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Comment on "The Spreading of Disorder"

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Abstract

Keizer et al. (2008) explore disorderly settings linked to a process of spreading norm violation. The results show that if norm violating behavior becomes more common, it negatively affects compliance in other areas. This comment addresses problematic areas in their studies and provides new empirical evidence of a cross-norm inhibition effect that deals with such criticism.

1. Introduction

Keizer, Lindenberg and Steg (2008) conduct six interesting field experiments and report that their results provide evidence of the broken windows theory. Such an analysis is highly relevant as the (broken windows) theory is both controversial and lacking empirical support. *Keizer et al.*'s key aim was to conceptualize a disorderly setting in such a way that it is linked to a process of spreading norm violation. The strength of the study is the exploration of cross-norm inhibition effects in a controlled field experimental environment. Their results show that if norm violating behavior becomes more common, it negatively affects compliance in other areas. Nevertheless, this comment paper discusses several shortcomings or limitations and provides new empirical evidence that deals with these problems.

2. Comments

Keizer et al. (2008) observe the behavior of individuals in a "low cost" environment. The disorder was created through graffiti, a space that was littered, four bicycles locked to the fence where it is prohibited to lock bicycles, four unreturned shopping carts standing around in disarray, or illegally setting off firecrackers within hearing distance. The activities observed were littering, stepping through the gap in a fence (prohibited) or stealing an envelope containing 5 euros. However, one wonders about potential cross-norm inhibition effects in more serious situations such as cheating on taxes, bribing, speeding, or driving under the influence of alcohol where monetary incentives to evade a rule or the externalities to others can be seen as more severe. Thus, I report empirical evidence not only for throwing away litter in a public place, but also for cheating on tax if one has the chance, claiming state benefits to which one is not entitled, paying cash for services to avoid taxes, speeding over the limit in built-up areas, driving under the influence of alcohol, avoiding a fare on public transport, lying in one's own interest, and accepting a bribe in the course of duties.

Keizer et al.'s (2008) study assumes that individuals in their daily routine are *aware* of the disorder or order situation that was created. However, this is a strong assumption. Routines may allow subjects to get distracted by other things. Thus, even if the arrangements in all experiments were such that is was almost impossible for people not to notice the violations of such an injunctive norm, researchers were not able to *directly* control individuals' perceptions. Thus, I show empirical evidence where people were directly asked how many of their compatriots are perceived to be non-compliant using a scale from 1 (almost none) to 4 (almost all).

The strength of Keizer et al.'s (2008) field experiments is the handling of the causality problem comparing a control group (no disorder) with a treatment group (disorder). However, as they only observe and explore individuals' behavior, their analysis is rather descriptive, providing information about raw effects but not partial effects. They are not able to control for socio-demographic or socio-economic factors, except for gender, however they state "gender was coded at first but turned out not to have any impact on the results and was dropped in later experiments" (p. 1683). Nevertheless, the empirical literature on rule compliance has clearly shown that socio-demographic and socio-economic factors matter (see, e.g., Torgler 2007, Tittle 1980, Gottfredson and Hirschi 1990). Multiple regressions would have been useful to disentangle the cross-norm inhibition effects from other potential factors. Furthermore, in

several of their field experiments, non-compliance was related with deterrence (probability of a fine). Thus, one should control for risk attitudes. In addition, empirical studies have shown a negative correlation between religiosity and non-compliance (see Hull 2000, Hirschi and Stark 1969, Lipford, McCormick and Tollison 1993, Torgler 2006). I therefore present empirical evidence using a multivariate analysis that controls for age, gender, formal education (age of completion), informal education (political interest), risk aversion (preference for job safety), marital and employment status, and religiosity (frequency of attendance at religious services).

The *N* in Keizer et al. (2008) is relatively small (between 44 and 77 observations per treatment). It might be large enough to see statistical differences but field experiments are now often conducted with a larger sample size. Moreover, the compliance literature reports that individuals' heterogeneity triggers the overall behavior (Slemrod 1992). Without controlling for it one may expect noisy data. Thus, I will work with a large database containing between 16 000 and 35 000 subjects. Moreover, Keizer et al.'s (2008) field experiments were conducted in Groningen. One wonders whether we would observe similar effects in other countries and cultures as it has been demonstrated that cultural and institutional environments are important for compliance (Torgler and Schneider 2007). Thus, I use data from 31 countries, namely: Germany, Austria, Belgium, Denmark, Finland, France, Great Britain, Iceland, Ireland, Italy, Malta, Netherlands, North Ireland, Portugal, Spain, Sweden, Belarus, Bulgaria, Croatia, Czech Republic, Estonia, Greece, Hungary, Latvia, Lithuania, Poland, Romania, Russia, Slovak Republic, Turkey, and Ukraine.

