolescents and primary school students. The law of large numbers predicts that if adolescents followed the rules perfectly, we would observe tokens being distributed roughly equally between the subject’s self-account and the counterpart, i.e. adolescents should keep on average 50% of tokens. However, adolescents kept 59.3% of tokens which is significantly larger share than 50% ($p < 0.01$, rank-sum¹⁵). The JDC adolescents had on average 61.4% of tokens while primary school adolescents had on average 57.5% (refer to Panel A of Figure 2). It indicates a clear rule-violating behavior in the RAG similar to the behavior of adult populations (Hruschka et al., 2014; Purzycki et al., 2016).

Further, the difference between the JDC and primary school adolescents is significant reaching 0.37 SD ($p < 0.01$, column 1, Table 5).¹⁶ The size of 0.37 SD is considered a small to medium effect (Cohen, 1992) and corresponds to a 4 percentage point difference. The difference does not change with additional controls (column 3 and 4, Table 5).¹⁷ We do not claim that the coefficient represents the effect of the juvenile detention center on adolescents since both groups differ both in observable and unobservable characteristics. We rather interpret it as the rule-violating intentions of two distinct populations.¹⁸

¹⁴Children may however get additional money from parents. Even though the scientific evidence on pocket money of non-institutionalized children and adolescents in the Czech Republic is non-existent, various media surveys suggest that the pocket money of average children resembles the pocket money of adolescents of JDCs (100 CZK for children of age 6-10, 200 CZK for adolescents of age 10-15).

¹⁵The equality tests are based on individual averages to account for the fact that reporting behavior could be correlated within individuals.

¹⁶We cluster the observations on the subject level since each subject has performed the RAG twice.

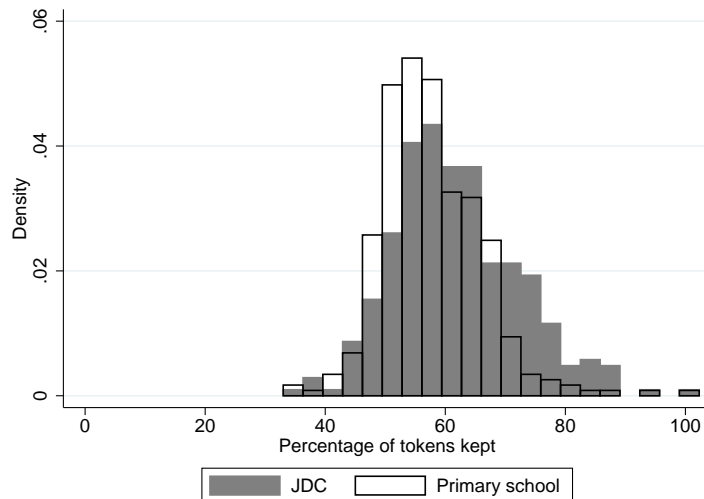
¹⁷From the added variables, we observe a significant negative effect of age. The negative development of cheating with age is in line with Glätzle-Rützler and Lergetporer (2015), however we are agnostic about the channels involved since age effects were not the main point of investigation.

¹⁸To get more insights on how adolescents from the two different populations but with similar characteristics

The distribution for both groups shows that the difference between the JDC adolescents and primary school students is not driven by a few individuals, rather the whole distribution is shifted to the right ($p < 0.01$, Kolmogorov-Smirnov test). The extreme values are more common but still very rare among JDC adolescents (Figure 4).

Finding 1: Both subject groups show signs of rule-violating behavior. The JDC adolescents violate rules on average by 0.37 SD more than the primary school students.

Figure 1: Distributions of tokens kept in JDC and primary school



Notes: Distribution of share of tokens (0-100) for JDC and primary schools. Values expressed as a mean of two observations for each individual.

4.2 Identity of counterpart (ingroup / outgroup)

Each of the subjects played the RAG twice in a randomized order: once the counterpart (i.e. the recipient of the tokens) was another adolescent from the same type of institution (ingroup), and another time the counterpart was an adolescent from the other type of institution (outgroup). Panel B of Figure 2 shows that both JDC and primary school adolescents do not discriminate against outgroup members.¹⁹ The JDC adolescents keep 61.6% of tokens when the counterpart is also from a JDC and 61.3% of tokens when the counterpart is from the primary school ($p = 0.76$, rank-sum). Primary school adolescents keep 57.3% of tokens when sharing with outgroup counterparts and 57.7% with ingroup counterparts ($p = 0.50$, rank-

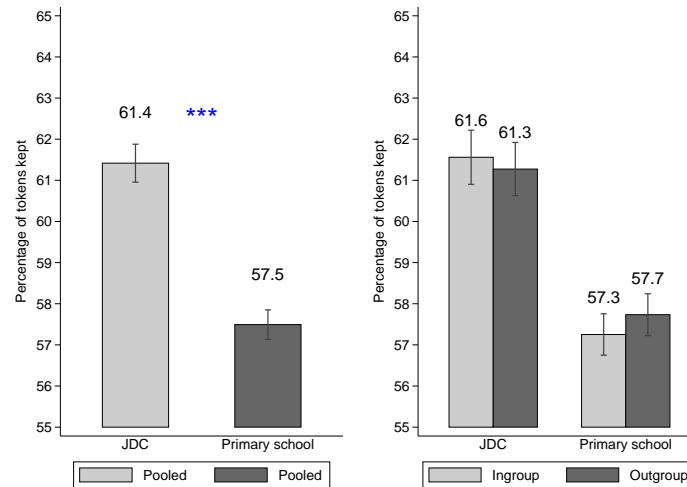
behave, we re-estimate the effect using propensity score matching (column 2, Table 5). The effect turns out to be smaller (0.16 SD) and insignificant ($p = 0.25$). Both groups may and most likely do differ in unobservable characteristics (e.g. behavioral problems) and therefore are still not perfectly comparable. On the other hand, the propensity score matching further supports our initial claim that the difference in rule-violations between the JDC and PS adolescents is rather small.

¹⁹Comparing only the decisions from the first round to mimic between-subject design shows exactly the same pattern ($p = 0.543$, rank-sum) ruling out a potential concern that the results are driven by one of the two rounds. Results available upon request.

sum).²⁰ This result holds even when considering the interactions in the different treatment arms (Table A3). In other words, discrimination of outgroup adolescents is not influenced by being exposed to an unfair treatment or to a change in social context. Therefore, in the further analysis we pool the observations and do not differentiate with respect to the identity of the counterpart.

Finding 2: Neither of the groups discriminates between the different counterparts in the RAG.

Figure 2: JDC and primary school and ingroup and outgroup conditions



Notes: Mean share of tokens kept (0-100) for JDC and primary school (Panel A) and divided into In- and Outgroup (Panel B). Bars indicate mean \pm standard error, differences tested between two neighboring bars, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.3 Unfavorable economic situation

Subjects were randomly exposed to a/an (un)favorable economic situation. They either received nothing or ten tokens as the result of the decision of an anonymous person, or due to pure luck. First, we investigate how this income shock affects rule-violating behavior. Subjects who received nothing at the beginning keep on average 60.1% of tokens whereas those who received 10 tokens keep 58.49% of tokens (column 1, Table 4). Even though being exposed to the unfavorable situation increases rule-violation, the effect size is small in magnitude, 0.14 SD (column 3 in Table 5). This result thus adds to so far mixed evidence on the response to a/an (un)favorable situation. Houser et al. (2012) reports higher cheating of participants after the unfavorable treatment while Capraro and Marcelletti (2014) do not find a lower cooperation after the same manipulation.

Then, we investigate if the coefficients differ for JDC and primary school adolescents. The size of the effects is 0.13 SD for JDC and 0.15 SD for primary school adolescents (column 1

²⁰We also cannot reject that the distributions are similarly distributed (Full-sample ($p = 0.963$), JDC ($p = 0.897$), PS ($p = 0.781$), Kolmogorov-Smirnov test).

and 5, Table 6) and they do not differ significantly ($p = 0.88$). It shows that JDC adolescents are not more susceptible to unfavorable treatment than regular adolescents. In the next step, we investigate how rule-violation varies depending on how the unfavorable situation arised (person/lottery).

