Trust the Police? Self-Selection of Motivated Agents into the German Police Force

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April 2017

Abstract

We conduct experimental games with police applicants in Germany to investigate whether intrinsically motivated agents self-select into public service. Our focus is on trustworthiness and the willingness to enforce norms as key dimensions of intrinsic motivation in the police context. We find that police applicants are more trustworthy than non-applicants, i.e., they return higher shares as second-movers in a trust game. Furthermore, they invest more in rewards and punishment when they can enforce cooperation as a third party. Our results provide clear evidence for advantageous self-selection into the German police force, documenting an important mechanism that influences the match between jobs and agents in public service.

JEL classification: C9, D64, D73, J45

Keywords: Self-selection, intrinsic motivation, public service, trustworthiness, norm enforcement

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1 Introduction

When governments engage in the provision of public goods and services, they require agents to implement these policies. Many of these agents, tax inspectors, social workers, and police agents alike, are endowed with substantial authority over citizens. All too often, unfortunately, it cannot be assumed that public servants' incentives are fully aligned with the interests of the government or the public. The media remind us frequently about the abuse of delegated authority, be it in the context of police violence, red tape, or corruption.

Max Weber (1922) was aware of these threats to the legitimacy of what he called "Herrschaft", i.e., institutionalized authority, pointing to two requirements for legitimate public bureaucracy: intensive control mechanisms should be in place, and public servants should have a high degree of loyalty. Ex-post control mechanisms, however, are often expensive and involve the typical bureaucratic inefficiencies, famously described and analyzed by Crozier (1964), Wilson (1989), and Holmström and Milgrom (1991), amongst others. A natural complement are, therefore, *mechanisms that improve the ex-ante match* between jobs and public servants, i.e., bureaucracies and bureaucrats.[1]

In this paper, we study one such ex-ante mechanism focusing on a particular and important public bureaucracy, the police. Our main interest is in *self-selection*, by which citizens with a specific set of characteristics, including intrinsic motivation, are more likely to apply for the job in question. Our data comes from Germany, and we exploit a unique combination of incentivized behavioral experiments, survey data, and access to an exclusive pool of police applicants right at the time of submission of their application together with a natural group of comparison. The results provide clear evidence for the self-selection of intrinsically motivated agents into the German police force. The selection is advantageous, as the revealed motivation of police applicants is well in line with what is desired from a public interest perspective.

Exploring self-selection into public service in the police context is important and informa-

[1]More than 2000 years ago, in imperial China, candidates for the public service had to go through excruciating examinations that tested both applicants' skills and their willingness to provide high levels of effort (Miyazaki, 1979). By examining applicants' knowledge of Confucianism, the government sought to attract public servants who held high the values of imperial China, a crucial requirement given that public servants had authority over most of public life and the economy.

tive for economic research for two reasons. First, police misconduct and abuse of authority represents a critical problem in many countries in the world, being particularly high on the agenda, for example, in the U.S. and in Latin America. The police context, thus, provides a both relevant and interesting case for the main research question at hand. Secondly, it is relatively straightforward what to expect from a good police agent: he or she should be trustworthy and motivated to enforce the law and norms of cooperation (Goldstein 1977, Thielmann and Weibler 2014). Both qualities are important not only to protect citizens against law violations and to safeguard citizens' cooperation with each other, but also to ensure and uphold citizens' willingness to trust and cooperate with the police, a condition that is key for effective crime detection and prevention.

Identifying self-selection is not easy however. Studies based on employees (even beginners) suffer from the problem that participants have already passed the organization's screening process, have taken part in training programs, and have interacted with others in the same occupation, thereby making it difficult to disentangle self-selection from explicit sorting carried out by the organization, training effects, or social influence and peer effects. Often it is also unclear to whom employees from a given occupation should be compared, i.e., what is the relevant comparison group. In this respect, student samples seem advantageous. However, in many cases the evidence is limited to hypothetical job applications or job aspirations expressed in a survey.

We solve these problems by collaborating with two state police agencies in Germany (Hesse and Rhineland-Palatinate) to contact all applicants who submitted their application to the respective police academies in a given recruitment period. These applicants have clearly documented their interest in becoming a police officer but have not yet passed any interview, been tested by the recruitment unit or been subject to any training. We additionally exploit the institutional feature that high school graduation forms a necessary requirement for becoming a police officer in these states, and create a natural comparison group composed of high school graduates from the same region and age cohort who have not applied for the police. Finally, we employ incentivized experimental games to obtain reliable measures of our key variables of interest, trustworthiness and norm enforcement, in combination with a large survey on socio-economic and psychological covariates. The games

we use are a trust game (Berg et al. 1995) and a reward-and-punishment game (Fehr and Fischbacher 2004). In the latter game, subjects play in the role of a third party who can reward or punish two other players who interact in a trust game.

