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Do norms make preferences social? Supporting evidence from the field

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Do norms make preferences social? Supporting evidence from the field.

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Abstract

We examine whether compliance with the law is associated with prosocial behavior. We test whether people who comply with parking rules are more likely to reply to a survey than people who did not comply with parking rules. We find that parking rule followers have significantly higher response rates than parking rule violators. The responses of the surveys suggest, that the evaluation of the parking rule violation is associated with the decision to park correctly. Economic considerations like the expected sanction level or the detection probability do not seem to influence the decision to park correctly.

Keywords: Prosocial behavior, Law, Norms.

JEL classification: C99, D63, K42.

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1 Introduction

Recent studies (e.g. Krupka and Weber 2013 or Kimbrough and Vostroknutov 2016, 2018) have argued that prosocial behavior in e.g. dictator games and public good games can be explained by preferences for compliance with social norms. According to the authors, a social norm is defined as the socially most appropriate behavior, which is recognized by the whole society. They argue that individuals have preferences for complying with the social norm, i.e. non-compliance causes individual disutility. Kimbrough and Vostroknutov (2016, 2018) find that these costs are heterogeneous among individuals and can be measured by the tendency to follow general formal rules. Since a norm is an informal rule about what one ought to do or not to do, the tendency to follow formal rules carries over to the adherence to social norms. They show in the lab, that individuals who take costs to follow artificially created rules in a rule-following task, tend to behave more in line with socially appropriate behavior in subsequent dictator games or public good games.

In line with this research we want to test whether the compliance with the law (which gives the formal rules of everyday behavior) is associated with prosocial behavior. Because laws are often in place to prevent socially inappropriate behavior, e.g. stealing or hurting someone, following the law might be considered as prosocial behavior by itself (see for example Posner 1997 or Shavell 2002). Since we want to imitate the rule following task as closely as possible, we used a law which we think is free of any prosocial consideration. We distributed envelopes containing a survey about the parking situation in the city of Marburg behind the wipers of parked cars which are either parked correctly or not, i.e. payed for a ticket or put the parking disc out on display. To take part in the study the car owners had to send the filled out surveys back to us via mail. In the envelopes we included pre-stamped return letters. By manipulating the address of the university on the letters we were able to see whether the survey response came from a parking rule follower or a parking rule violator.

We argue that the decision to follow the parking rule is (at least partly) driven by preferences to follow general rules, but is free from any prosocial considerations. In addition we assume that it is socially more appropriate to respond to the survey than not to respond. Hence, in line with the research of Kimbrough and Vostroknutov (2016, 2018) we suspect that individuals who follow the parking rule are more likely to answer

the survey than individuals who do not follow the parking rule. We find that individuals who park correctly have a higher likelihood of responding to the survey. Hence, we find supporting evidence that people who follow the law are more likely to behave prosocially, that is likely guided by informal rules or norms.

The next section outlines a simple model of norm dependent utility. The third section describes the research design and the fourth section the procedure of the study. The results are discussed in the fifth section and the sixth section concludes.

2 Norm-dependent utility

We adopt the model of Krupka and Weber (2013) and Kimbrough and Vostroknutov (2016, 2018) and assume that individuals derive costs from not complying with a social norm. A social norm gives the socially most appropriate behavior in a given context. For the simplicity of the model we assume that there exists a social norm for each context and that this norm is recognized by the whole society and there is consensus about this norm. Let a be some action and a_n be the social norm, i.e the socially most appropriate action in a given context. Then $g(|a - a_n|) \in [-1, 1]$ measures the social appropriateness of action a relative to the social norm a_n , where $g(|a - a_n|)$ is increasing in $|a - a_n|$ and $g(0) = 0$. Deviating from the norm causes disutility, whereas complying to the norm yields no costs. Since a norm is recognized by the whole society, we assume that a_n and g are the same for each individual. However, individuals are heterogeneous in their costs from not complying with the norm. The parameter ϕ_i measures the degree to which individual i cares about adhering to social norms. It is assumed that ϕ_i is constant across contexts and hence can be interpreted as a general rule following parameter of individual i .¹ The norm-dependent utility of an action a for individual i is hence given by $U_i(a) = u_i(a) + \phi_i g(|a - a_n|)$, where $u_i(a)$ gives the utility from action a for individual i and $\phi_i g(|a - a_n|)$ the costs from not complying with the social norm. We assume that ϕ_i and $g(|a - a_n|)$ are independent from each other, but note that this might not be the case in reality.

Next we discuss the decision of an individual i of following the parking rule. Let

¹Note that $g(|a - a_n|)$ is not assumed to be constant across contexts, such that the same action might yield different costs in different contexts. For example crossing the street if the traffic light is red, might be considered as appropriate when there is no one around, but it might be considered as inappropriate if children are also waiting at the traffic light (see Fabbri and Hoepfner 2018 and for the effect of peers on social norms see Gächter et al 2017).