Finding 3: The exposure to favorable conditions affects violation of rules but similarly for the JDC and primary school adolescents.

4.4 Unfavorable economic situation caused by person or lottery

The tokens were distributed to the subjects either based on the decision of an anonymous person, or based on the outcome of the fair lottery. First, we look if the overall source matters for rule-violation while merging together the unfavorable and the favorable situation (0 and 10 tokens). Overall, adolescents keep by about 0.21 SD less when they receive either 0 or 10 tokens from a person than 0 or 10 tokens from the lottery (Table 5, $p < 0.01$). Even though the effect is stronger for the primary-school students (PS: 0.31 SD, $p < 0.01$; JDC: 0.10 SD, $p = 0.25$; column 1 and 5 in Table 6), the interaction term (Person x JDC) remains insignificant ($p = 0.29$).

Then, we further split the decisions by the type of economic situation to explore if adolescents are more sensitive to a/an (un)favorable economic situation in the Person treatment than in the Lottery treatment. We find that adolescents do not vary in response to the favorable and the unfavorable economic situation (*Person x High*) created by different means (column 5, Table 5). In other words, if adolescents receive zero from the lottery or due to the decision of a person, it does not impact rule-violation differently. Moreover, the same pattern is detected in both sub-samples (column 3 and 7 in Table 6). It means that the JDC adolescents are no more than regular adolescents sensitive to the unfavorable treatment caused by a person rather than by the lottery.

Finding 4: Adolescents are no more prone to rule-violation in the unfavorable situation when the situation arises due to a person (i.e. an unfair situation) than to the lottery. This pattern holds both for JDC and primary school adolescents.

4.5 Information manipulation (complete- or no-information)

Participants were informed that the tokens distributed to the counterpart in the RAG task would be delivered with a message stating either only the origin of the tokens (no-information treatment), or with the context of the game (complete-information treatment). In the no-information treatment, the main motivations for no rule-violation are assumed to be empathy and intrinsic moral motivation, whereas in the complete-information treatment it is self-image, guilt and shame, in other words extrinsic social motivations.

Looking at the full sample, we observe that subjects in the complete-information treatment violate rules by 0.21 SD less than in the no-information treatment ($p < 0.01$, column 3, Table 5). This result indicates that extrinsic social motivations are a driver of honest behavior. The size of the coefficient is similar in magnitude to the Person treatment and roughly corresponds to two years of age difference.

Then, we examine if the coefficient differs for the JDC and primary school adolescents. The interaction term (JDC x Complete info) is insignificant ($p = 0.75$, column 5, Table 5). It means that also among juvenile delinquents honesty is valued and both groups care about

extrinsic social motivations. Importantly, the JDC adolescents decrease rule violating behavior when the message is observed both by a primary school student or by another JDC adolescent (Table A3).

Finding 5: The message to the recipients of tokens in the RAG containing complete information about the context of the game induces less violation of rules in both subject groups by 0.2 SD.

4.6 Switching behavior

After playing the RAG, participants were given the opportunity to change the type of message to be delivered to their counterparts. Adolescents switch significantly more from the no-information message to complete-information message than from the complete-information message to no-information message (52.0% vs. 22.7%, $p < 0.01$, rank-sum). This pattern is similar both for JDC (46.3% vs. 21.9%, $p < 0.01$, rank-sum) and primary school adolescents (56.3% vs. 23.5%, $p < 0.01$, rank-sum).

To further shed light on the motivations of adolescents, we explore which adolescents opt for switching. In the no-information treatment, adolescents who switch to the complete-information message keep fewer tokens than those who do not switch (switching = 58.52%, no-switching = 62.07%, $p < 0.01$, rank-sum). Because adolescents who opt for switching are those with less or no rule-violation, a plausible reason for switching is pride in a good deed. Further, the switching rate does not differ for the JDC adolescents and primary school students in the no-information treatment (Column 2-3, Table 7).

In the complete-information treatment, only a small share of participants switch. Moreover, there is no difference in terms of tokens kept between those who switch and those who do not switch (58.14% vs. 58.27%, $p = 0.89$, rank-sum). It suggests that there is not a strong motivation to hide rule-violation. Looking back at the behavior in the RAG, adolescents in the complete-information treatment kept fewer tokens than adolescents in the no-information treatment (60.28% vs. 58.27%, $p < 0.01$, rank-sum). Therefore, adolescents could have already adjusted their behavior in the RAG and have little incentive to switch. Alternatively, only those with high preference for privacy switch.

Importantly, switching behavior does not differ ingroup and outgroup for the JDC and primary school adolescents (Table A4). It is a piece of evidence showing that not even JDC adolescents want to signal pride from rule-violating behavior to their JDC peers.

Finding 6: JDC and primary school adolescents switch significantly more from the no-information to complete-information message than the other way round. In both groups, adolescents who opt for switching are those who keep fewer tokens in the RAG.

4.7 External validity of laboratory measure of rule-violation

In this section, we study the validity of our laboratory measure of rule-violation by correlating the share of tokens kept in the RAG with data on behavioral problems. We had access to the list of the reasons for placement that consisted mostly of problems adolescents had when they entered the JDC. A description of their problems was provided by social workers, psychologists and schools. They include disrespect for authority, truancy, running away, aggression, misdemeanors, crimes, sexual crimes, drugs and alcohol, lying and bullying, self-harm, neglect by family, assault, problematic peers and promiscuity. Adolescents typically have multiple

problems which are related. We construct an index which is the sum of all reported problems at the individual level. We argue that the index is a proxy for the severity of behavioral problems. We do not include neglect by family in the index because according to the JDC employees it is the only reason not considered a behavioral problem. Moreover, it is the only problem negatively correlated with other problems. The index ranges from zero to six.²¹ As additional evidence, we correlate the rate of rule-violation with the number of months spent in the JDC. Typically, courts reassess if a delinquent needs additional time in a JDC after 6-12 months. It means that if there is no progress in behavior and attitudes, their stay is extended. The number of months is therefore a crude proxy for progress in behavior.

Table 8 reports the index and number of months in a JDC which are regressed on the share of tokens kept in the RAG and additional controls. Column 1 shows that the behavioral problem index is significantly correlated with the rate of rule-violation. Increase in the rate of rule-violation by one standard deviation is associated with 0.19 more behavioral problems. Similarly, one standard deviation increase in rule violation is associated with a 1.19 month longer stay in a JDC (column 2). Importantly, the rate of rule-violation is the only significant coefficient in both regressions. Only having more siblings is associated with a lower number of behavioral problems in the first regression. It suggests that our laboratory measure of rule-violation is not only an important predictor of real-life behavior but also an important predictor of behavior compared to other personal and background characteristics.

Finding 7: The rate of rule-violation is positively correlated with the severity of behavioral problems.

5 Concluding remarks

In this paper, we report an initial evidence on the differences in rule-violating behavior between problematic and non-problematic adolescents. We manipulate the context in three ways: (i) the identity of the counterpart (JDC or primary school), (ii) exposure to a/an (un)favorable economic situation and (iii) the saliency of social motivations. For this purpose we conducted a lab-in-the-field experiment with 314 adolescents from juvenile detention centers and 353 from primary schools. Taken together, our results reveal substantial similarities between troubled youth and regular primary school students.

Even though the problematic adolescents violate rules more than the non-problematic (about 0.4 SD), the response to the treatments is very similar in both groups. Our first main result shows that neither group discriminates against the outgroup members. This fits to recent studies conducted with adult prisoners (Khadjavi and Lange, 2013; Birkeland et al., 2013) and could be understood as a necessary but not sufficient condition for their resocialization. This result speaks also to the literature on social distance which turns out to be an important motivation for adolescents (Belot and van de Ven, 2011; Goeree et al., 2010). We show that when social distance is absent and adolescents decide only based on membership to similar or different types of institution, they display no ingroup favoritism.