Our results, which are based on about 1,400 individual observations, show that applicants to the police force are significantly more trustworthy than participants from the comparison group: they return on average higher shares in the role of the second mover in the trust game. The result is robust to the inclusion of important covariates. Differences in first-mover transfers, on the other hand, which are a measure of trust, are insignificant once we control for other covariates, in particular risk aversion. With regard to norm enforcement, we find that police applicants spend significantly more resources on both rewarding and punishing others as a third party. The result is again robust to the inclusion of controls. When controlling for own trustworthiness, the police coefficient decreases in size, suggesting that differences in participants' own trustworthiness (which is higher among police applicants) plays an important role in explaining differences in norm enforcement. In sum, our results document a clear self-selection of pro-socially motivated individuals into the police force in Germany.

The paper complements and contributes to a variety of different strands in the literature. Several theoretical papers have analyzed the role of intrinsically "motivated agents" in organizations and public bureaucracies emphasizing the importance of finding the right match between public service occupations on the one hand, and motivated agents on the other (e.g., Francois 2000, Besley and Ghatak 2005, Delfgaauw and Dur 2008, Buurman and Dur 2012). Prendergast (2007) and Auriol and Brilon (2014) point to the problem that extreme types can also sort themselves into these organizations, providing an explanation for recurrent scandals involving, e.g., police violence or child abuse in aid organizations. Dharmapala et al. (2016) offer a discussion of related arguments from a law perspective. We contribute to this literature by providing robust empirical evidence for advantageous self-selection of intrinsically motivated agents in an important public service case. While we cannot rule out the existence of extreme types in our sample, results show that on average selection into the police is positive.

Empirical papers studying self-selection have highlighted the effects of different incen-

tive schemes both in the lab (Niederle and Vesterlund 2007, Eriksson et al. 2009, Dohmen and Falk 2011) and in the field (Dohmen and Falk 2010, Buser et al. 2014, Dal Bó et al. 2013, Ashraf et al. 2016). Carpenter and Myers (2010) and Hanna and Wang (2014) as well as Barfort et al. (2016) analyze the role of altruism and (dis-)honesty in selection into public service, using samples of U.S. volunteer firefighters and university students in India and Denmark, respectively. While these studies use experimental games like we do to measure motivation, the results are based on active volunteers or hypothetical job preferences only, thus making it difficult, for reasons explained above, to pin down actual self-selection. Banerjee et al. (2015) use a research design that is closer to ours comparing public and private sector aspirants in India.[2] However, their focus is on corruption in a framed lab experiment (cf. Alatas et al. 2009) rather than measures of trustworthiness or the willingness to enforce norms. Furthermore, participants are general aspirants for government administrative services, whereas our sample includes only candidates who explicitly apply for a job with the police. Serra et al. (2011) provide evidence for pro-social selection into the non-profit health sector in Ethiopia using both survey and behavioral measures. Next, our paper is related to Banerjee et al. (2012), who also study the police as an important case of public bureaucracy. Their analysis, however, does not consider self-selection, but rather the effects of different institutional reforms on police performance in Rajasthan, India. Dickinson et al. (2015) conduct an experimental lab study with trained police commissioners in France analyzing the use and efficacy of different norm enforcement institutions. Finally, with respect to the role of organizational factors in the performance of public bureaucracies, see also Rasul and Rogger (2016), who provide evidence on the importance of management practices based on data from public services delivery in Nigeria.

2 Police in Germany

According to a popular saying, in heaven, the mechanics are German, the chefs French, and the police British, while in hell, the mechanics are French, the chefs British, and the

[2]See also Banuri and Keefer (2016) for a related analysis with public sector aspirants in Indonesia using charitable donations as a proxy for prosocial motivation.

police German. In stark contrast, the police in modern Germany actually enjoys steadily high levels of trust from the German population, both inter-personal trust between citizens and police agents, and trust in the police as an institution.[3] More than 80 percent of the German population say they trust police agents (GfK 2016), a score that is 11 percentage points higher than in other European countries. According to a study by Forsa (2015), 84 percent rank the police as a trustworthy institution; the police takes the top rank, followed by universities, the own employer, courts and doctors. These data are in stark contrast with the U.S., for example, in which according to the Gallup (2015) poll only one out of two citizens trust the police. It seems that modern Germany has succeeded in devising mechanisms that mitigate the problems associated with the delegation of power to the police. It thus appears an ideal setting to study the role of self-selection, in particular of trustworthy agents, as a potential ex-ante mechanism for achieving these results.

According to the German Constitution, police affairs are in the domain of the states, and only a few police tasks are allocated to the federal level (e.g., border control, railway police and international crime and terrorism). The sixteen state police agencies are responsible for all types of policing, i.e., patrol duty, traffic safety, crime prevention, crime control, and public security in daily life. These state agencies range from 2,800 to 42,000 employees, all of them tenured public servants. Our data come from two neighboring state police forces that cover the Rhine-Main area: Hesse and Rhineland-Palatinate.