$a \in \{0, 1\}$ be the decision to follow the parking rule, with $a = 0$ depicting the case of not following the parking rule and $a = 1$ describing the case of following the parking rule. We exclude partial compliance, like paying for the parking ticket but overdrawing the time limit. Let $S_{i,j}$ be the expected sanction of individual i from not following the parking rule in parking area j and $C_{i,j}$ the costs from following the parking rule. Hence the expected utility from of individual i from parking in parking area j is given by:

$$U_i(a) = \begin{cases} -C_{i,j} & a = 1, \\ -S_{i,j} - \phi_i g(1) & a = 0. \end{cases} \quad (1)$$

Individual i chooses to follow the parking rule if $U_i(1) \geq U_i(0)$ or

$$\phi_i \geq \frac{C_{i,j} - S_{i,j}}{g(1)}. \quad (2)$$

Since we assume that $g(1)$ is the same for all individuals, the decision to follow the parking rule on the one hand depends on the level of ϕ_i and on the other hand on the difference between the costs from complying with the parking rule compared to the expected sanctions from not complying. Equation (2) suggests that a higher ϕ_i is associated with a higher likelihood of following the parking rule. Since ϕ_i is assumed to be constant across contexts, the level of ϕ_i carries over to the decision of responding to the survey.

Regarding the survey response, we assume that it is socially more appropriate to respond to the survey than not to respond, i.e. there is a norm of answering the survey. For example Brügger and Dholaki (2010) find that individuals taking part in online surveys are more prosocial than individuals who do not take part. Bosnjak et al (2005) find that individuals feel a moral obligation and social pressure to participate in internet surveys. Hence we hypothesize that individuals with a higher preference of following general rules are more likely to respond to the survey. Under the assumption that ϕ_i is constant across contexts, we hypothesize that parking rule followers are more likely to answer the survey than parking rule violators.

3 Research design

We attached envelopes, containing the survey about the parking situation in Marburg, behind the wipers of correctly and incorrectly parked cars in the city of Marburg. We manipulated the address of the return letters, such that we are able to identify parking

rule violators and parking rule followers. We tried to use a law which is free from moral considerations, such that following the law cannot be explained by prosocial preferences but rather by a general preference of following rules. We therefore abstract from morally loaded parking rules, like parking incorrectly on a parking lot for disabled persons or parking in another person’s driveway and focus on parking areas where one has to pay for a parking ticket or display a parking disc.² We argue that the decision to comply to one of these parking rules is similar to the rule following task in the studies of Kimbrough and Vostroknutov (2016, 2018), where following the rule is free from any social context. Hence we suspect that individuals who comply to the parking rule have on average higher preferences for complying with general rules.

We assume that answering the survey is considered socially more appropriate than not answering it. To support this assumption, the envelope which we attached to the cars showed the logo of the Philipps-University of Marburg and the sentence: “We are asking for your assistance”. By asking for assistance by the car owners, it was clear that returning the survey would be a prosocial act towards the researchers.

Our research design is similar to the the design of Kimbrough and Vostroknutov (2016, 2018), where the tendency to follow formal rules in the lab was found to be associated with the compliance with informal rules or norms in subsequent dictator or public good games. Since laws are the formal rules of everyday behavior, we hypothesize that parking rule followers have a higher tendency to reply to the survey than parking rule violators.

A practical concern of our study was that people might attach their envelopes to another car. This way an envelope which we marked as incorrectly parked might end up on a correctly parked car. We did two things to control for this concern. First, in a pilot session we distributed the envelopes with the surveys in one specific parking lot and checked whether individuals actually reattached the envelopes.³ In the pilot session we distributed in total 118 envelopes. Three of the distributed envelopes were reattached to other cars and two of the envelopes were “stolen” by car owners, who arrived at the parking lot after we distributed the envelopes. Thus, in total 4.35% of the distributed envelopes in the pilot session were reattached to different cars. Second, we included in the survey the question: “Did you buy a parking ticket for parking in this parking lot

²See e.g. Cope and Allred (1990) and Miller (2003) for illegal parking on parking areas for disabled persons.

³The parking lot was observed by one of the authors, hidden from the view of the car drivers.

today?” (for the parking areas with disk parking, we asked whether the parking disk had been put on display). We find that 8.13% of the individuals who we classified as parking rule followers stated that they did not park correctly and 48.39% of the parking rule violators stated that they did park correctly. The former inconsistency of the stated and observed behavior might stem from the way we classified parking rule violators: When distributing the envelopes, we only checked whether the car owner bought a ticket or displayed a parking disk. We did not check whether the parking ticket or the parking disk was already expired. Although we asked individuals whether they bought a ticket, it might be the case that they classify themselves as parking rule violators when their ticket expired. The latter inconsistency in stated and observed behavior might stem from the fact that parking rule violators did not want to admit that they had broken the law. Other possibilities might be that individuals do not immediately fill out the survey and hence forgot whether they bought a ticket or put the parking disc on display. Also, it might be the case that the envelope was thrown on the ground and the person who picked it up then responded to the survey. This way we could not control for the respondents compliance with the parking rule. In the pilot session only one envelope was thrown on the ground. For the main session we collected in total 14 envelopes which were put on the ground.