²¹Table A7 reports correlations of the laboratory measure of rule-violation with individual types of problems. The signs of coefficients are in accordance with our expectations. Interpersonal problems, misdemeanors and truancy are positively correlated with rule-violation while drugs and neglect are negatively correlated. One standard deviation increase in the laboratory measure of rule-violation is associated with 2-4 % change in the probability of having particular behavioral problem. On the other hand, the coefficients are only close to significance (p-values: for truancy $p = 0.14$, int. problems $p = 0.19$, petty crimes $p = 0.2$).

We do not find support for generalized reciprocity similarly to Capraro and Marcelletti (2014) since the favorable treatment only marginally decreases the rate of rule violation in our sample. However, testing the unfair treatment might be sensitive to the design of the manipulation. First, framing of the situation of not receiving an extra income may have been not as salient as a loss framing would have been; as Gray et al. (2014) find an easier spread of negative attitudes compared to positive ones. Second, the time delay between the treatment intervention and the decisions in the RAG may have dissipated uncontrolled emotional and/or angry responses that would affect subjects' behavior. The results thus need not be in contradiction with anger management treatments and cognitive behavioral therapies (for example Cook et al. 2014; Del Vecchio and O'Leary 2004; Hill et al. 2011; Heller et al. 2017) which target the improvement of automatic responses and proved to be successful in various contexts. More research is, therefore, needed to disentangle precisely the underlying mechanisms.

The similar response of JDC adolescents and PS students to the manipulation where the context of the game was exposed to the counterpart highlights the preference for preservation of social-image. Juvenile delinquents are concerned with their positive image as honest (moral) people which may advocate for its incorporation in therapeutic treatments. One of the implementations already used may be the inclusion of family members, peers and role models in the therapeutic process which may positively motivate adolescents to obey social rules (Dishion and Kavanagh, 2003; Henggeler et al., 2009; Kosse et al., 2016).

Moreover, there is another reason for including families in the treatment process: the non-discriminatory behavior of JDC adolescents revealed in our experiment may come from their frequent contact with their families and friends outside JDCs and may preclude the development of strong ingroup identity within JDCs. Isolating the delinquents from the society could lead to the formation of additional psychological barriers such as negative attitudes towards the general society or the creation of tighter social networks observed among JDC adolescents thus preventing their resocialization (Bayer et al., 2009; Dishion et al., 1999). Second, the non-discriminatory behavior of the non-problematic adolescents suggests that they do not stigmatize adolescents from JDCs. This is in contradiction with what has been observed for prisoners (Behrens, 2004; Visser and Travis, 2003). Both results are an important prerequisite for their successful resocialization.

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Figure 3: Timeline of the experiment

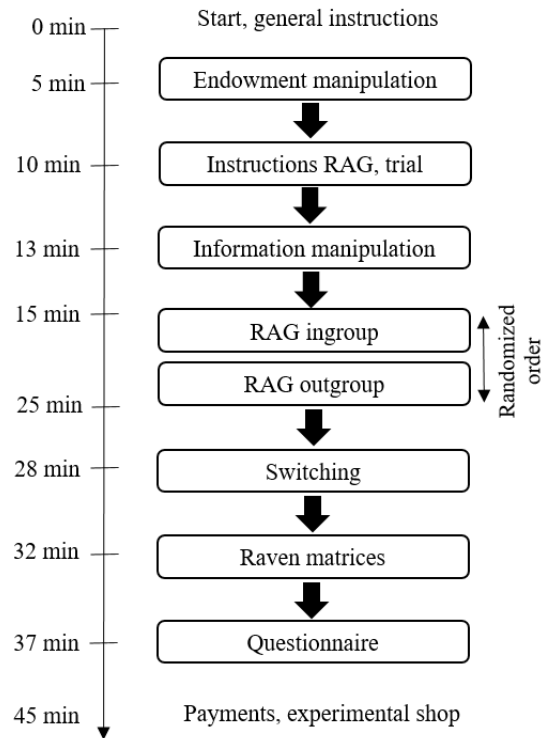


Table 1: Descriptive statistics

	(1)	(2)	(3)	(4)
	Total	Primary school	JDC	p-value
Male	0.61 (0.49)	0.50 (0.50)	0.74 (0.44)	<i>0.00</i>
Age	13.66 (1.20)	13.25 (1.17)	14.12 (1.05)	<i>0.00</i>
Grade	7.76 (1.06)	7.80 (1.10)	7.72 (1.02)	<i>0.18</i>
N. of siblings	2.86 (2.63)	1.84 (1.44)	4.02 (3.13)	<i>0.00</i>
Education mother	2.10 (0.62)	2.25 (0.52)	1.90 (0.69)	<i>0.00</i>
Education father	2.11 (0.62)	2.21 (0.53)	1.94 (0.70)	<i>0.00</i>
Parents live together	0.60 (0.59)	0.73 (0.48)	0.46 (0.67)	<i>0.00</i>
Raven matrices	3.11 (1.00)	3.36 (0.79)	2.83 (1.12)	<i>0.00</i>

Notes: Mean values of personal and background variables in total and by the type of institution. Male and parents live together are binary, age in years, grade (5-9), education mother and father (1 - primary school, 2 - secondary school, 3 - university), raven matrices is an intelligence measure (scale 1-4). Column 4 tests equality of values in columns 2 and 3 (χ^2 test in case of binary variables and rank-sum tests in case of interval variables).

Table 2: Randomization check - Primary schools

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	No info	Full info	p-value	Lottery	Person	p-value	Low	High	p-value
Male	0.50 (0.50)	0.51 (0.50)	0.49 (0.50)	<i>0.63</i>	0.50 (0.50)	0.49 (0.50)	<i>0.59</i>	0.49 (0.50)	0.51 (0.50)	<i>0.38</i>
Age	13.25 (1.17)	13.04 (1.30)	13.52 (0.92)	<i>0.00</i>	13.04 (1.21)	13.45 (1.11)	<i>0.00</i>	13.24 (1.18)	13.26 (1.17)	<i>0.89</i>
Grade	7.80 (1.10)	7.58 (1.26)	8.09 (0.77)	<i>0.00</i>	7.52 (1.12)	8.06 (1.02)	<i>0.00</i>	7.80 (1.10)	7.80 (1.11)	<i>0.73</i>
N. of siblings	1.84 (1.44)	1.82 (1.49)	1.85 (1.36)	<i>0.85</i>	1.69 (1.39)	1.98 (1.46)	<i>0.06</i>	1.80 (1.43)	1.87 (1.45)	<i>0.67</i>
Education mother	2.25 (0.52)	2.23 (0.53)	2.28 (0.49)	<i>0.38</i>	2.29 (0.57)	2.20 (0.46)	<i>0.11</i>	2.26 (0.48)	2.24 (0.55)	<i>0.69</i>
Education father	2.21 (0.53)	2.19 (0.54)	2.23 (0.52)	<i>0.51</i>	2.20 (0.56)	2.22 (0.51)	<i>0.74</i>	2.22 (0.49)	2.21 (0.58)	<i>0.86</i>
Raven matrices	0.73 (0.48)	0.74 (0.48)	0.73 (0.49)	<i>0.86</i>	0.74 (0.48)	0.73 (0.48)	<i>0.87</i>	0.73 (0.51)	0.73 (0.44)	<i>1</i>
N	353	201	152		169	184		182	171	
F-statistic		<i>2.7</i>			<i>4.51</i>			<i>0.29</i>		

Notes: Mean values of personal and background variables by main treatments. Male and parents live together are binary, age in years, grade (5-9), education mother and father (1 - primary school, 2 - secondary school, 3 - university), raven matrices is an intelligence measure (scale 1-4). Column 4, 7 and 10 test equality of values in previous 2 columns (χ^2 test in case of binary variables and rank-sum tests in case of interval variables).

