**Preprints of the
Max Planck Institute for
Research on Collective Goods
Bonn 2017/9**

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May 2017

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Pieter Desmet / Christoph Engel

Abstract

Experimental participants are more likely to follow an arbitrary rule the more of their peers do so as well. The difference between unconditional and conditional rule following is most pronounced for individuals who follow few rules unconditionally.

JEL: A13, C91, D03, D63, K42

Keywords: conditional rule following, deontological motives, conditional cooperation, experiment

* Helpful comments by Claudia Cerrone and Alexander Schneeberger on an earlier version are gratefully acknowledged.
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1. Introduction

Most people are conditional cooperators (Fischbacher, Gächter et al. 2001, Fischbacher and Gächter 2010). They only cooperate if they are sufficiently optimistic that others cooperate as well. Conditional cooperation is an expression of (utilitarian) social preferences. Many individuals are also sensitive to deontological concerns, and even follow arbitrary rules (Kimbrough and Vostroknutov 2016). But are they more willing to follow such rules if others do so as well?

2. Hypothesis

Individual i's utility is defined by

$u_i = \pi_i(a_i) - \gamma_i \max\left\{\frac{a_i - \tilde{a}}{\tilde{a}}, 0\right\}$	(1)

, where $\frac{\partial \pi_i}{a_i}, \gamma_i, a_i, \tilde{a} \in \mathbb{R}^+$. This creates a conflict between profit π_i, and living up to norm $\tilde{a}$. If the individual breaks the norm ($a_i > \tilde{a}$), she suffers disutility γ_i. She chooses $a_i = \tilde{a}$ if $\frac{\gamma_i}{\tilde{a}} > \frac{\partial \pi_i}{\partial a_i}$. The more demanding the rule (the smaller $\tilde{a}$), the more the individual is likely to break the rule. If the individual is a conditional rule follower, $\gamma_i = f(\sum_j a_j)$, $j \neq i$, $\frac{\partial f}{\partial a_j} > 0$. This leads to our

> **Hypothesis:** The more members of the relevant community are known to follow an arbitrary rule, the more an individual is willing to follow the rule herself.

3. Design

Individuals earn a piece rate of .1 € for positioning anyone of 48 sliders to the middle of a line. There is an announced rule not to move more than x sliders. However the instructions stress that the rule will not be enforced. Using the strategy method (Selten 1967), x equals 5, 11, 23, 32 and 41.[1] Participants play the game twice. In the *independent* design, they decide on their own. In the *dependent* design, participants are randomly matched to groups of 6. First all participants make another *unconditional* choice, for each rule. They then decide *conditional* on the number of group members who follow the rule. After the experiment roles and rules are randomly determined. The independent and the dependent designs are paid out. We counterbalance order between both designs. We elicit beliefs about *independent* choices, measure social value orientation (Liebrand and McClintock 1988), risk preferences (Holt and Laury 2002), the Big5 (Rammstedt and John 2007), the portraits value questionnaire (Schmidt, Bamberg et al. 2007), and ask for demographics.

1 Choices conditional on all 5 rules are elicited on the same screen.

120 students of Hamburg University participated, mean age 25.69, 40.83% female. They on average earned 16.00€ (16.88$).

4. Results

In the *independent* design, the more the rule is demanding, the less it is obeyed, as can be seen in Table 1.[2] However 67.50% participants decide to move 48 sliders, whatever the rule. Only 15% follow all 5 rules. This is why mean choices are high on all problems.

rule	fraction obey	mean choice
5	16.67%	37.43
11	16.67%	38.75
23	21.67%	40.46
32	27.50%	41.98
41	31.67%	43.99

Table 1
Descriptives for Independent Choices

If they know that no other member of their group of 6 follows the rule, conditional choices closely mirror unconditional choices, see Figure 1. Yet descriptively, already a single other rule follower makes a difference. With rule5, the probability to follow the rule increases from 17.5% to 19.17%, with rule41 from 36.67% to 39.17%. If all others follow the rule, 24.17% follow rule5, and 53.33% follow rule41.

