Evolution of Inmates' Perceptions and Preferences Over Time: Evidence from Czech Prisons

Pre-analysis plan

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Abstract

The goal of this project is to document inmates' knowledge, perceptions, and preferences - how they differ from the majority population and how they evolve over time - and to test selected theories explaining the causes of criminal behaviour in a unified framework. The analysis will be based on survey, experimental, and administrative data on inmates in Czech prisons. Data collection will include two waves with around 500 inmates and 220 students per wave, and one wave of 1000 subjects representing the general population. Surveying prisoners twice is key to measure how knowledge, perceptions, and preferences evolve over the prison time.

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1 Introduction

Many different theories aim to explain the causes of criminal behavior. The most recent theories link criminal behavior to: (i) the counter culture motivation of criminals (i.e., following norms and values distinct from the majority society) (Cohn et al., 2015); (ii) homo economicus theory, which postulates that criminals rationally respond to incentives (see Becker (1968) for the theory or, for example, Drago et al. (2009) on the effect of sanction or Draca et al. (2011) on the effect of the police); (iii) a refinement of homo economicus theory suggesting that criminals tend to be more risk seeking; and (iv) procedural justice theory, according to which criminal behavior is motivated by distrust in public institutions (see (Tyler, 2003) for a presentation of the theory and Mazerolle et al. (2013) or MacQueen and Bradford (2015) for some empirical tests).

In light of the above, the main research questions of this project are:

- Do inmates' knowledge, preferences, and perceptions of the criminal justice system differ from the non-criminal population?
- Do these dimensions evolve over the prison time?
- Which of the theories of criminal behavior has the largest predictive power on future misbehavior in prison?
- Do inmates' knowledge, preferences, and perceptions depend on how the criminal justice system has treated them?
- Do inmates' knowledge, preferences, and perceptions of the criminal justice system correlate with criminal behavior, distance to expected sanction, age, ...?

2 Data Collection

Subjects We plan to collect data from three different subject pools: (i) **500 inmates** in Czech prisons; (ii) **220 students** in a laboratory environment; and (iii) **1000 non-student** respondents from the general population, of whom 500 will match our sample of inmates on observable characteristics (gender, age, education) and the remaining 500 respondents will be a representative sample of the general population. Having a control group that oversamples the population that resembles the inmate population allows us a more precise decomposition of differences between inmates and the general population. To be able to measure evolution over time, survey and economic games with inmates and students in a laboratory environment will be conducted in two waves. The second wave of

data collection will occur approximately a year after the first one[1]. Many of the questions in the survey and decisions in the economic games played by inmates and students will be incentivized.

To provide more robust evidence, we will conduct a survey with a group of 500 non-student inmate-matching respondents and 500 non-student representative sample respondents. The non-student respondents will be approached through an external survey company and it will be possible to play the economic games and incentivize correct answers in the questionnaire.

The survey with inmates will be filled in during in-person meetings in groups. We will explain the experiment to the inmates, pass the consent form and explain each question and game of the survey. To recruit inmates, we will cooperate with the prison administration and especially psychologists who promised to help us with recruitment. This approach proved successful in previous experiments conducted by a member of our research team. The survey and experiments with 220 students will be conducted in the Laboratory of Experimental Economics (LEE) in Prague.

Attrition Two observations per respondent are key for testing our main hypotheses regarding the evolution of inmates' perceptions and preferences over time. Therefore, it is important for us to minimize the attrition as much as possible. To do so, we introduce three measures. First, as for the surveys with inmates, we target inmates that are likely to remain in prison for the next 12 months. Second, to minimize the negative effect of the possible movement of inmates between prisons, we aim to cooperate with the head of prison psychologists to keep track of the movement of inmates from the first wave. Third, part of the consent form contains information indicating that respondents are expected to participate next year too. Nevertheless, it is impossible to prevent any attrition. Respondents with a single observation are still informative about cross-sectional differences between the population of inmates and non-prison population and will thus be used in testing some of the hypotheses.

3 Collected Variables

Collected outcomes can be classified into four different groups: (i) respondents' decisions and beliefs in economic games; (ii) respondents' answers in crime-theory related survey questions; (iii) general survey questions; and (iv) administrative data. Not all variables will be collected from all respondents. Table 1 and Table 2 summarize which variables will be collected and for which group of respondents.

[1]Exact time between the two waves depends on circumstances in particular prisons.

The selected administrative data will be collected only for the sample of inmates. Thanks to cooperation with the prison psychologists we will be able to link the inmates' experimental and survey data to selected variables of administrative data. The Czech prison system maintains a database of hundreds of variables at the inmate level (SARPO, in detail presented in Jiricka et al. (2014)).