Table 3: Randomization check - Juvenile detention centers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	No info	Full info	p-value	Lottery	Person	p-value	Low	High	p-value
Male	0.74	0.71	0.77	<i>0.45</i>	0.76	0.72	<i>0.40</i>	0.72	0.76	<i>0.26</i>
	(0.44)	(0.45)	(0.42)		(0.43)	(0.45)		(0.45)	(0.43)	
Age	14.12	14.07	14.16	<i>0.50</i>	14.15	14.09	<i>0.74</i>	14.09	14.15	<i>0.44</i>
	(1.05)	(1.08)	(1.03)		(1.07)	(1.03)		(1.07)	(1.04)	
Grade	7.72	7.66	7.78	<i>0.97</i>	7.72	7.72	<i>0.96</i>	7.71	7.73	<i>0.41</i>
	(1.02)	(1.03)	(1.01)		(1.02)	(1.02)		(1.03)	(1.01)	
N. of siblings	4.02	3.95	4.08	<i>0.05</i>	3.93	4.09	<i>0.97</i>	3.76	4.32	<i>0.92</i>
	(3.13)	(2.96)	(3.30)		(2.82)	(3.41)		(3.04)	(3.23)	
Education mother	1.90	1.84	1.96	<i>0.62</i>	1.82	1.98	<i>0.07</i>	1.91	1.87	<i>0.19</i>
	(0.69)	(0.64)	(0.74)		(0.68)	(0.69)		(0.70)	(0.67)	
Education father	1.94	1.94	1.95	<i>0.35</i>	1.88	2.00	<i>0.26</i>	1.90	2.00	<i>0.95</i>
	(0.70)	(0.70)	(0.70)		(0.64)	(0.75)		(0.68)	(0.73)	
Raven matrices	2.83	2.99	2.67	<i>0.57</i>	2.83	2.83	<i>0.94</i>	2.87	2.78	<i>0.02</i>
	(1.12)	(1.04)	(1.18)		(1.13)	(1.12)		(1.10)	(1.15)	
Parents live together	0.46	0.47	0.44	<i>0.78</i>	0.38	0.53	<i>0.11</i>	0.46	0.45	<i>0.90</i>
	(0.67)	(0.67)	(0.66)		(0.56)	(0.75)		(0.66)	(0.68)	
Orphanage/Foster home	0.45	0.38	0.50	<i>0.89</i>	0.47	0.42	<i>0.43</i>	0.44	0.45	<i>0.04</i>
	(0.50)	(0.49)	(0.50)		(0.50)	(0.50)		(0.50)	(0.50)	
Months spent in JDC	13.09	11.76	14.27	<i>0.73</i>	12.81	13.37	<i>0.17</i>	13.01	13.18	<i>0.26</i>
	(12.09)	(10.41)	(13.34)		(13.12)	(10.96)		(12.29)	(11.89)	
Psychiatric medication	0.42	0.36	0.47	<i>0.75</i>	0.40	0.44	<i>0.61</i>	0.41	0.43	<i>0.08</i>
	(0.49)	(0.48)	(0.50)		(0.49)	(0.50)		(0.49)	(0.50)	
Special education plan	0.27	0.17	0.36	<i>0.83</i>	0.24	0.31	<i>0.18</i>	0.28	0.26	<i>0.00</i>
	(0.45)	(0.38)	(0.48)		(0.43)	(0.46)		(0.45)	(0.44)	
N		154	160		152	162		171	143	
F-statistic		<i>1.01</i>			<i>1.26</i>			<i>1.14</i>		

Notes: Mean values of personal and background variables by the main treatments. Male, parents live together, orphanage/foster, psychiatric medication and special education are binary, age in years, grade (5-9), education mother and father (1 - primary school, 2 - secondary

chool, 3 - university), raven matrices is an intelligence measure (scale 1-4). Column 4, 7 and 10 test equality of values in previous 2 columns (χ^2 test in case of binary variables and rank-sum tests in case of interval variables).

Table 4: Treatment effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Full		JDC		PS		p-value
Full	59.34	(9.72)	61.47	(10.60)	57.49	(8.45)	0.00
<i>Treatments</i>							
Ingroup	59.40	(10.63)	61.27	(11.47)	57.73	(9.56)	0.00
Outgroup	59.28	(10.76)	61.56	(11.66)	57.25	(9.45)	0.00
p-value	0.84		0.76		0.50		
High	60.10	(10.33)	62.03	(11.43)	58.29	(8.83)	0.00
Low	58.49	(8.92)	60.69	(9.50)	56.65	(7.98)	0.00
p-value	0.06		0.39		0.07		
Lottery	60.46	(9.95)	61.85	(10.86)	59.21	(8.91)	0.04
Person	58.30	(9.39)	61.01	(10.36)	55.91	(7.71)	0.00
p-value	0.02		0.77		0.00		
No-info	60.28	(9.60)	62.73	(9.59)	58.4	(9.21)	0.00
Info	58.27	(9.75)	60.16	(11.37)	56.29	(7.20)	0.00
p-value	0.01		0.02		0.07		

Notes: Mean values of share of tokens kept by the main treatments, standard deviations in parentheses. Column 7 compares means between JDC and PS adolescents (t-test), individual averages to account for correlating decisions across individuals. Rows 5,8 and 11 compare means across treatments.

Table 5: Regression analysis - Full sample

Dep. Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Share of tokens kept (standardized)</i>						
	OLS	PSM	OLS	OLS	OLS	OLS	OLS
JDC	0.37*** (0.07)	0.16 (0.11)	0.38*** (0.07)	0.39*** (0.08)	0.39*** (0.08)	0.28* (0.14)	0.38** (0.08)
High			-0.14** (0.07)	-0.16** (0.07)	-0.20** (0.10)	-0.15* (0.08)	-0.19* (0.11)
Person			-0.21*** (0.07)	-0.20*** (0.07)	-0.24** (0.10)	-0.31*** (0.08)	-0.32*** (0.11)
Complete info			-0.23*** (0.07)	-0.21*** (0.07)	-0.21*** (0.07)	-0.20** (0.08)	-0.16** (0.08)
High x Person					0.08 (0.13)		0.09 (0.13)
High x JDC						0.02 (0.14)	-0.02 (0.14)
Person x JDC						0.22 (0.14)	0.15 (0.14)
Complete info x JDC						-0.04 (0.14)	-0.11 (0.14)
Age				-0.11*** (0.03)	-0.11*** (0.03)		-0.11*** (0.03)
Male				0.10 (0.07)	0.10 (0.07)		0.10 (0.07)
N. of siblings				0.01 (0.01)	0.01 (0.01)		0.01 (0.01)
Raven-score				-0.06 (0.04)	-0.06 (0.04)		-0.06 (0.04)
Constant	-0.17*** (0.04)		0.11 (0.08)	1.68*** (0.44)	1.71*** (0.44)	0.16* (0.09)	1.70*** (0.44)
Observations	1,334	1,292	1,334	1,292	1,292	1,334	1,292
R-squared	0.03		0.06	0.09	0.09	0.06	0.09

Notes: OLS for columns 1 and 3-7; Propensity score matching (column 2). Nearest neighbor method

(1:1). Standard errors clustered at the individual level (in parentheses). *** p<0.01, ** p<0.05,

* p<0.1. Dependent variable is a share of tokens kept by the participant (0-100 - standardized).

Raven-score is on 0-4 scale.