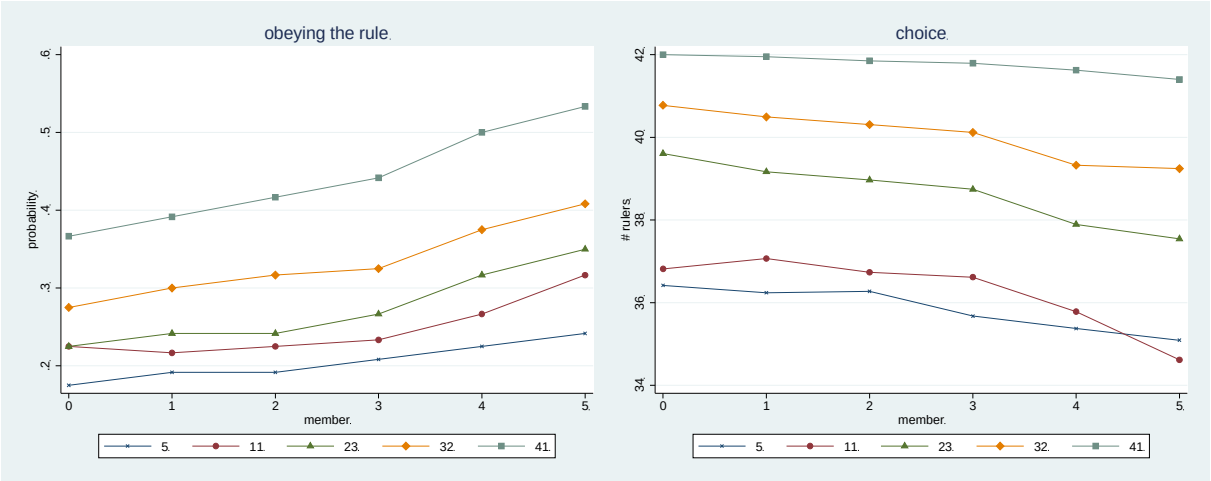

Figure 1
Descriptives for Conditional Choices

2 Order does not have a significant effect, except for the unconditional choice as a group member. If it is elicited as the second choice, it is lower. To be on the safe side, for all comparisons we use the choice when acting alone. Here we do not find an order effect.

The regressions in Table 2 explain the difference between the unconditional and the respective conditional choice.[3] Remarkably, having the possibility to condition on the choices of others never hurts. Even if participants know that no other group member follows the rule, they do not become less likely to follow the rule (the constants are insignificant). If a majority (3 or more members) follow the rule, this significantly influences their behavior. If they know that all others obey, they are 11.7% more likely to also obey, compared with their unconditional choice.

	obey	choice
rule11	.042**	-.899*
	(.014)	(.357)
rule23	.018	-.226
	(.014)	(.357)
rule32	.019	-.361
	(.014)	(.357)
rule41	.086***	-.643^{+}
	(.014)	(.357)
1 member	.015	-.14
	(.015)	(.391)
2 members	.025	-.297
	(.015)	(.391)
3 members	.042**	-.535
	(.015)	(.391)
4 members	.083***	-1.123**
	(.015)	(.391)
5 members	.117***	-1.545***
	(.015)	(.391)
cons	-.008	-.975
	(.030)	(.856)
N obs	3,600	3,600
N uid	120	120

Table 2
Effect of Possibility to Condition on Rule Following of Others
linear random effects, Hausman test insignificant on both models
dv: conditional choice – unconditional choice on independent problem with same rule
*** p < .001, ** p < .01, * p < .05, $^{+}$ p < .1

This gives us our

> **Result**: Individuals are more likely to follow a costly rule when they know that their peers do so as well.