4 Research Questions

The four main directions of our research questions are the following. First, in which dimensions of behaviour do inmates and the general population differ the most? Second, do these evolve over prison time? Third, does the position of inmates depend on how the criminal justice system treats them? Four, can we predict misbehaviour of inmates in prisons? If so, which of the theories of criminal behavior has the largest predictive power?

The first group of hypotheses relates to a comparison of preferences and perceptions of the inmate and non-inmate populations. Theories that explain criminal behavior postulate that inmates and the general population differ in some aspects of their behaviour (e.g. trust in institutions, perception of sanction and probability). The main hypotheses are as follows:

Hypothesis 1 (Procedural justice)**.** The average perception of state legitimacy among inmates is weaker than among the non-inmate population. We expect the measures of procedural justice to be positively correlated with the *distance between imposed and predicted sanction.*

To detect this effect, we rely on differences in trust in institutions between the inmate and non-inmate participants. In particular, questions regarding institutional trust aim to determine: (i) how trustworthy the information from different institutions is; (ii) and whether the participants would agree that the institutions treat everyone equally. Additionally, supporting evidence in line with this hypothesis can be provided by questions regarding future behavioral and future political integration. Additionally, two waves of data collection allow us to test for differences in the evolution of the perception of the procedural justice between inmates and the control groups over the (prison) time.

Hypothesis 2 (Counter culture)**.** Inmates tend to build their criminal identity and rely on their own brotherhood. We expect the measures of counter culture to be positively correlated with the *distance between imposed and predicted sanction.*

This should be visible from the economic games (triple dictator game, trust game). Inmates are expected to be relatively more generous and trusting towards other inmates as

Table 1: Collected Variables I

	Inmates		Students		Non-students	
	First w.	Second w.	First w.	Second w.	Inmates-match.	Represent. sam.
Economic Games						
Trust game w/ non-prisoner						
Action P1	✓	✓	✓	✓	✓	✓
Beliefs	✓	✓	✓	✓	✓	✓
Triple Dictator Game w/ non-prisoner						
Action P1	✓	✓	✓	✓	✓	✓
Trust Game w/ prisoner						
Action P1	✓	✓	✓	✓	✓	✓
Beliefs	✓	✓	✓	✓	✓	✓
Triple Dictator Game w/ prisoner						
Action P1	✓	✓	✓	✓	✓	✓
Questionnaire 1						
Declared Trust						
A non-prisoner	✓	✓	✓	✓	✓	✓
A prisoner	✓	✓	✓	✓	✓	✓
A person you met in prison	✓	✓	✗	✗	✗	✗
Long-run trust	✓	✓	✓	✓	✓	✓
Risk Perception						
Arrest	✓	✓	✓	✓	✓	✓
Sanction	✓	✓	✓	✓	✓	✓
Risk Preferences						
Lottery	✓	✓	✓	✓	✓	✓
Self-reported	✓	✓	✓	✓	✓	✓
Trust in institutions						
Education	✓	✓	✓	✓	✓	✓
Healthcare	✓	✓	✓	✓	✓	✓
Police	✓	✓	✓	✓	✓	✓
Judicial system	✓	✓	✓	✓	✓	✓
Positive & Negative Reciprocity						
Punishment	✓	✓	✓	✓	✗	✗
A favor	✓	✓	✓	✓	✗	✗
Time preferences						
To postpone	✓	✓	✓	✓	✓	✓
Future behavioral						
Stable job	✓	✓	graduation[a]	graduation	✗	✗
Rent apartment	✓	✓	graduation	graduation	✗	✗
Future integration						
Voting	✓	✓	in 5 years	in 5 years	in 5 years	in 5 years
Anti-government protest	✓	✓	in 5 years	in 5 years	in 5 years	in 5 years
Sanctions						
Expected sanction	✓	✓	✗	✗	✗	✗
Sanction in Prison	✗	✓	✗	✗	✗	✗

[a]We use graduation instead of release when asking about future of students.

Table 2: Collected Variables II

	Inmates		Students		Non-students	
	First w.	Second w.	First w.	Second w.	Inmates-match.	Represent. sam.
			Questionnaire 2			
Age	✓	✓	✓	✗	✓	✓
Department of prison	✓	✓	✗	✗	✗	✗
Length of the sentence	✓	✓	✗	✗	✗	✗
Number of prev. prison-time	✓	✓	✗	✗	✗	✗
Marital status	✓	✓	✓	✓	✓	✓
Education	✓	✓	✓	✗	✓	✓
Addiction(s)	✓	✓	✓	✓	✓	✓
Personal finance	✓	✓	✓	✓	✓	✓
Fairness of your trial	✓	✓	✗	✗	✗	✗
Juvenile detention	✓	✓	✗	✗	✓	✓
Stamps tobacco ex.	✓	✓	✗	✗	✗	✗
Working in prison	✓	✓	✗	✗	✗	✗
Job bf. inc.	✓	✓	✗	✗	✗	✗
Court	✓	✓	✗	✗	✗	✗
			Administrative data			
Subjective assessment	✓	✓	✗	✗	✗	✗
Criminal background						
Most severe cur. offense	✓	✓	✗	✗	✗	✗
Total number of cur. offense	✓	✓	✗	✗	✗	✗
Overview - criminal history	✓	✓	✗	✗	✗	✗
Criminal counterculture						
Criminal subculture	✓	✓	✗	✗	✗	✗
Membership in a "gang."	✓	✓	✗	✗	✗	✗
Contacts with criminals in family	✓	✓	✗	✗	✗	✗
Procedural justice						
Acceptance of illegal behavior	✓	✓	✗	✗	✗	✗
Interest in a real job	✓	✓	✗	✗	✗	✗
Disrespect to authorities	✓	✓	✗	✗	✗	✗