Table 6: Regression analysis - Subsamples

Dep. variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>Share of tokens kept (standardized)</i>							
	JDC			Primary school				
High	-0.13 (0.11)	-0.18 (0.10)	-0.18 (0.16)	-0.28* (0.16)	-0.15* (0.08)	-0.14* (0.08)	-0.14 (0.13)	-0.14 (0.13)
Person	-0.10 (0.11)	-0.12 (0.11)	-0.14 (0.16)	-0.21 (0.15)	-0.31*** (0.08)	-0.26*** (0.08)	-0.30** (0.12)	-0.26** (0.12)
Complete info	-0.25** (0.11)	-0.28** (0.11)	-0.25** (0.11)	-0.28** (0.11)	-0.20** (0.08)	-0.16** (0.08)	-0.20** (0.08)	-0.16** (0.08)
Person x High			0.10 (0.22)	0.19 (0.22)			-0.02 (0.17)	-0.01 (0.17)
Age		-0.10* (0.06)		-0.11* (0.06)		-0.10*** (0.03)		-0.11*** (0.04)
Male		0.23** (0.12)		0.23** (0.12)		0.01 (0.08)		0.01 (0.08)
N. of siblings		0.02 (0.02)		0.02 (0.02)		-0.04 (0.03)		-0.04 (0.03)
Raven-score		-0.06 (0.05)		-0.06 (0.05)		-0.06 (0.05)		-0.06 (0.05)
Constant	0.44*** (0.11)	-1.90** (0.84)	0.46*** (0.13)	1.95*** (0.83)	0.16* (0.09)	1.77*** (0.51)	0.15 (0.11)	1.77*** (0.52)
Observations	628	602	628	602	706	690	706	690
R-squared	0.02	0.06	0.02	0.06	0.05	0.08	0.05	0.08

Notes: OLS. Standard errors clustered on the individual level (in parentheses). *** p<0.01, ** p<0.05, * p<0.1. Regressions estimated for the JDC only (column 1-3) and primary school only (column 4-6). Dependent variable is a share of tokens kept by the participant (0-100 - standardized). Raven-score is on 0-4 scale.

Table 7: Switching - percentage of participants

	(1)	(2)	(3)	(4)	(5)	(6)
	No info			Complete info		
	Full	JDC	PS	Full	JDC	PS
Share of switching participants	52.0%	46.3%	56.3%	22.7%	21.9%	23.5%
Share of tokens kept (switching participants)	58.52	61.32	56.83	58.14	59.86	56.48
Share of tokens kept (non-switching part.)	62.07	63.82	60.50	58.27	60.12	56.29
p-value	0.000	0.136	0.000	0.887	0.884	0.952

Notes: Share of participants who switched message content by info treatment and type of institution (Row 1). Means of share of tokens kept by information treatment, institution and decision in switching (Row 2 and 3). The last row tests equality of values for switching no switching (rank-sum test).

Table 8: External validity of rule-violating measures

	(1)	(2)
	Behavioral problem	Months
Dep. variable	index	in JDC
Share of tokens	0.19***	1.22*
	(0.06)	(0.72)
Constant	2.59**	16.27
	(1.05)	(10.32)
Observations	480	514
R-squared	0.04	0.04
Controls	YES	YES

Notes: OLS. Standard errors clustered at the individual level (in parentheses). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Regressions estimated for the sample of JDC adolescents. The dependent variable Reasons is the sum of all reasons for placement into JDC except neglect (range 0-6). Months in JDC range from 0-67. Column 1 and 2 estimated using OLS, Variable Share of tokens is standardized (mean 0, st. dev. 1). All regressions control for treatments (high, person, complete info), age, gender, . number of siblings and raven-score.

Supplementary materials

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This file contains appendix tables and the experimental instructions to the article "Are Juvenile Delinquents Incurable? Experimental Evidence from Detention Centers".

A Additional results

Table A1: Reasons for placement to JDC

	Mean	SD
Disrespecting authorities	0.62	(0.49)
Truancy	0.53	(0.50)
Aggression	0.45	(0.50)
Thefts	0.32	(0.47)
Lying and vulgarities	0.28	(0.45)
Running away from home	0.26	(0.44)
Drugs and alcohol	0.22	(0.41)
Neglected by parents	0.18	(0.39)
Self-harm	0.07	(0.26)
Problematic peers	0.05	(0.22)
Crime	0.03	(0.18)
Interpersonal problems	0.78	(0.41)
N	293	

Notes: All variables are binary. Variable interpersonal problems is equal to one if at least one of variables disrespecting authorities, aggression or lying and vulgarities is equal to one.

Table A2: Treatment effects with institution fixed-effects

	(1)	(2)	(3)	(4)	(5)	(6)
	Full		JDC		Primary school	
JDC	0.40 (0.26)	0.67** (0.28)				
High		-0.16** (0.07)	-0.13 (0.11)	-0.18* (0.11)	-0.15* (0.08)	-0.14* (0.08)
Person		-0.14 (0.11)	-0.06 (0.14)	-0.09 (0.14)	-0.26 (0.16)	-0.26* (0.15)
Complete info		-0.19*** (0.07)	-0.23* (0.12)	-0.26** (0.12)	-0.19** (0.09)	-0.14 (0.09)
Age		-0.12*** (0.04)		-0.12** (0.06)		-0.12** (0.05)
Male		0.07 (0.07)		0.18 (0.13)		0.02 (0.08)
N._of_siblings		0.01 (0.02)		0.02 (0.02)		-0.04 (0.03)
Raven-score		-0.06 (0.04)		-0.06 (0.05)		-0.06 (0.05)
Constant	-0.17 (0.14)	1.66*** (0.51)	0.46* (0.27)	2.24** (0.88)	0.07 (0.20)	2.01*** (0.73)
Observations	1,334	1,292	628	602	706	690
R-squared	0.10	0.14	0.10	0.13	0.08	0.10

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table A3: Ingroup and outgroup interaction in info treatment

	(1)	(2)	(3)
	Full	JDC	PS
Ingroup	0.07 (0.06)	-0.01 (0.11)	0.12 (0.08)
High	-0.16** (0.08)	-0.17 (0.12)	-0.11 (0.09)
Person	-0.22*** (0.08)	-0.12 (0.13)	-0.29*** (0.09)
Complete info	-0.17** (0.08)	-0.27** (0.13)	-0.09 (0.09)
Ingroup x High	-0.04 (0.07)	-0.02 (0.10)	-0.07 (0.09)
Ingroup x Person	0.02 (0.07)	-0.01 (0.10)	0.04 (0.09)
Ingroup x Complete info	-0.10 (0.07)	-0.03 (0.10)	-0.15* (0.09)
Constant	1.14*** (0.43)	1.90** (0.85)	1.71*** (0.52)
Observations	1,292	602	690
R-squared	0.06	0.06	0.08
Controls	YES	YES	YES

Table A4: Switching - share of tokens (in- and outgroup)

Dep. Variable:	<i>Share of tokens kept</i>					
	Ingroup			Outgroup		
	no-info	info	difference	no-info	info	difference
<i>Panel A: Full sample</i>						
Switching	59.91	57.63	2.27	57.13	58.55	1.42
Obs.	181	62		180	78	
No switching	61.34	58.09	3.25	62.83	58.46	4.37
obs.	169	248		164	229	
p-value	0.209	0.760		0.000	0.949	
<i>Panel B: Primary school</i>						
Switching	58.22	56.00	2.22	55.56	56.83	1.26
Obs.	94	30		118	41	
No switching	59.79	56.17	3.62	61.32	56.42	4.89
obs.	107	121		81	110	
p-value	0.271	0.924		0.000	0.777	
<i>Panel C: Juvenile detention center</i>						
switching	62.34	59.17	3.18	60.11	60.45	0.34
obs.	74	32		62	37	
no switching	63.29	59.92	3.37	64.30	60.34	3.96
obs.	75	127		83	119	
t-test	0.605	0.746		0.016	0.962	

Notes: Means of share of tokens kept by info treatment, institution and decision in switching. The last row of each panel tests equality of values for switching no switching (rank-sum test).

Table A5: Switching - percentage of switching participants

Dep. Variable:	<i>Share of switching participants</i>			
	Switching from no to full info		Switching from full to no info	
	Ingroup	Outgroup	Ingroup	Outgroup
<i>Panel A: Full sample</i>				
not restricted	51.7%	52.3%	20.0%	25.4%
< median of tokens kept	54.5%	63.3%	19.4%	24.0%
> median of tokens kept	49.5%	42.1%	20.4%	26.4%
p-value	0.353	0	0.818	0.638
<i>Panel B: Primary school</i>				
not restricted	53.2%	59.3%	19.9%	27.2%
< median of tokens kept	60.2%	69.4%	20.6%	23.9%
> median of tokens kept	45.9%	46.6%	19.3%	30.0%
p-value	0.044	0.001	0.841	0.406
<i>Panel C: Juvenile detention center</i>				
not restricted	49.7%	42.8%	20.1%	23.7%
< median of tokens kept	43.4%	50.9%	18.0%	24.1%

> median of tokens kept	53.1%	37.8%	21.4%	23.5%
p-value	0.258	0.124	0.605	0.925

Notes: Share of participants who switched message content by info treatment and type of institution. The last row tests equality of shares of switching participants according to the median of tokens kept (X^2 test).