To account for these inconsistencies we consider three different data specifications: in the *observed* specification, we condition on the behavior which we observed. Hence we assume that if a returned survey was marked as a parking rule follower (violator), then the car owner actually parked (in)correctly. In the *self-report* specification we condition on the statements of the individuals. Hence we assume that the answer to the question, whether the individual followed the parking rule, is correct. In the *consistent* specification we only include the observations where the observed behavior is consistent with the individuals’ self-reported behavior.

4 Procedure

Our study was carried out on the 28th and the 29th of August 2018 in the city of Marburg. We attached the envelopes to take part in our study behind the wipers of parked cars in parking areas in Marburg where one either has to draw a ticket or put the parking

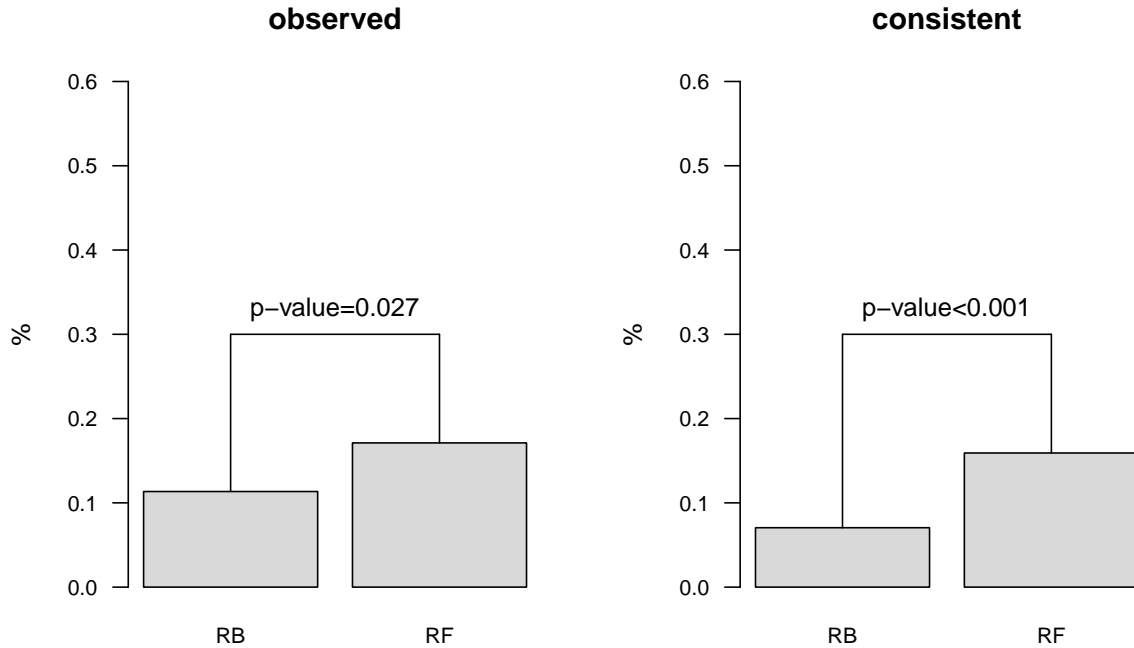
disc on display. For the parking areas we choose all available parking areas in the city of Marburg, wherein the parking areas needed to be publicly accessible and not be restricted through a parking barrier. The envelope showed the logo of the Philipps-University of Marburg and the sentence “We are asking for your assistance”. The envelope contained an introductory letter, that explained the purpose of our study, a questionnaire, two pre-stamped envelopes with the address of the university and a sheet of paper. We manipulated the university address of the pre-stamped envelopes to distinguish between parking rule followers and parking rule violators. To take part in the study the car owners had to send us the complete questionnaire via mail. In addition, the participants had the chance to win one of four €50 gift cards. To take part in the the lottery for the gift cards, car owners had to send their contact info via mail. To guarantee anonymity, we made it clear to the participants that they had to send the completed questionnaire and their contact info in two separate envelopes. In total we distributed 1,197 envelopes on cars that were parked correctly and 242 envelopes on cars that were incorrectly parked. For the analysis we also include the envelopes which we distributed in our pilot session. We deleted 9 observations, with 5 observations being parking rule follows and 4 observations being parking rule violators, because these respondents stated that they possess a resident ID which allow them to park free of costs. This leaves us with 1,192 distributed envelopes on correctly parked cars and 238 envelopes distributed on incorrectly parked cars.