3. Data

I exploit recent data from the European Values Survey (EVS). Interviews are face-to-face and those interviewed are adult citizens aged 18 years and older. The average response rate is around 60%. As dependent variables I measure individuals' willingness (justifiability) to comply with social norms in nine cases working with a four-point scale (0 to 3, 3=never justified). Asking an individual view on rule evasion is different from asking a person whether she or he has cheated. The actual cheating decision is affected greatly by the probability of being caught which is a function of a country's law enforcement system, not of an individual's attitudes (Guiso, Sapienza and Zingales 2003). Thus, looking at attitudes might be a good way of identifying cross-norm inhibition effects. Despite the discussed advantages I am aware of the difficulty in interpreting the observed correlations as causal effects. This is a major disadvantage compared to Keizer et al.'s (2008) field experiments.

4. Model and Results

A weighted ordered probit model is used in order to analyze the ranking information of the scaled dependent variable and to obtain a reflection of the national distribution. In addition, I also cluster the standard errors by up to 500 official local regions based on the Eurostat NUTS level 2 classification. Such clustering will pick up any regional characteristics that are not controlled in the specification. Similarly, I have also added country dummy variables to control for unobserved country differences. The results of the 81 (9x9) regressions are summarized in Table 1. In line with Keizer et al. (2008) I also observe cross-norm inhibition effects. However, the severity and dimension

matters. Some norm deviances are more strongly affected by the perceived disorder conditions. Strong cross-norm inhibition effects are found for lying, avoiding a fare, speeding and cheating on taxes. On the other hand, lower effects are generated through perceived driving under alcohol or littering. In general, the strongest effects are found for identical or similar norm-deviances.

In summary, my contention is that the published evidence does support cross-norm inhibition effects. However, the effects are strongly driven by both the explored context and the disorder conditions.

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Table I: Within-Norm and Cross-Norm Inhibition Effect

Dependent Variable: Justifiability	L	T	GB	PC	S	DA	F	LY	B
Key Independent Variable: Perceptions about the behavior of others									
Littering (L)	**-0.079***	-0.008	0.001	-0.026*	-0.021	-0.018	-0.075***	-0.074***	-0.029**
	-5.03	*-0.63*	*0.08*	*-1.94*	*-1.44*	*-0.79*	*-3.66*	*-5.56*	*-2.13*
Cheating on tax (T)	-0.024	**-0.243***	-0.053***	-0.197***	-0.125***	-0.086***	-0.131***	-0.137***	-0.117***
	-1.32	***-14.34***	*-3.63*	*-13.93*	*-7.33*	*-4.46*	*-5.75*	*-8.97*	*-6.96*
Claiming gov. benefit. (GB)	-0.012	-0.086***	**-0.089***	-0.041***	-0.047***	-0.041**	-0.081***	-0.033**	-0.074***
	-0.58	*-6.07*	***-5.24***	*-3.21*	*-2.67*	*-2.1*	*-4.3*	*-2.33*	*-4.25*
Paying cash to avoid taxes (PC)	-0.031	-0.144***	-0.020	**-0.249***	-0.095***	-0.039**	-0.114***	-0.103***	-0.082***
	-1.62	*-8.64*	*-1.17*	***-14.33***	*-6.05*	*-2.27*	*-4.9*	*-6.4*	*-4.41*
Speeding in built-up areas (S)	-0.033*	-0.043***	-0.010	-0.062***	**-0.200***	-0.058***	-0.094***	-0.079***	-0.015
	-1.94	*-2.91*	*-0.54*	*-3.93*	***-9.95***	*-2.87*	*-4.71*	*-5.18*	*-0.84*
Driving under alcohol (DA)	-0.001	-0.002	-0.016	0.017	0.016	**-0.108***	-0.023	-0.018	-0.049***
	-0.06	*-0.1*	*-0.85*	*1.13*	*0.97*	***-4.95***	*-1.03*	*-1.12*	*-2.84*
Avoid a fare (F)	-0.110***	-0.073***	-0.059***	-0.053***	-0.079***	-0.113***	**-0.266***	-0.088***	-0.105***
	-4.38	*-3.69*	*-3.08*	*-2.24*	*-3.75*	*-4.73*	***-12.92***	*-4.51*	*-4.6*
Lying (LY)	-0.136***	-0.153***	-0.056***	-0.179***	-0.123***	-0.122***	-0.205***	**-0.360***	-0.173***
	-5.99	*-7.45*	*-3.06*	*-8.13*	*-6.98*	*-5.52*	*-8.97*	***-18.14***	*-8.73*
Bribing (B)	0.031	-0.066***	-0.021	-0.051**	-0.008	-0.053**	-0.050*	-0.046*	**-0.175***
	1.11	*-3.12*	*-1.1*	*-2.46*	*-0.4*	*-2.26*	*-1.92*	*-1.93*	***-10.11***

Notes: Summary of 81 regressions. As control variable we used age, gender, formal and informal education, risk aversion, marital status, employment status, religiosity, country dummy variables. The table reports coefficient and z-values. The z-values are in italics. Significance levels are: * $0.05 < p < 0.10$, ** $0.01 < p < 0.05$, *** $p < 0.01$. Standard errors adjustments through clustering over European regions.