opposed to non-inmates than to non-inmates respondents are. Additionally, two waves of data collection allow us to test for differences in the evolution of criminal identity between inmates and the control groups over the (prison) time.

Hypothesis 3 (Risk Preferences)**.** We expect that inmates are less risk averse than the comparable non-prison population. We further expect no correlation between the risk preferences and the *distance between imposed and predicted sanction*. Based on existing literature, we do not have a strong prior expectation regarding the evolution of risk preferences over the prison time.

We plan to elicit the risk aversion of participants using a self-reported measure (taken from the Global Preferences Survey database) and a standard lottery game (Gneezy and Potters, 1997), in which inmates, students, and the general population are supposed to decide how many stamps (experimental units for non-inmates) they are willing to invest in a risky lottery under a given return. The idea that criminals are less risk-averse than the general population is well-established in the economic literature. The literature is, however, less unanimous as to what may happen to risk preferences over the prison time. We believe that, at least for some inmates, the prison time can be a period of increased violence, uncertainty, and stress. While there is a rich and growing literature studying the evolution of risk preferences after exogenous shocks (an increase in uncertainty, violence, conflicts etc.), the evidence on the effect is inconclusive. For more details see for example Chuang and Schechter (2015); Schildberg-Hörisch (2018).

Hypothesis 4 (Homo economicus)**.** Inmates are more knowledgeable about sanction and/or probability of being caught than non-prison respondents. This is particularly true in their "area of expertise". Inmates' knowledge regarding potential sanctions increases over time spent in prison, and will update their belief regarding the probability of being caught towards "more likely". We further expect no correlation between the measure of homo economicus and the *distance between imposed and predicted sanction*.

To measure respondents' knowledge regarding the probability of being caught and potential sanctions (parameters of Becker's model), we ask several questions, most of which are incentivized. To incentivize the questions, we rely on information that is available to us – researchers – but the respondents are extremely unlikely to be aware of such dataset. We expect inmates' knowledge and beliefs to be more precise than beliefs in the control groups and in particular in inmates' area of expertise (e.g. someone who is incarcerated for a violent crime knows more about the parameters of violent crimes). As for the evolution over time, we suspect that inmates will update their beliefs as they learn about the parameters from their peers. Specifically, as for the potential

sanction, we expect their beliefs in the second round to become more precise than the beliefs of the control group.[2] However, as for the probability of being caught, it is possible that since they learn only from those that were caught and incarcerated, and thus acquire information only from biased sources, they may update towards an excessively high probability of being caught. This, however, depends on the criminal history of peers (too many re-offenders would undermine the effect).

Heterogeneity We expect differences between criminals and non-criminals to be correlated with their state observable characteristics. We expect the dimensions related to Homo economicus theory to be more different among old individuals and offenders convicted for property crimes than for the rest of the population. Conversely, risk preferences are likely to be more different for young individuals and offenders convicted for violent crimes. The rest of the analysis will be exploratory.

5 Empirical Strategy

For any of the hypotheses, we aim to test for: (i) differences in means of the group of inmates and control groups of students and general population; (ii) difference in evolution over the (prison) time between inmates and non-inmates control group; (iii) correlation between the particular measure concerned in the hypothesis and the measure of the *distance between imposed and predicted sanction*. To test the difference in evolution over the (prison) time, we aim to rely on first differences and difference-in-differences.

To test the correlation between the particular measure concerned in the hypothesis and the measure of the *distance between imposed and predicted sanction*, we aim to use two different measures. First, using data about sentencing decisions in criminal cases in the Czech Republic, we will calculate the predicted sanction given the characteristics of the criminal history of offenders and the particular crime. Second, we aim to elicit inmates' expectations about potential sanctions.

[2] We disregard the fact that an inmate is more likely to interact with peers who serve a longer sentence and thus are likely to overestimate the average sentences (bias caused by censoring). However, this is likely a small effect compared to the benefits of acquiring more information.

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