5 Results

5.1 Survey response rates

From the distributed surveys 204 (17.11%) were returned which were marked as correctly parked and 27 (11.34%) surveys, which were marked as incorrectly parked. A Fisher’s exact test shows that the difference in response rates is significant at the 5% level. If we exclude questionnaires in which self-reported behavior is inconsistent with observed behavior we get 187 (15.91%) returned surveys from parking rule followers and 16 (7.05%) returned surveys from parking violators. A Fisher’s exact test shows that the difference in response rates is significant at the 0.1% level (see figure 1). These findings support our hypothesis that parking rule followers are more likely to answer to the survey than parking rule violators. We next turn the survey responses, to see whether the decision to

Figure 1: Response rates for parking rule followers and parking rule violators



Notes: RF are surveys which are marked as correctly parked, RB are surveys which are marked as incorrectly parked. For the observed (consistent) data specification 204 (187) envelopes are returned from correctly parked cars and 27 (16) from incorrectly parked cars. The p-values refer to a Fisher’s exact test.

follow the parking rule was driven by preferences for following rules.

5.2 Survey responses

Table 1 gives the demographics of the sample of individuals who answered to the survey. The average individual who answered to the survey is 50.48 years old, has a high school degree (German “Abitur”) and lives in the area of Marburg. 42% of the survey respondents are male.

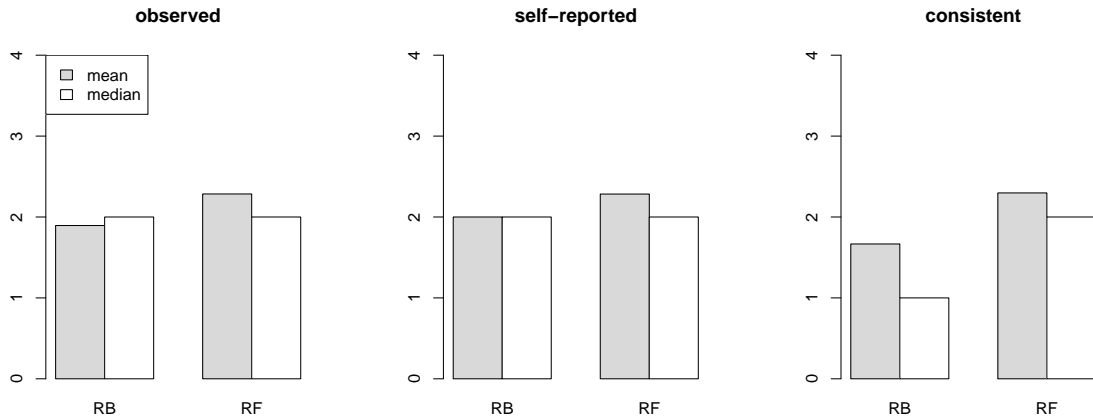
When interpreting the answers of the surveys two things have to be kept in mind. First, we are only considering answers from individuals who answered the survey. Hence, they already showed that they behave more prosocially than someone who did not answer the survey. Second, people who answered the survey might ex post rationalize their parking decision. This might lead to reverse causality, such that it is not clear whether the survey responses drive the decision to follow the parking rule or whether it is the

Table 1: Demographics

	mean total	mean		observations	
		RF	RB	RF	RB
age	50.48 (16.75)	51.63 (16.89)	42 (13.01)	200	27
gender	0.42 (0.49)	0.40 (0.49)	0.51 (0.51)	203	27
residence	2.22 (0.78)	2.21 (0.78)	2.25 (0.85)	195	24
education	3.10 (1.10)	3.11 (1.10)	3.04 (1.08)	203	26

Notes: Standard errors in parenthesis. Data specification: *observed*. The variable *gender* is 1 if the individuals stated to be male and 0 if the individual stated to be female. We also included the option “other”, but nobody chose this option. The answer to the question for the residence consisted of a 3 point Likert scale with 1 being “further away”, 2 being “district of Marburg” and 3 being “city of Marburg”. The answer to the question education consisted of a five point Likert scale with 1 being German “Hauptschulabschluss”, which is equal to 9 years of education, 2 being German “mittlerer Schulabschluss (z.B. Realschule)”, which is equal to 10 years of education, 3 being “high-school diploma” (German “Abitur”), 4 being “university degree” and 5 being “Ph.D.”

Figure 2: Mean and median responses to “In your opinion, to what extent does the revenue from the parking fee benefit the citizens of Marburg?”