Police in Germany are supposed to serve the citizen, not the state. This is reflected in the leadership philosophy, which highlights the importance of values and norms as well as trust and trustworthiness, performance, development, and motivation (Thielmann and Weibler, 2014). Entry barriers into the police are high. The two state police agencies we collaborated with only employ high school graduates who, after a series of entry exams (measuring physical, psychological and cognitive fitness), enter into a three-year education that is organized by the state police academies, and graduate with a full-fledged bachelor degree. Throughout their education, police agents are taught important psychological, sociological and legal foundations of police work, in addition to traditional self-defense and

[3]This is also reflected in the popular saying "The police – your friend and aide", which almost every child in Germany grows up with.

weapons training. Furthermore, there exists a highly selective masters program in the German Police University that the best career officers can apply to after a number of years in the police force, and which gives access to the top echelons of the hierarchy. Police agents in Germany are tenured public servants that are expected to work until the age of 62 to 64 after which they receive a generous pension and continuing health benefits.

Given the role and tasks of police in a democratic society like Germany, it is relatively straightforward what to expect from a police agent. In particular, police agents should be trustworthy, because otherwise the trust of citizens can neither be expected nor sustained. Next, police agents should be motivated to engage in norm enforcement. This is important not only to protect citizens against crime and law violation but also to ensure cooperative and law-abiding behavior from citizens themselves. In the following we analyze to what extent these characteristics are influenced by self-selection.

3 Experimental Set-up

Our research strategy for identifying self-selection of trustworthy and norm-enforcing individuals into the police force exploits the fact that high school graduation forms a necessary requirement for becoming a police officer in Hesse and Rhineland-Palatinate. In parallel to the recruitment of applicants to the police, we therefore recruited high school students from the same region and same main graduation cohort as a natural group of comparison. In the following, we first describe the two experimental games that were played by both police applicants and high school students. We then provide detailed information about the procedures we used for recruiting the two groups of participants and for conducting the experiment.

The experiment consisted of two parts that were followed by a survey. In the first part, participants played a trust game as illustrated in Figure 1. In the second part, participants played a reward-and-punishment game. We explain each game successively.[4]

[4]See `https://sites.google.com/site/michaelkosfeld/Instructions_Police.pdf` for experimental instructions. Homann (2012) and Richter (2013) provide additional details about the set-up.

3.1 Trust Game

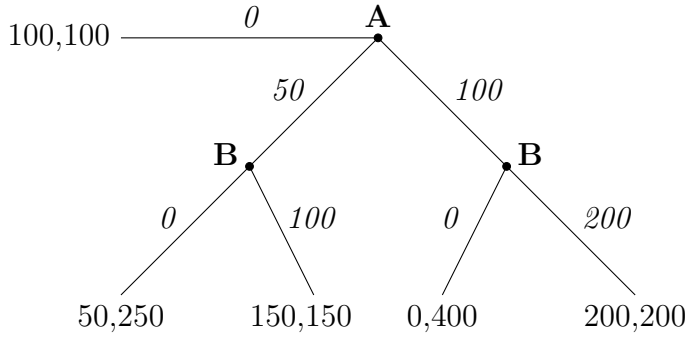

Figure 1: Trust game

In the trust game, there are two players (A and B), each endowed with 100 €. Player A decides first whether to transfer 0, 50, or 100 € to player B. The transfer is tripled, i.e., depending on player A's choice, player B receives either 0, 150, or 300 €. Player B then decides whether to keep the entire transfer or share the returns equally with player A. In the case where player A transfers 50, B can either return 0 (leading to a payoff of 50 € for player A and 250 € for player B) or 100 (leading to a payoff of 150 € for both). If player A transfers 100, B can either return 0 (leading to a payoff of 0 € for A and 400 € for B) or 200 (leading to 200 € for both). In the case where player A transfers 0, player B makes no choice and both players earn their initial endowment of 100 €. Because B has no monetary incentive to share the returns with A in this game (players interact only once and anonymously in the experiment), positive transfers from A are interpreted as a measure of the trust player A places in B; similarly, positive backtransfers from B are a measure of the trustworthiness B reveals towards A (cf. Berg et al. 1995, Cox 2004).

All participants played the trust game in both player roles with different anonymous partners.[5] Importantly, police applicants did not receive any information indicating that they would be matched with another police applicant, but rather that they would play against a random stranger. Therefore, behavior in the trust game is a measure of generalized trust and trustworthiness, which is exactly what we are interested in. We used the strategy method to elicit the choices of player B, i.e., participants in this role decided about their backtransfers *conditional* on player A transferring either 50 or 100 €. This allowed us to

[5]Payment rules are explained in Section 3.3.

elicit the behavior of B for every participant without having to wait for another participant to first make his decision as A. In addition, we obtain a comparable measure of trustworthiness for all participants, which would not have been the case if participants had decided for endogenous, i.e., different, transfer levels of A. All participants correctly answered a set of control questions before they made their decisions in the trust game.