	(1)	(2)	(3)	(4)	(5)
	Interpersonal problems	Petty crimes	Truancy	Drugs	Neglect
Shar of tokens	0.03 (0.02)	0.03 (0.02)	0.04 (0.03)	-0.02 (0.02)	-0.02 (0.02)
Constant					
Observations	516	516	516	516	516
R-squared					
Controls	YES	YES	YES	YES	YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05,

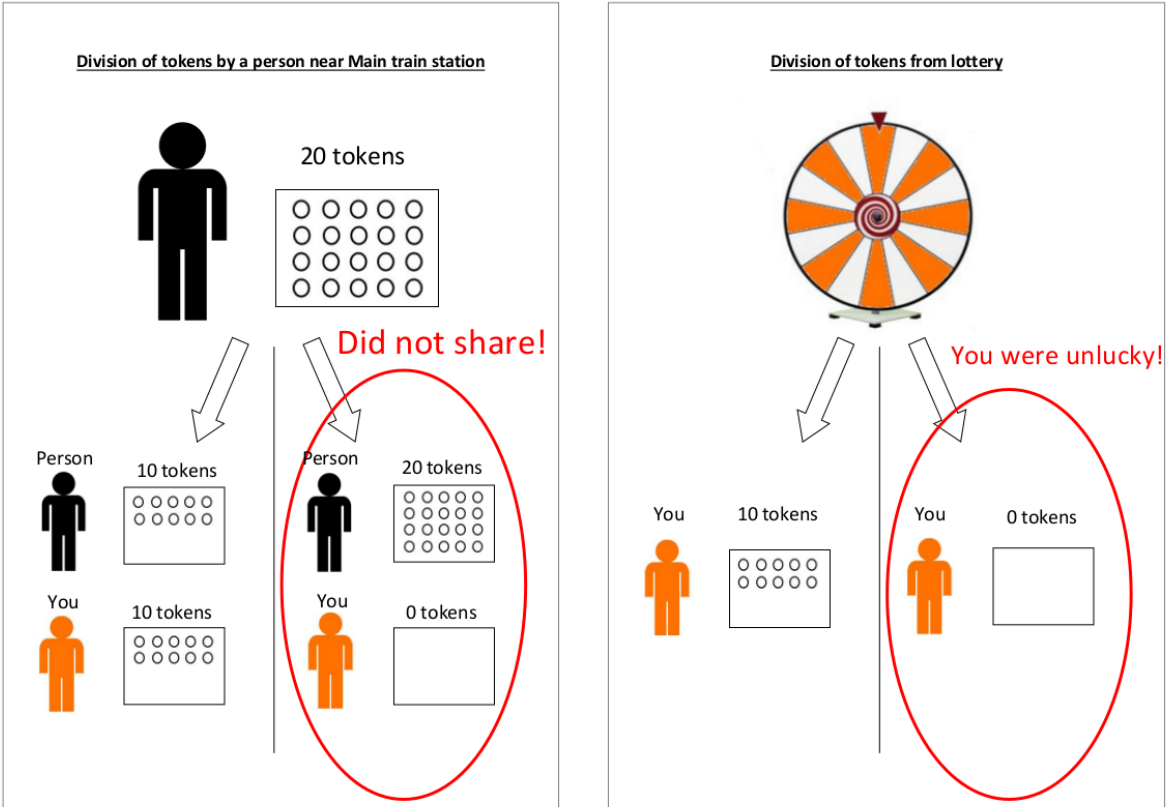
* p<0.1

Figure A1: Session disposition



B Instructions

Figure A2: High/low endowment posters placed in cubicles

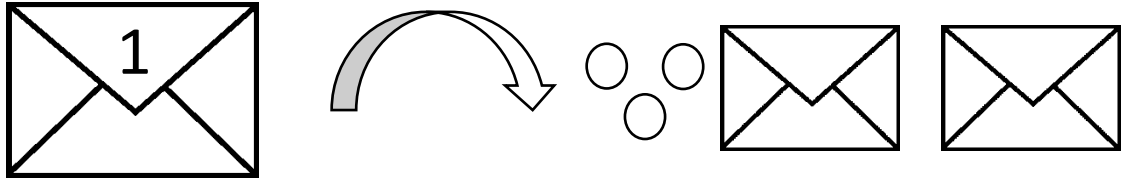


General rules

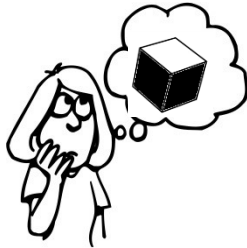
- 1) During activities you will get tokens
- 2) Tokens will be exchanged for rewards after finishing all activities
- 3) Number of tokens will depend primarily on your decisions
- 4) Your answers and decisions are anonymous
- 5) You are not allowed to talk during the activities
- 6) If you have any questions, raise your hand

Rules for activity 1 in 5 steps

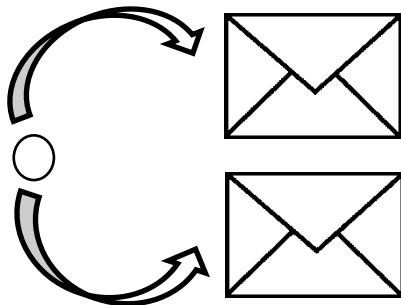
- 1) Take tokens, red and yellow envelopes out of the big white envelope with number 1.



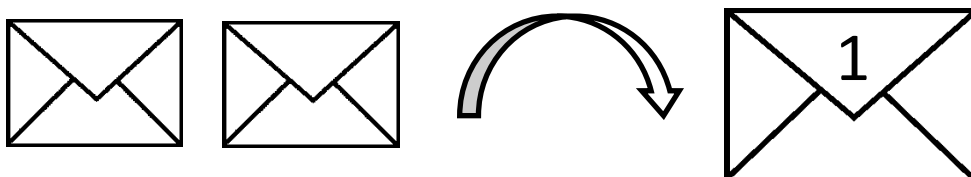
- 2) Before you roll the die, choose either white or black in your mind.



- 3) Roll the die. If the color turns out to be your chosen one, put one token into your yellow envelope. If not, put the token into the red envelope for a kid from a primary school.



- 4) Choose again either black or white. Roll and put another token into one of the envelopes. Repeat this procedure for all tokens (30 times).
- 5) Close both envelopes and put them back into the big white envelope with number 1.

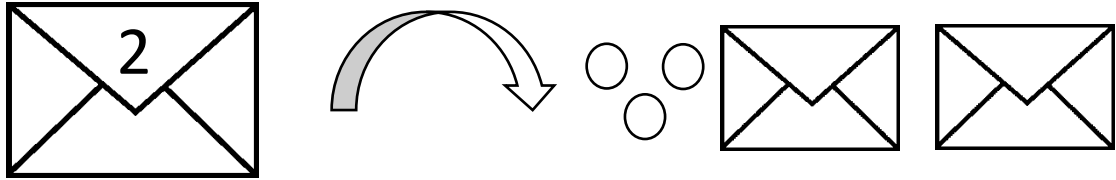


Message

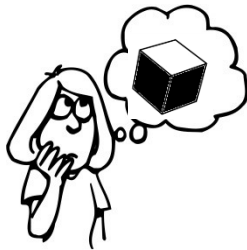
The message will say that tokens come from a young person from the Czech Republic. Then we will explain the rules of the game to them, as we explained them to you. Then, they will try the game, so that they can imagine how you play it. It means, they will see how many of the 30 tokens you have sent them and it will be clear why they received the given number of tokens.