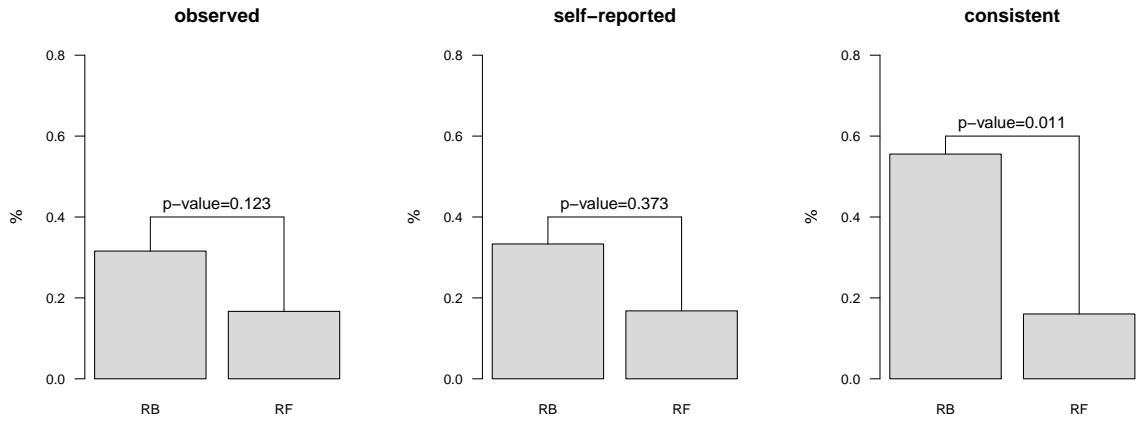


Notes: For the observed data specification we compare 144 parking rule followers against 19 parking rule violators. For the self-reported data specification we compare 141 parking rule followers against 19 parking rule violators. For the consistent data specification we compare 131 parking rule followers against 9 parking rule violators. The mean (median) for the *observed* data specification are for RF: 2.28 (2) and for RB: 1.89 (2), for the *self-reported* data specification: RF: 2.28 (2) and RB: 2 (2) and for the *consistent* data specification: RF: 2.29 (2) and RB: 1.67 (1). P-values for a two-sided Wilcoxon rank-sum test: *observed*: 0.044, *self-reported*: 0.135 and *consistent*: 0.03.

other way around. Therefore one has to be careful when interpreting the survey results.

We first want to check whether our assumption that following the parking rule is not considered as prosocial behavior is fulfilled. In the survey, we therefore asked: “In your opinion, to what extent does the revenue from the parking fee benefit the citizens of Marburg?”. The answer consisted of a four point Likert scale with 1 meaning “not at all”, 2 meaning “to a small extent”, 3 meaning “to a large extent” and 4 meaning “fully”. Figure 2 gives the mean and median responses for the three different data specifications. Parking rule followers rate the extent to which the parking fee benefit the citizens of Marburg significantly higher than parking rule violators. However, on average both groups think that the parking fee benefits the citizens to Marburg to a small extent. Next, we check whether the fraction of parking rule followers and parking rule violators who answer “not at all” varies between the group. By answering “not at all”, individuals indicate that it is not prosocial to follow the parking rule, whereas the other answers at least point to some degree of prosociality. We therefore pool the answers 2 to 4 and use a Fisher’s exact test whether the frequency of the answer “not at all” varies between the two groups.

Figure 3: Relative frequency of the answer “not at all” to the question “In your opinion, to what extent does the revenue from the parking fee benefit the citizens of Marburg?”

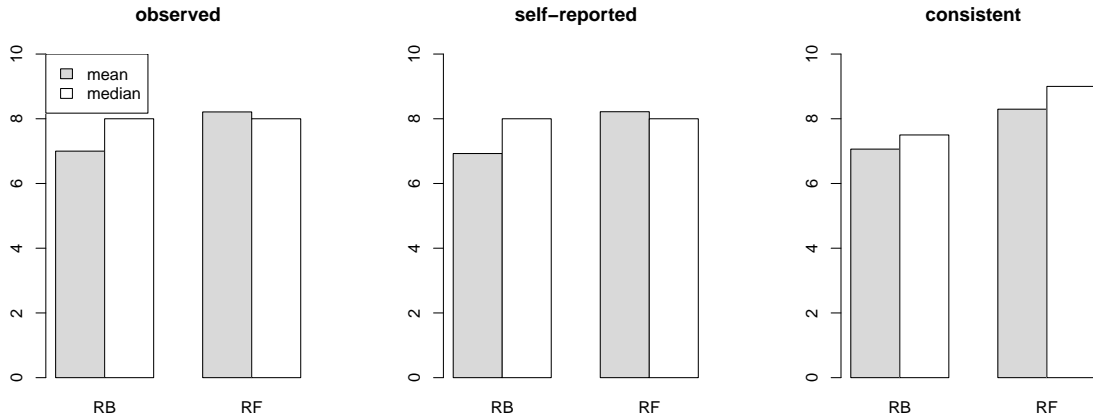


Notes: In the observed data specification 144 RF answer the question with 24 answering “not at all” and 19 RB answer the question with 6 answering “not at all”. In the self-reported data specification 131 RF answer the question with 22 answering “not at all” and 18 RB answer the question with 6 answering “not at all”. In the consistent data specification 131 RF answer the question with 21 answering “not at all” and 9 RB answer the question with 5 answering “not at all”.

Figure 3 shows that for the observed data specification 16.67% of the rule followers and 31.16% of the rule violators stated that the parking fee does not at all benefit the citizens of Marburg (for the self-reported data specification 16.79% of the rule followers and 33.33% of the rule violators and for the consistent data specification 16.03% of the rule followers and 55.56% of the rule violators give the answer “not at all”). The difference in relative frequencies is only significant for the consistent data specification. Note also that 68 (63) individuals for the observed and self-reported (consistent) data specification stated “Don’t know”, such that there seems to be a large heterogeneity in answers. Also note that the parking fees for parking for half an hour ranged from €0.30 to €0.80, such that the degree of prosociality from complying with the parking rule is rather low. These results suggest that differences in reply rates due to different degrees of prosocial preferences seem to be unlikely.