3.2 Reward-and-Punishment Game

The reward-and-punishment game that was played in the second part of the experiment is based on the trust game. The new and distinct feature is that a third player (C) is added, who can reward or punish players A and B conditional on the two players' decisions. Both rewarding and punishing is costly to player C and yields no material benefit. Specifically, player C is endowed with 160 €; after player A and B have made their decisions, player C decides whether to allocate so-called reward or punishment points to any of the two players. Each point that is allocated to a particular player increases or decreases that particular player's payoff by 2 € and at the same time decreases player C's payoff by 1 €. The minimum to which a player's payoff can be decreased is zero, i.e., players A and B cannot make losses. Since we are interested in police applicants' willingness to enforce norms of cooperation, police applicants and high school students were always in the role of player C in this game. The decisions of players A and B were made by students from the FLEX subject pool (see below). We again used the strategy method to collect player C's reward and punishment decisions conditional on all five possible outcomes in the trust game. All participants also correctly answered a set of control questions before they made their decisions.

The reward-and-punishment game was always played after the trust game. This was for two reasons. First, instructions in the reward-and-punishment game are much easier to understand when participants have played the trust game before; thereby, the design reduces any noise that might otherwise be caused by confusion, which is particularly important as the experiment was conducted online (see procedures below). Second, we explicitly wanted participants to go through the strategic situation of the trust game, in order to allow them to make an informed decision as player C in the reward-and-punishment game. For this reason,

we also engaged participants in both player roles in the trust game in order to avoid biased decision-making by player C towards either of the two players. Importantly, participants did not learn any outcome of the trust game before they played the reward-and-punishment game.

3.3 Procedures

The experiment was conducted online between fall 2010 and fall 2011 via a secure online server at the Frankfurt Laboratory for Experimental Economic Research (FLEX) at Goethe University. Police applicants were contacted via police academies in Hesse and Rhineland-Palatinate after they had submitted their application to the respective academy. Together with the letter of acknowledgment from the academy that their application had been received, each applicant was sent an invitation from our research team to take part in a study on decision-making and attitudes of job applicants. The invitation was framed neutrally with no emphasis on the police as a particular employer. No information was given about the games to be played in the experiment. We carefully explained in the invitation that the study was an independent research project of Goethe University and that there was no connection whatsoever to the police academy besides the latter's support in sending out the invitation. Further, we emphasized that it was impossible for the research team to link any data from the experiment to any personnel records of the academy (which we did not have).[6] Finally, the web interface in which applicants made their decisions was also framed in a neutral manner and did not include any information or links to the police or to the application process.

Applicants were informed that at the end of the experiment, fifteen participants (ten in the trust game, five in the reward-and-punishment game) would be randomly selected for payment. These participants were randomly assigned to player roles and pairs and were paid out their individual earnings depending on the particular decisions in the game.[7] To

[6] Although it would have been tempting to follow applicants through the screening and training process, we explicitly decided against this possibility in order to make sure that participants are full-informed that their decisions are anonymous and cannot be matched with personal records. For a complementary study on trained police commissioners see Dickinson et al. (2015).

[7] The average payout was 150 €. In addition, three iPod Nanos were raffled among all participants.

participate in the experiment, each applicant received an individual code that had to be entered on the FLEX website and that could be used only once. Due to different timing in the recruitment of police academies, applicants participated in two waves: Applicants in Hesse participated from October 2010 to January 2011, applicants in Rhineland-Palatinate participated between July and October 2011. In total, 630 police applicants participated in our experiment. We excluded 171 participants because they either did not have or expect a high-school degree (so they did not meet our main comparison criterion) or they did not complete the experiment. This left us with a sample of 459 police applicants.

For the comparison group of high school students, we contacted 75 public high schools in Hesse. These schools were randomly selected out of the full sample of all 224 public high schools in Hesse using a geographic stratification procedure based on zip codes. 42 of the schools we contacted agreed to participate. In each of these schools, students received an invitation to take part in the study that was distributed via their main teacher. As for police applicants, students were informed about the general purpose of the study (but not about the games to be played) and the possibility to earn money in the experiment as well as to participate in a raffle of three iPod Nanos. Again, fifteen participants were randomly selected for payment. Each student received an individual code that had to be entered on the FLEX website and that could be used only once. 976 high school students participated in our experiment, of which 17 did not complete the experiment, leading to a final sample of 959 high school students.

Finally, students from the FLEX subject pool at Goethe University filled up the remaining player roles A and B in the reward-and-punishment game to determine payment of police applicants and high school students in this game.

4 Results

Table 1 displays descriptives of participants' behavior in the two experimental games. As can be seen, police applicants make about nine percent higher transfers as player A in the trust game (57.52 compared to 52.76 €, Mann-Whitney test: $p < 0.01$), and also return on average around eight percent higher backtransfers as player B compared to the group of high

school students (81.70 compared to 74.56 € in the case where A transfers 50, Mann-Whitney test: $p < 0.01$; 160.35 compared to 149.74 € in the case where A transfers 100, Mann-Whitney test: $p < 0.05$).[8] Thus, based on raw data, police applicants appear both more trusting and more trustworthy. A similar picture emerges in the reward-and-punishment game. On average, police applicants invest about twelve percent more resources as player C on rewarding and punishing players A and B compared to high school students (40.56 compared to 36.26 €, Mann-Whitney test: $p < 0.01$). This shows that police applicants are not only more cooperative in the trust game, they are also more willing to enforce norms of cooperation as a third party. In Appendix A we disaggregate player C's decisions in more detail and show that police applicants and high school students exhibit similar reward and punishment preferences, suggesting that differences in player C's investments are primarily a level effect. We therefore concentrate on participants' average investment in rewards and punishment in our analysis.