Rules for activity 2 in 5 steps

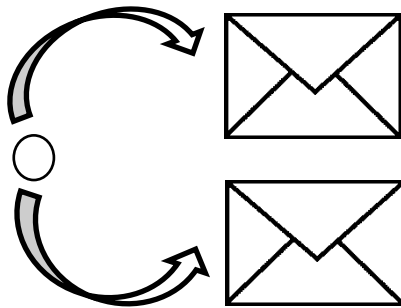
- 1) Take tokens, blue and yellow envelopes out of the big white envelope with number 2.



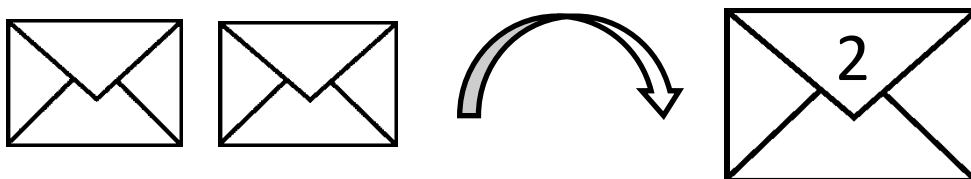
- 2) Before you roll the die, choose white or black in your mind.



- 3) Roll the die. If the color turns out to be your chosen one, put one token into your yellow envelope. If not, put the token into the blue envelope for a kid from a juvenile detention center.



- 4) Choose again either black or white. Roll and put a token into one of the envelopes. Repeat this procedure for all tokens (30 times).
- 5) Close both envelopes and place them back into the big white envelope with number 2.



Activity 3

Now, you have a chance to change the content of the message which will be delivered together with the tokens to a primary school and a juvenile detention center kid.

Original:

The message will say that tokens come from a young person from the Czech Republic. Then we will explain the rules of the game to them, as we explained them to you. Then, they will try the game, so that they can imagine how you play it. It means, they will see how many of the 30 tokens you have sent to them and it will be clear, why they received the given number of tokens.

Changed:

The message will say that tokens come from a young person from the Czech Republic. But they will not know how and how many tokens you distributed.

1. I want to send the primary school kid:

Original message

Changed message

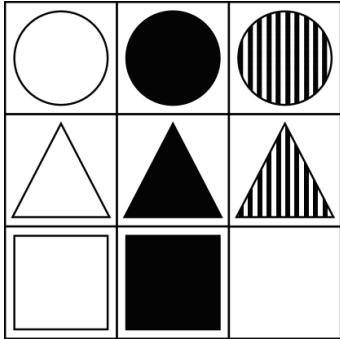
2. I want to send the juvenile detention center kid:

Original message

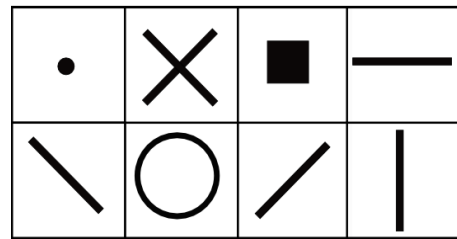
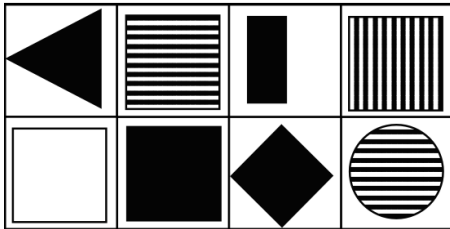
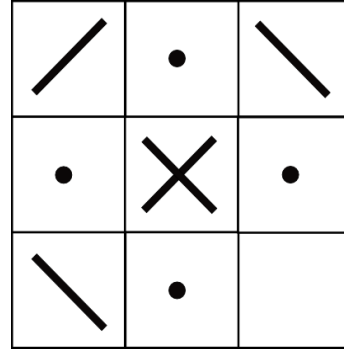
Changed message

Activity 4

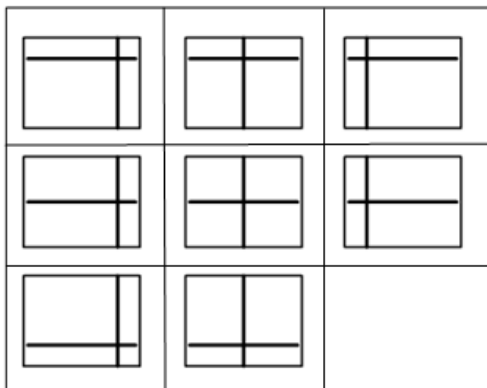
1.



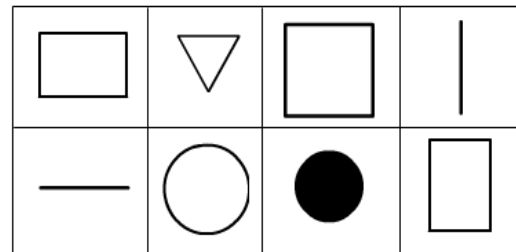
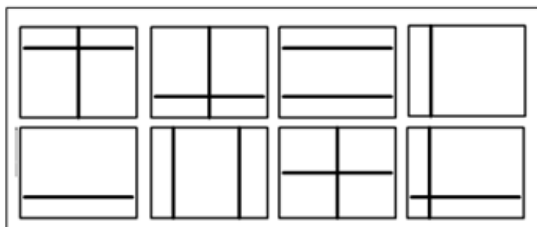
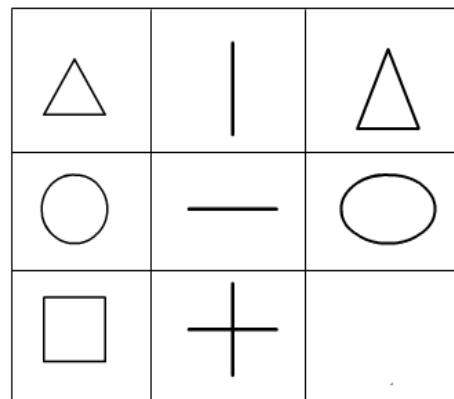
2.



3.



4.



Questionnaire

1. When were you born? _____

2. You are a a) girl b) boy

3. What grade are you in? _____

4. How many siblings do you have? (including step siblings) _____

Father

5. Job: _____

6. Father's highest education:

a) university b) secondary c) primary

Mother

7. Job: _____

8. Mother's highest education:

a) university b) secondary c) primary

9. Your parents live: a) together b) separated c) do not know

10. In which city had you lived before JDC? _____

11. Have you lived in an orphanage or a foster home? YES NO

12. What do you want to be when you grow up: _____

13. How many tokens did you get before rolling a die? _____

14. Does rolling of a die depend on luck? (circle one number)

a little 1 _____ 2 _____ 3 _____ 4 _____ 5 a lot

Instructions – experimenter

The instructions were memorized by experimenters and presented orally to participants.

The following instructions represent one of the possible combinations of treatments.

Introduction

Hello, my name is (*experimenter*) and this is my colleague (*assistant*),

Today, you will do a few activities for which you will receive tokens. Then, you will exchange them for rewards. At the beginning, you receive 5 tokens for participation and you will be able to get more tokens in the following activities. Here you can see the rewards in boxes. Rewards are of different values - 1,3,5,10 and 15 tokens. For example 5 tokens are for these rewards.

We start with sitting you at desks. You probably noticed that each desk is separated by a cubicle. This is so you can work on your own, undistracted. In the cubicle, there are a few papers. So far, do not touch anything, we will explain everything after all of you are seated. Now, come here and draw a number from this bag. Your seat (cubicle) is labeled with a number.

As we have already mentioned, you will receive tokens in activities. The number of tokens will depend primarily on your decisions. More tokens mean more and better rewards at the end. You can freely leave anytime during the session in case you decide you do not want to participate anymore. But then you would receive only 5 tokens from the beginning.

All your answers are anonymous. It means that you will neither sign the papers, nor write your name on them. Therefore, nobody, including us, will be able to find out your decisions. We will know only the number you drew with which you will receive tokens.