Next, we want to check whether the decision to comply with the parking rule might be driven by a general preference for following rules. Therefore we asked in the survey: “Please indicate how much you agree with each of the statements: Rules are there to be followed.” The answers ranges on a 10 point Likert scale from “Do not agree at all”

Figure 4: Mean and median responses to “Rules are there to be followed”



Notes: For the observed data specification we compare 200 parking rule followers against 28 parking rule violators. For the self-reported data specification we compare 195 parking rule followers against 27 parking rule violators. For the consistent data specification we compare 184 parking rule followers against 16 parking rule violators. Mean *observed*: RF: 8.21, RB: 7, *self-reported*: RF: 8.22, RB: 6.93, *consistent*: RF: 8.3, RB: 7.06 P-values for a two-sided Wilcoxon rank-sum test: *observed*: 0.023, *self-reported*: 0.009 and *consistent*: 0.037.

to “Fully agree”. Figure 4 gives the mean and median responses for the three different data specifications. This difference is significant at the 5% level independent on the data specification. As figure 4 suggest, the level of the differences in means and medians is however rather low.

To see whether the tendency to follow rules is a main driver of individuals to park correctly we test whether other considerations might play a more important role for following the parking rule. Table 2 summarizes the regression results of a probit regression. The variable *rule following* gives the answer to the question “Please indicate how much you agree with each of the statements: Rules are there to be followed.”. The variable *park. rule perception* gives the answer to the question “How bad do you perceive following behavior? Using a parking lot without paying for the ticket.” (For persons who parked on a parking area, where displaying a parking disc was required, we used the answer to the question ‘How bad do you perceive following behavior? Not displaying the parking tick, although required for the parking area.’) The answer consisted of a four point Likert scale, with 1 being “very bad”, 2 being “bad”, 3 being “not that bad” and 4 being “not bad at all”. The variable *sanction prob.* measures the perceived probability of being detected from violating the parking rule. The variable *exp. sanction level* gives

Table 2: Compliance with the parking rule

	(1)	(2)	(3)	(4)
rule following	0.094* (0.056)	0.015 (0.062)	0.041 (0.070)	-0.026 (0.082)
park. rule perception		0.674*** (0.223)	0.739*** (0.243)	0.772*** (0.271)
sanction prob.	-0.589 (0.495)	-0.323 (0.514)	1.056 (0.751)	1.796* (0.922)
exp. sanction level	0.023 (0.014)	0.022 (0.014)	0.044* (0.022)	0.046* (0.024)
Constant	0.077 (0.545)	-0.743 (0.627)	-2.822** (1.200)	-2.528* (1.314)
Demographics	No	No	Yes	Yes
Parking controls	No	No	No	Yes
Observations	192	189	177	166
Log Likelihood	-70.716	-65.392	-51.682	-46.442
Akaike Inf. Crit.	149.432	140.783	121.364	116.884

Notes: Standard errors in parentheses. *p<0.1; **p<0.05; ***p<0.01. Probit regression with the dependent variable being the probability that the returned questionnaire was marked as a parking rule follower. The demographics include: age, gender, residence and education. The parking controls include: parking fee, parking duration and weekly usage of the parking lot. Data: observed.

the expected sanction level, in case an individual is detected by not following the parking rule.⁴ In all models the preferences of following rules and economic factors like the sanction probability and the expected sanction level do not significantly influence the decision to park correctly. However, how bad individuals perceive not following the parking rule significantly influences their decision to park correctly. Although our question does not point directly to the social appropriateness of violating the parking rule, we would argue that this question measures to some extent the term $\phi_i g(1)$ in equation (1), since $\phi_i g(1)$ measures the individual’s disutility from not following the parking rule. Under the assumption that $g(1)$ is the same for each individual, this question would then measure the ϕ_i parameter and a higher tendency of following rules would be associated with a higher likelihood of complying with the parking rule. However, the *park. rule perception* variable might be subject to reverse causality: not complying with the parking rule might lead to a lower rating of how bad one perceives not following the parking rule, since people want to justify their behavior. In addition, Kimbrough and Vostroknutov (2018) find that ϕ_i and $g(1)$ are correlated, such that individuals with higher preferences of following rules tend to rate actions which deviate from the norm more inappropriate than individuals with a low preference of following rules. Therefore, it might be hard to measure ϕ_i , and $g(1)$ independently from each other. We next try to investigate this problem a bit further.