Table 1: Behavior in the Experimental Games

		High school students	Police applicants
Trust A	Mean	52.76	57.52
	SD	32.47	34.23
Trustworthiness B if A sends 50	Mean	74.56	81.70
	SD	43.58	38.71
... if A sends 100	Mean	149.74	160.35
	SD	86.80	79.82
Average reward and punishment C	Mean	36.26	40.56
	SD	25.06	26.57
	N	959	459

Note: Average reward and punishment C is the average of reward and punishment points (in €) allocated by player C to players A or B in the five possible outcomes in the trust game.

We next analyze to what extent these differences in behavior are driven by other observables in which police applicants and high school students differ. Note that it seems very likely that police applicants and high school students differ from each other in several dimensions. Besides our main criterion of comparison, school-leaving qualification, which we control, there is no reason to believe that both groups should be completely identical.

[8] All tests reported in the paper are two-tailed.

Most likely, selection into the police is multi-dimensional. Based on the survey which we conducted at the end of the experiment, we are able to identify relevant differences between the two groups (cf. Appendix A). The survey comprises key socio-economic variables such as age, gender, income, parents' education, migration background, risk preference, as well as important psychological personality measures (proactivity, sensation seeking). Table 4 in Appendix A confirms that police applicants differ quite a bit from the group of high school students along these dimensions. For example, police applicants are, on average, more likely to be male, they are both slightly older and taller, have higher income, are more risk tolerant, and they also score higher in both proactivity and sensation seeking. In the following, we use linear regressions to control for these variables when assessing the difference in behavior in the two experimental games.

Table 2: Trust and Trustworthiness

	Trust A	Trustworthiness B if A sends 50	Trustworthiness B if A sends 100
	(1)	(2)	(3)
Police applicant	0.061	0.068**	0.086***
	(0.043)	(0.027)	(0.028)
Risk preference	0.024**	-0.005	-0.008
	(0.012)	(0.007)	(0.007)
Constant	0.451	1.480***	1.306***
	(0.604)	(0.383)	(0.384)
Additional Controls	YES	YES	YES
N	1,331	1,331	1,331

Note: OLS with standard errors in parentheses. The dependent variables are the transfer sent as player A (trust A) and the backtransfers sent as player B (trustworthiness B) for the two possible cases. Additional controls include female dummy, age, log(income), type of city grown up in, migration dummy, education of father and mother, sensation seeking (NISS), proactivity, willingness to take part in lotteries, risk preference. *** p<0.01, ** p<0.05.

Tables 2 and 3 summarize our main results.[9] From the descriptive statistics in Table 1 it appears as if police applicants were more trusting. However, upon controlling for covariates, this difference turns out to be statistically insignificant (Table 2, column(1)). This suggests that the higher levels of trust observed in the raw data are not primarily related to being a police applicant per se but are driven by differences in covariates, in

[9]The number of observations in Tables 2 and 3 is smaller than in Table 1 because of non-responses to parts of the survey. Results are qualitatively similar if we use a nearest neighbor matching model instead (results available upon request).

particular the degree of risk tolerance which is higher in the group of police applicants and significant in our specification in column (1).[10] With regard to trustworthiness, however, the regressions reveal the difference to be significant (Table 2, columns (2) and (3)). Controlling for other covariates, police applicants as player B return on average seven to eleven percent higher backtransfers to player A, if A sends either 50 € (column (2)) or 100 € (column (3)). Risk preferences play no role in this decision, which makes sense as player B's backtransfer decision does not include any risk but is purely distributional. The result documents our first important dimension – trustworthiness – along which self-selection into the German police can be identified.

The next question is whether police applicants also invest significantly more resources on punishing and rewarding players as a third party, as we control for the set of covariates. Table 3 shows that this is indeed the case. Column (1) reveals a significant and positive association of being a police applicant with total investment as player C. On average, police applicants invest 18 percent more resources in the reward-and-punishment game compared to the group of high school students.

In columns (2) to (5) of Table 3 we include participants' own behavior in the trust game, either as player A (trust) or as player B (trustworthiness). The rationale is that these variables reflect individual differences in perceived norms of cooperation which are likely to serve as a role model for taking decisions in the reward-and-punishment game. Participants who trust more and/or are trustworthy themselves may be more inclined to reward cooperation as well as punish non-cooperation, relative to participants who act as pure money maximizers in the trust game.

As column (2) shows, adding own trust does not change the effect of the police dummy very much. The coefficient becomes smaller but remains significant at the five percent level. Adding own trustworthiness (column (3)) reduces the coefficient further, such that the effect is now significant at the ten percent level, while the effect of own trustworthiness is highly significant. In this specification we measure trustworthiness separately for the two cases where player A sends either 50 or 100. Results are the same if we combine the two cases. A similar result is obtained if we include trust and trustworthiness together (column

[10] See Table 5 and 6 in Appendix A for coefficients of the full set of covariates.