We will explain everything in detail, however, raise your hand immediately when something is not clear. During the whole session, you should not talk with anybody else, except us. Please, turn off your mobile phones. Please, follow all the rules. In case you do not respect them, in the worst case scenario, we could stop the whole session and you would not get any rewards.

Any questions?

1. part (Endowment manipulation)

Before we start with the activities, we have some information for you. Before we came here, we gave a task to random people near the Prague main station. It is a place where people from all over the Czech Republic come to catch trains. The task looked like this: We gave each of them 20 tokens and told them that they could share some of their tokens with an adolescent from the Czech Republic. They knew only that the recipient is an adolescent but nothing else.

Sharing the tokens means that they kept 10 tokens and shared 10 tokens. In case they decided not to share, they kept all the tokens for themselves. Similar to you, they exchanged the tokens for rewards. You can find the decision the adult made in front of you on a poster which is now covered with a blank page. Now, you can remove the paper and see the decision.

You will get these tokens at the end of the session together with tokens from other activities.

Have you all looked at the poster? Excellent.

2. part (Random allocation game)

Now, we begin the first activity. Just to remind you, after this activity, there could be other activities. At the end, we will randomly choose **only one** activity from which you will get tokens. Of course, you cannot know in advance which activity will be chosen, so you should decide carefully in each activity.

In the first activity, you will use this die (*showing*). It has three white and three black sides. By rolling it, you will divide tokens between yourself and an adolescent from another juvenile detention center. The other adolescent will only know that the tokens are from an adolescent from the Czech Republic, nothing else. They will also exchange the tokens for rewards.

OK, you have the tokens in the big white envelope with the number one. Please take the tokens and two smaller envelopes out. We will give you a die later on.

Now, I am going to explain the rules, so please, listen carefully. The rules are also depicted on page two of the instructions. You can now turn to page 2.

You will divide 30 tokens between yourself and an adolescent from another juvenile detention center. The yellow envelope is for your tokens and the red envelope is for the tokens of the other adolescent. Each token will be assigned based on the roll of a die. Before you roll, you choose in your mind one color, either white or black. Then you roll the die. If the color you rolled matches the color you chose in your mind, then the token belongs to you and you put the token into your yellow envelope. If the color does not match the color you chose in your mind, then you put the token into the red envelope. You repeat this procedure with all 30 tokens.

Is that clear? Now, I demonstrate. Ok, I chose white in my mind. Now, I roll and the color on the die was *white*. It is the same one I chose in my mind so I should put the token into the yellow envelope. Now, I can choose another color for the next roll. So, I choose black. I roll and it turned was white again. It is not the one I chose in my mind, so I should put the token in the red envelope.

Any questions?

As soon as you divide all tokens between the two envelopes, you close both the yellow and the red envelope and put them back into the big white envelope with the number 1. Then, please wait until everybody finishes. We will collect the envelopes from you and then we will continue. You will get your envelopes together with tokens from other activities after we finish with all activities.

Control questions

Let's have a look if you understood the rules correctly. On your desk, there is a paper called *Control questions* with 5 questions. Please try to answer all of them. As soon as you all finish, we will go through the answers together. This is not a test, we are doing this so that you can be sure you understood the rules of the activity.

Please start.

Control question sheet with correct answers

1) I rolled black and before the roll I chose white in my mind. I should put the token into the:

a) Yellow envelope (mine)

b) Red envelope

2) I rolled black and before the roll I chose black in my mind. I should put the token into the:

- a) **Yellow envelope (mine)** b) Red envelope

3) Can I choose a different color for each roll of the die?

- a) **Yes** b) No

4) If there are still tokens remaining on my desk, it means:

- a) **I continue rolling the die** b) I wait for the others

5) After I put all the tokens into envelopes, will anybody else (except the recipient) be able to find out, how I have distributed the tokens?

- a) Yes **b) No**

Before we start the activity, we have some more information for you. We will deliver the tokens together with a message. The message will say:

(One of the treatments, here is the complete info treatment)

The message will say that tokens come from a young person from the Czech Republic. Then we will explain the rules of the game to them, as we explained them to you. Then, they will try the game, so that they could imagine how you play it. It means they will see how many of the 30 tokens you have sent them and it will be clear why they received the given number of tokens.

Is that clear?

Now, we can sum up everything. All your answers are anonymous. At the beginning, a person from the main stations either shared tokens with you or kept everything. You can see the outcome on a poster in front of you. Now, you are going to divide tokens which will be delivered with the message I read you a minute ago.

Now, we will collect the control questions and distribute dice. You can try to roll a die couple times and to think again what are the rules. We will start in a minute.

Ok, have you tried it? Is everything clear? You can start.

(As soon as they have finished distributing tokens)

OK, now we will collect envelopes and we will distribute the second envelope.

Second round

The second activity is very similar to the first one. You received the big white envelope with the number two. Again, please take out two smaller envelopes and tokens. The first envelope is again yellow and is for your tokens. The second envelope is blue and is for the tokens of an adolescent from a regular primary school. You know only that the adolescent is from a primary school from the Czech Republic of similar age but you know nothing else. You will distribute 30 tokens with the same procedure. Same as the last time, you can find the rules in the instructions, just turn the page. After you finish distributing the tokens, please put both smaller envelopes into the bigger white envelope with the number 2.

Just to remind you, the tokens will be distributed together with this message:

The message will say that the tokens come from a young person from the Czech Republic. Then we will explain the rules of the game to them, as we explained them to you. Then, they will try the game, so that they could imagine how you play it. It means, they will see how many of the 30 tokens you have sent them and it will be clear why they received the given number of tokens.

Any questions? If not, you can start.

(As soon as they have finished distributing tokens)

OK, now we will collect envelopes and distribute a paper with another activity.

3. Switching

In this activity, you will have the possibility to change the message which will be delivered together with the tokens to an adolescent from another juvenile detention center and to an adolescent from a primary school. The original message is:

The message will say that tokens come from a young person from the Czech Republic. Then we will explain the rules of the game to them, as we explained them to you. Then, they will try the game, so that they could imagine how you play it. It means, they will see how many of the 30 tokens you have sent them and it will be clear why they received the given number of tokens.

Now, you will have the opportunity to change it to the following message:

The message will say that the tokens come from a young person from the Czech Republic. But they will not know how and how many tokens you gave them.

You choose which message to send separately for an adolescent from a juvenile detention center and for an adolescent from a primary school. If you decide for the original message, please circle "original message". If you decide to change the message, please circle "changed message".

Any questions? Ok, you can start.

Are you ready? We will collect it and give you another paper with the next activity.

4. Raven matrices

Before you start this activity, we will explain it to you with an example on this poster. There you can see a square with nine cells. In each cell, you can see a shape and the last cell is empty. Your task is to choose a shape from those eight below based on a rule which you have to figure out. What shape would it be in this case?

On the paper in front of you, you have four such tasks. For each correctly solved task you will receive an additional token. Any questions? You can start.

Are you ready?

Collecting answer sheets

5. Questionnaire

The last part is a short questionnaire. You will fill in some information about you such as your age, what grade you are in or how many siblings you have.

Now, we will look together at certain questions, especially those about your parents. If you are not sure, what type of education or job they do, you can ask us, we will help you. If you do not know one of your parents, circle "I don't know". In the question about number of siblings, step-siblings count as well. If you have any questions, please raise your hand.

Are you ready? Great, we will collect the questionnaires

Distribution of rewards.

Thanks a lot for all your effort. Now, one of you will draw one of the rounds from which you will get the tokens. We will roll a die - white is round 1 and black is round 2. Please, you in the first row, roll the die.

Rolling

Great, that's it. Now, listen carefully how we will proceed to the distribution of rewards. After I explain the procedure, you will all leave the classroom and you will make a line behind the door based on the number of your cubicle. So, number one will be first, two second and so on. Then, you will enter the classroom one by one. Right behind the door you will receive envelopes and the rest of your tokens. Then you will proceed to the desk over there and you will count all your tokens. Then, when you are ready, call my assistant who will come over and will recount the tokens. After that, you will choose with him/her the rewards. Is that clear?

Ok, now please make a line behind the door.

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