Table 3 gives an OLS regression with the dependent variable being the answer to the question “Please indicate how much you agree with each of the statements: Rules are there to be followed.”. It can be seen that the preference of following rules and how bad one perceives not following the parking rule are highly correlated with each other. This would be in line with our interpretation that the variable *park. rule perception* can be seen as the costs of not following the parking rule, $\phi_i g(1)$. However, it might also point to the fact that ϕ_i might actually be correlated with $g(1)$. It also seems that more risk seeking individuals have lower preferences of following rules and education also seems to

⁴In the survey we had two question regarding the sanction level. We asked the individuals: “Please guess the sanction for parking without a parking ticket, if you: -park illegally less then 30 minutes - park illegally more than 3 hours.” (For parking areas with disc parking, we asked: “Please guess the sanction for parking without a parking disc, although prescribed for this parking lot, if you: -park illegally less then 30 minutes - park illegally more than 3 hours.”) For the variable we used the answer to “-park illegally less then 30 minutes” if the person stated she parked less then 30 minutes, the average level of the both answers, if she parked between 30 minutes and 3 hours and the answer to “park illegally more than 3 hours” if she parked more than 3 hours.

have a significant negative influence on the preference of following rules.⁵

Table 3: Answer to the question “Rules are there to be followed.

	observed	self-reported	consistent
risk taking	−0.279*** (0.058)	−0.277*** (0.059)	−0.286*** (0.061)
park. rule perception	0.796*** (0.169)	0.803*** (0.171)	0.751*** (0.171)
age	0.011 (0.007)	0.010 (0.007)	0.011 (0.007)
gender	0.325 (0.249)	0.323 (0.255)	0.392 (0.258)
education	−0.323*** (0.105)	−0.319*** (0.107)	−0.245** (0.107)
Constant	7.833*** (0.725)	7.822*** (0.734)	7.742*** (0.747)
Observations	211	208	190
F Statistic	15.554	15.074	14.200
R ²	0.275	0.272	0.278
Adjusted R ²	0.257	0.254	0.259

Notes: Standard errors in parentheses. OLS regression with the dependent variable being the answer to the question “Rules are there to be followed”. The variable *risk taking* gives the answer to the question: “Generally speaking, are you ready to take risks, or do you rather avoid taking risks?” The answer consisted of a 10 point Likert scale, with 0 being “not at all risk-seeking” and 10 being “very riks-seeking”.

We also asked about the frequency of individuals’ rule violations. The corresponding question in the survey was: “Thinking back to the last year, how often did you use a parking place without paying for the parking ticket (without displaying the parking disk, although it was prescribed for this parking place?”). For the self-reported tendency to

⁵In the Appendix we also show a similar table with the dependent variable being the answer to the question “How bad do you perceive following behavior? Using a parking lot without paying for the ticket.” Here we find that only the general preference of following rules and also what one thinks about how often other individuals violate the parking rule, significantly influences the evaluation of not following the parking rule.

pay for the parking ticket, we find that general preference of following rules and how bad one perceives not to pay for the ticket significantly influence the decision to pay for the parking ticket. We display the regression analysis for the parking disk in the appendix.

Table 4: Self-reported frequency of parking rule violations (ticket)

	(1)	(2)	(3)
rule following	-0.266*** (0.048)	-0.145*** (0.049)	-0.106** (0.047)
park. rule perception		-0.855*** (0.137)	-0.757*** (0.129)
sanction prob.	0.405* (0.234)	0.272 (0.216)	0.393* (0.217)
exp. sanction	-0.016* (0.010)	-0.011 (0.009)	-0.010 (0.009)
Constant	3.796*** (0.461)	4.689*** (0.447)	2.923*** (0.621)
Demographics	No	No	Yes
Observations	210	208	195
F Statistic	11.482	19.919	14.862
R ²	0.143	0.282	0.390
Adjusted R ²	0.131	0.268	0.364

Notes: Standard errors in parentheses. OLS regression with the dependent variable being the answer to the question “Thinking back to the last year, how often did you use a parking place without paying for the parking ticket”. The answer consists of a 5 point Likert scale ranging from “never”, to “more than 5 times”.

6 Conclusion

Our study is a first attempt to bring the rule following task, developed by Kimbrough and Vostroknutov (2016) to the field. We check whether the compliance with the law is associated with prosocial behavior. We find supporting evidence that individuals who comply with the law are more likely to engage in prosocial behavior by answering the

surveys.

The regression results, however, give only little evidence that the decision to answer the survey is driven by general preferences of following rules. The variable which measures a general tendency to follow rules, does not significantly influence the decision to comply with the parking rules. It rather seems that how bad individuals evaluate not following the parking rule seem to be the main driver to comply with the parking rule. Especially this question might be subject to reverse causality, since individuals might try to ex-post justify their behavior. However, experimental findings of Erkut et al (2015) and D’Adda et al (2016) suggest that norms are not subject to ex post justifications.⁶ Hence, we can not conclude that it are indeed preferences of following rules which lead to parking rule followers’ higher response rates, but rather give some suggestive evidence. Further evidence is needed to better identify what drives the decision of individuals to follow the law and hence what drives them to behave prosocially. Another interesting finding is that economic factors like the sanction probability of the expected sanction level does not seem to influence the decision to comply to the parking rule. This is also in line with general findings that individuals often have an unclear expectation over the consequences of not following the law (for an overview, see Chalfrin and McCrary 2017). Again, our study gives some suggestive evidence, that preferences of following rules seem to play some role, when individuals decide about whether to violate the law, but still further evidence is needed to get a clearer picture.