Table 3: Reward and Punishment

	Average investment C				
	(1)	(2)	(3)	(4)	(5)
Police applicant	4.215**	3.673**	2.876*	2.813*	3.173*
	(1.682)	(1.640)	(1.638)	(1.619)	(1.626)
Trust		8.851***		6.170***	
		(1.043)		(1.104)	
Trustworthiness50			6.975***	5.140**	
			(1.985)	(1.989)	
Trustworthiness100			10.027***	7.825***	
			(1.981)	(1.998)	
Money maximizing					−13.694***
					(2.690)
Cooperative					9.387***
					(1.534)
Constant	68.525***	64.537***	45.108**	47.920**	73.039**
	(23.487)	(22.883)	(22.927)	(22.674)	(22.639)
Additional Controls	YES	YES	YES	YES	YES
N	1,331	1,331	1,331	1,331	1,331

Note: OLS with standard errors in parentheses. The dependent variable is the average of reward and punishment points allocated by player C to players A or B in the five possible outcomes in the trust game. Additional controls include female dummy, age, log(income), type of city grown up in, migration dummy, education of father and mother, sensation seeking (NISS), proactivity, participation in lotteries, risk preference. *** p<0.01, ** p<0.05, * p<0.1

(4)). Together, these results suggest that police applicants' higher investment in reward and punishment seems only in part driven by being a police applicant per se, and that an important determinant is participants' own trustworthiness, which is found to be significantly higher among police applicants (cf. Table 2). Finally, in column (5), we combine trust and trustworthiness into two important behavioral types: "money maximizing" individuals, who do not trust and return zero back transfers, and "cooperative" individuals, who trust (i.e., send either 50 or 100) and return equal shares. As can be seen, money maximizers invest significantly less in reward and punishment as a third party, while cooperators invest significantly more. In this specification, the police applicant dummy becomes marginally significant at the five percent level ($p = 0.051$).

In sum, the above results provide important evidence for the self-selection of pro-socially motivated agents into the German police force. Self-selection can be observed along two main dimensions: First, police applicants are significantly more trustworthy, i.e., they return

higher shares as a second mover in a trust game; second, police applicants invest more resources in rewarding and punishing other players as a third party. Given that third-party investments are shown to be significantly associated with own trustworthiness, the results suggest that trustworthiness is an important driver in this behavior. In other words, police applicants have a higher motivation to enforce norms of cooperation, especially because they are more trustworthy themselves.

5 Conclusion

Police forces in democratic societies have to strike a subtle balance between protecting the citizen and enforcing the law. Being close to the citizen is a crucial determinant of police efficiency (Blanes i Vidal and Kirchmaier 2016). In order for citizens to be willing to cooperate, the police must be trustworthy, rather than exploiting people's trust. Trust between the police and the citizens they serve is a cornerstone of civilized societies.

Our study has looked at police applicants in two states of Germany who have not even passed any test or interview but have simply revealed their interest in a job with the police by submitting their CV. We found that these applicants feature substantially higher levels of trustworthiness and are willing to invest more of their resources into rewarding trustworthy behavior and punishing the abuse of trust. Our results suggest that the police agencies investigated here manage to attract people with a good-citizen type of motivation which is appreciated in many organizations, but particularly important for the police force. They also suggest that given that ex-post control of public service employees is quite cumbersome, reform of public bureaucracies may rely to a substantial degree on improving the matching process between open positions and candidates.

Of course, the extent to which self-selection is expected to be advantageous elsewhere and also more generally depends on a number of critical factors. Most importantly, institutional factors have to be taken into account such as, for example, the precise role and tasks public service agents have in society (and citizens' expectations thereof) as well as the combination of rewards and benefits together with career and training possibilities (Ashraf et al. 2016). Police agencies in Germany seem to have managed to govern this matching mechanism

successfully, as is reflected by our study.

It would be fascinating if in future research we could replicate the design of our study in other contexts, in particular those in which the police has traditionally played different roles. Some evidence from post-communist societies such as Georgia seems to indicate that both self-selection and a revamping of the organizational design of the police have been successful although the institutional context is much weaker here (Devlin 2010). Drawing conclusions for the U.S. is tempting, but at least two crucial elements are different in Germany: race issues are much weaker in Germany, and citizens usually have no right to carry fire arms. It remains an open question how these differences affect the process of self-selection and more generally the matching mechanisms between police agencies on the one hand and the pool of citizens they recruit from on the other.

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Appendix A: Additional Results

A.1 Norm Enforcement Preferences

Based on the strategy method we used for player C in the reward-and-punishment game, we can analyze whether police applicants reveal different *preferences* for norm enforcement than high school students. For example, it might be that police applicants have a stronger preference for punishment than for rewarding. Alternatively, police applicants might be less likely to not punish or reward at all. In the following, we focus on player C's reward and punishment decisions targeting player B, because this player's behavior is readily interpretable in terms of cooperation or non-cooperation: if player B shares the returns equally, he cooperates; if he keeps the money, he does not cooperate. Player A's trust decision, on the contrary, is less easily interpretable as it is also influenced by the belief about B's trustworthiness. For example, if player A does not trust, this may be due to pessimism and not because player A is non-cooperative.[11]

Table 4: Norm Enforcement Types: Definition

	A0	A50B0	A50B100	A100B0	A100B200
Never punish nor reward	0	0	0	0	0
Punish non-cooperation	≥ 0	< 0	≥ 0	< 0	≥ 0
Reward cooperation	≤ 0	≤ 0	> 0	≤ 0	> 0
Reward and punish	0	< 0	> 0	< 0	> 0
Punish anti-socially	any value	any value	< 0	any value	< 0

Note: Types are based on player C's reward and punishment decisions targeting player B. AxBy is defined as the outcome in the trust game in which player A sends x and player B returns y.

Table 4 classifies player C's reward and punishment decisions into different norm enforcement types. We say that player C *never punishes nor rewards* if he does not allocate any reward or punishment points in any of the five possible outcomes of the trust game, i.e., total investment in norm enforcement is zero. Next, he *punishes non-cooperation* if he allocates punishment points in case player A trusts and player B keeps the money (A50B0, A100B0) but does not punish otherwise. Similarly, we say he *rewards cooperation* if he allocates reward points in case player A trusts and player B shares equally (A50B100, A100B200)

[11] Results, however, do not depend on this. Type shares are also similar and not significantly different, if we include player C's decisions targeting player A.

and does not reward otherwise. *Reward and punish* is the combination of both types. Finally, we also consider a so-called *anti-social type*, who punishes cooperation, i.e., allocates punishment points in case A trusts and B shares equally (A50B100, A100B200). The latter type has been documented to play a significant role in the success (or better, failure) of stabilizing norms of cooperation in groups and societies (Herrmann et al. 2008, Kosfeld and Rustagi 2015).

Table 5: Norm Enforcement Types: Shares

	Total	High school students	Police applicants	$p-$value (Fisher's exact test)
Never punish nor reward	0.122	0.131	0.102	0.140
Punish non-cooperation	0.623	0.607	0.656	0.079
Reward cooperation	0.263	0.260	0.270	0.699
Reward and punish	0.226	0.224	0.231	0.786
Punish anti-socially	0.009	0.010	0.007	0.566
N	1,418	959	459	

Table 5 shows the shares of norm enforcement types in the two groups of participants. Except for the type who punishes non-cooperation, where shares differ marginally significantly, shares are not significantly different. On average, about 12 percent of the participants never punish nor reward, i.e., these participants decide in line with pure money-maximizing preferences. All remaining participants assign reward and/or punishment points in at least one condition although this comes at a personal cost to them. For example, about 62 percent punish non-cooperation, while 26 percent reward cooperation. Interestingly, most of the rewarding types punish as well, as the share of types who both reward and punish is not much smaller (22 percent on average). Finally, about one percent punish anti-socially, i.e., punish B although B cooperates.

The fact that we find no significant difference in the distribution of types suggests that police applicants' higher investment in norm enforcement is caused by a level effect, i.e., a generally higher motivation to reward or punish any given behavior in the trust game. We therefore focus on average investment in our main analysis.

A.2 Additional Tables

Table 6: Covariates

	Total	High school students	Police applicants	$p-$value
Female	0.569	0.655	0.405	0.000
Age	19.870	19.555	20.473	0.000
ln(Income)	4.957	4.713	5.425	0.000
City type				0.000
large	0.104	0.078	0.155	
medium	0.207	0.199	0.223	
small	0.319	0.352	0.254	
rural	0.370	0.371	0.368	
Migration (y/n)	0.068	0.070	0.066	0.820
Education father				0.000
no	0.011	0.009	0.018	
Volks-/Hauptschule	0.126	0.097	0.179	
Mittlere Reife	0.393	0.363	0.451	
FH-Reife	0.070	0.068	0.074	
Abitur	0.364	0.418	0.260	
other	0.013	0.015	0.009	
don't know	0.023	0.030	0.009	
Education mother				0.000
no	0.010	0.006	0.017	
Volks-/Hauptschule	0.184	0.155	0.241	
Mittlere Reife	0.273	0.251	0.315	
FH-Reife	0.113	0.111	0.116	
Abitur	0.366	0.419	0.265	
other	0.019	0.021	0.015	
don't know	0.035	0.037	0.031	
NISS	50.721	49.794	52.492	0.000
Proactivity	34.505	33.737	35.974	0.000
Participation lotteries				0.000
never	0.619	0.577	0.697	
1-2	0.279	0.293	0.252	
3-10	0.086	0.109	0.044	
11-25	0.011	0.014	0.007	
more often	0.005	0.007	0	
Body height	173.987	172.872	176.118	0.000
Risk preference	5.188	5.041	5.468	0.000
N	1,331	874	457	

Note: Income = monthly income; city type = type of city grow up in until age of 15; participation in lotteries considers last 12 months; risk preference = general risk question from SOEP. Statistical significance is based on t-tests or alternatively, Fisher's exact test (female, migration) and χ^2-test (city type, education father/mother, participation lotteries).