⁶Rustichini and Villeval (2014) find that in the dictator game, dictators rate more selfish behavior as more fair, after playing the game, compared to the situation when they were not aware that they would play the game. However, they do not use the Krupka and Weber (2013) task.

Appendix

Table A.1: Compliance with the parking rule, self-reported data specification

	(1)	(2)	(3)	(4)
rule following	0.169*** (0.054)	0.064 (0.062)	0.087 (0.069)	0.062 (0.078)
park. rule perception		0.883*** (0.244)	0.796*** (0.253)	0.955*** (0.294)
sanction prob.	0.459 (0.588)	0.792 (0.611)	1.101 (0.780)	1.494* (0.903)
exp. sanction	0.012 (0.011)	0.012 (0.012)	0.046** (0.023)	0.056** (0.026)
Constant	-0.498 (0.522)	-1.573** (0.639)	-2.504** (1.169)	-2.336* (1.324)
Demographics	No	No	Yes	Yes
Parking controls	No	No	No	Yes
Observations	190	187	175	165
Log Likelihood	-68.675	-60.710	-49.639	-43.195
Akaike Inf. Crit.	145.350	131.421	117.278	110.391

Notes: Standard errors in parentheses. Probit regression with the dependent variable being the probability that the returned questionnaire was marked as a parking rule follower. Self-reported data specification.

Table A.2: Compliance with the parking rule, consistent data specification

	(1)	(2)	(3)	(4)
rule following	0.138** (0.065)	0.018 (0.076)	0.055 (0.086)	-0.018 (0.107)
park. rule perception		1.005*** (0.302)	1.003*** (0.328)	1.073*** (0.394)
sanction prob.	0.003 (0.647)	0.397 (0.675)	1.124 (0.904)	2.621** (1.284)
exp. sanction	0.032 (0.020)	0.031 (0.022)	0.049* (0.028)	0.055* (0.031)
Constant	-0.349 (0.677)	-1.497* (0.829)	-2.483* (1.386)	-1.363 (1.620)
Demographics	No	No	Yes	Yes
Parking controls	No	No	No	Yes
Observations	172	169	160	150
Log Likelihood	-49.502	-42.484	-33.497	-27.773
Akaike Inf. Crit.	107.003	94.967	84.994	79.546

Notes: Standard errors in parentheses. Probit regression with the dependent variable being the probability that the returned questionnaire was marked as a parking rule follower. Consistent data specification.

Table A.3: Answer to the question ‘How bad do you perceive following behavior? Using a parking lot without paying for the ticket’.

	observed	self-reported	consistent
rule following	0.121*** (0.026)	0.121*** (0.026)	0.126*** (0.028)
exp. behavior others	-0.002** (0.001)	-0.002** (0.001)	-0.002** (0.001)
risk taking	-0.023 (0.024)	-0.024 (0.024)	-0.035 (0.026)
age	0.001 (0.003)	0.001 (0.003)	0.001 (0.003)
gender	-0.008 (0.098)	-0.011 (0.099)	0.003 (0.106)
education	-0.038 (0.043)	-0.040 (0.043)	-0.048 (0.045)
Constant	1.562*** (0.346)	1.543*** (0.348)	1.587*** (0.374)
Observations	203	200	182
F Statistic	6.856	7.01	6.791
R ²	0.173	0.179	0.189
Adjusted R ²	0.148	0.153	0.161

Notes: Standard errors in parentheses. OLS regression with the dependent variable being the answer to the question “How bad do you perceive following behavior? Using a parking lot without paying for the ticket”. Exp. behavior others gives the answer to the question: “Please guess how many of 100 car drivers did behavior as follows last year? Using a parking place without paying for the parking ticket.”

Table A.4: Self-reported frequency of parking rule violations (parking disc)

	(1)	(2)	(3)
rule following	-0.125** (0.048)	-0.085* (0.051)	-0.075 (0.051)
park. rule perception		-0.414** (0.163)	-0.450*** (0.162)
sanction prob.	-0.409 (0.320)	-0.369 (0.318)	-0.357 (0.323)
exp. sanction	-0.006 (0.012)	-0.006 (0.012)	-0.014 (0.012)
Constant	2.324*** (0.458)	2.792*** (0.490)	2.121*** (0.686)
Demographics	No	No	Yes
Observations	198	196	185
F Statistic	2.891	3.825	4.365
R ²	0.043	0.074	0.166
Adjusted R ²	0.028	0.055	0.128

Notes: Standard errors in parentheses. OLS regression with the dependent variable being the answer to the question “Thinking back to the last year, how often did you use a parking place without displaying the parking disk, although it was described for this parking place”.

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