Table 7: Trust and Trustworthiness

	Trust A	Trustworthiness B if A sends 50	Trustworthiness B if A sends 100
	(1)	(2)	(3)
Police applicant	0.061	0.068**	0.086***
	(0.043)	(0.027)	(0.028)
Female	0.056	0.038	0.117***
	(0.056)	(0.035)	(0.035)
Age	0.010	−0.000	−0.006
	(0.012)	(0.007)	(0.007)
ln(Income)	0.012	0.007	−0.008
	(0.020)	(0.012)	(0.012)
Migration	−0.105	0.051	0.075
	(0.073)	(0.047)	(0.047)
Education father	0.071*	−0.004	0.001
	(0.043)	(0.027)	(0.028)
Education mother	−0.068	0.009	0.021
	(0.043)	(0.027)	(0.027)
City type	0.034	0.020	−0.010
	(0.039)	(0.024)	(0.025)
NISS	−0.003	0.001	−0.001
	(0.002)	(0.002)	(0.002)
Proactivity	0.002	0.000	0.002
	(0.003)	(0.002)	(0.002)
Lottery	0.027	−0.004	−0.004
	(0.038)	(0.024)	(0.024)
Risk preference	0.024**	−0.005	−0.008
	(0.012)	(0.007)	(0.007)
Body height	0.007**	0.001	0.003
	(0.003)	(0.002)	(0.002)
Constant	0.451	1.480***	1.306***
	(0.604)	(0.383)	(0.384)
N	1,331	1,331	1,331
R^2	0.021	0.009	0.019

Note: OLS with standard errors in parentheses. Education father and mother are coded as dummies (1 = Abitur, 0 otherwise), the same for city type (1 = non-rural, 0 = rural) and lottery (1 = participated at least once, 0 = never). *** p<0.01, ** p<0.05, * p<0.1

Table 8: Reward and Punishment

	Average investment C				
	(1)	(2)	(3)	(4)	(5)
Police applicant	4.215**	3.673**	2.876*	2.813*	3.173*
	(1.682)	(1.640)	(1.638)	(1.619)	(1.626)
Trust		8.851***		6.170***	
		(1.043)		(1.104)	
Trustworthiness50			6.975***	5.140**	
			(1.985)	(1.989)	
Trustworthiness100			10.027***	7.825***	
			(1.981)	(1.998)	
Money maximizing					−13.694***
					(2.690)
Cooperative					9.387***
					(1.534)
Female	−3.107	−3.602*	−4.543**	−4.562**	−4.643**
	(2.159)	(2.104)	(2.104)	(2.080)	(2.089)
Age	−0.113	−0.199	−0.0522	−0.126	−0.020
	(0.450)	(0.439)	(0.437)	(0.432)	(0.434)
ln(Income)	0.103	−0.004	0.136	0.056	0.019
	(0.758)	(0.738)	(0.735)	(0.727)	(0.731)
Migration	4.055	4.983*	2.948	3.853	3.412
	(2.853)	(2.781)	(2.770)	(2.743)	(2.750)
Education father	2.764	2.133	2.797*	2.348	2.779*
	(1.681)	(1.639)	(1.631)	(1.614)	(1.620)
Education mother	1.636	2.237	1.362	1.844	1.565
	(1.668)	(1.627)	(1.619)	(1.603)	(1.609)
City type	−0.781	−1.085	−0.814	−1.013	−0.968
	(1.498)	(1.460)	(1.454)	(1.438)	(1.444)
NISS	0.003	0.031	0.004	0.024	0.019
	(0.093)	(0.090)	(0.090)	(0.089)	(0.089)
Proactivity	0.119	0.099	0.103	0.093	0.114
	(0.118)	(0.115)	(0.115)	(0.113)	(0.114)
Lottery	−1.044	−1.286	−1.053	−1.221	−1.270
	(1.470)	(1.433)	(1.426)	(1.410)	(1.417)
Risk preference	0.817*	0.607	0.928**	0.756*	0.806*
	(0.449)	(0.438)	(0.436)	(0.432)	(0.433)
Body height	−0.219*	−0.284**	−0.258**	−0.294***	−0.276**
	(0.116)	(0.113)	(0.113)	(0.112)	(0.112)
Constant	68.525***	64.537***	45.108**	47.920**	73.039**
	(23.487)	(22.883)	(22.927)	(22.674)	(22.639)
N	1,331	1,331	1,331	1,331	1,331
R^2	0.020	0.070	0.079	0.100	0.091

Note: OLS with standard errors in parentheses. Education father and mother are coded as dummies (1 = Abitur, 0 otherwise), the same for city type (1 = non-rural, 0 = rural) and lottery (1 = participated at least once, 0 = never). *** p<0.01, ** p<0.05, * p<0.1