The left panel of Figure 2 provides further support: even if (in the *independent* problems) they have no hard information, participants are closely guided by their beliefs about the propensity of others to follow the rule. The right panel shows that the effect of informing about the

3 Since this is the cleanest test, we compare with the independent choices. Results look similar if instead we compare with the unconditional choice as a group member.

choices of others is strongest for participants who have been following few rules when such information was missing.

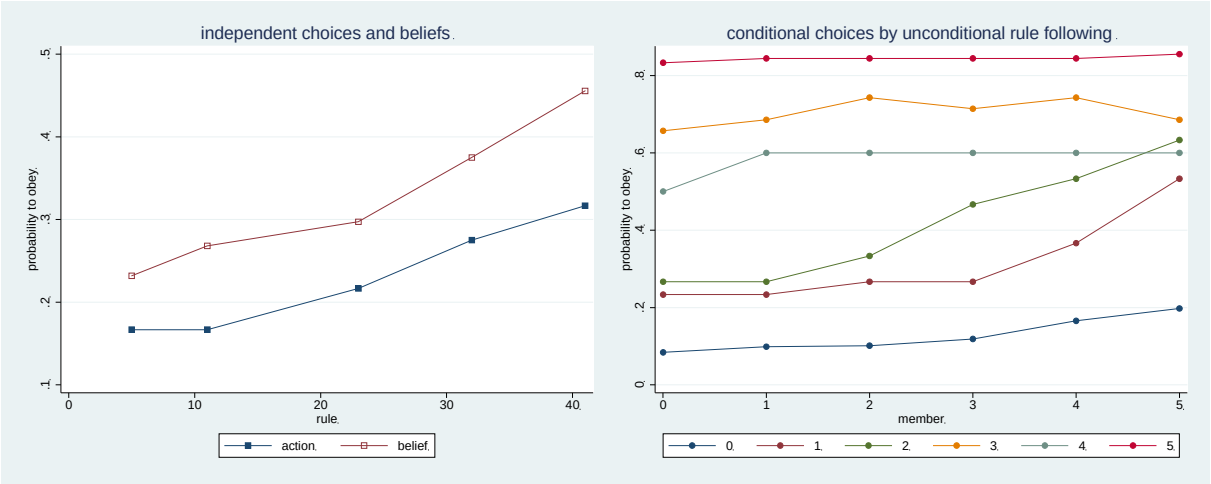

Figure 2
Explanations
left panel: independent choices, dv: mean fraction that obeys
right panel: conditional choices, by number of members who follow rule (x-axis) and by number of rules this participant had followed in independent choice

The regressions in Table 3 provide a statistical test.[4] The more rules participants follow unconditionally, the more they also do when they can condition on the rule following of others. The less demanding the rule, the more it is obeyed. This connection is the more pronounced the more rules the participant follows unconditionally (interaction). The more others follow the rule, the more it is obeyed. The critical new information is the negative interaction between the number of rules followed unconditionally and the number of rule followers: conditioning matters the more, the less a participant is following rules unconditionally.

We find a small additional effect of social value orientation; apparently participants see rule following as socially desirable. By contrast the effect of risk aversion is insignificant. Participants are not concerned about the risk of being seen as rule breakers.

4 Since we use the number of problems on which a participant had obeyed in the independent choices for explanation, the difference between conditional and unconditional choices would be endogenous.

	obey	choice
# of problems on which participant obeyed in independent choice	4.017*** (.368)	-14.102*** (1.290)
rule	.128*** (.012)	.106*** (.027)
# problems * rule	.025* (.010)	.104*** (.009)
# members who obey	.812*** (.085)	-1.783*** (.210)
# problems * # members	-.120** (.044)	.359*** (.069)
social value orientation score	.078* (.035)	-.237^{+} (.124)
risk aversion score	.495 (.933)	-1.693 (3.482)
cons	-15.958*** (1.125)	78.857*** (3.220)
N obs	3,360	3,360
N uid	112	112

Table 3
Explanations
obey: random effects logit; choice: random effects Tobit, upper limit 48
Hausman test insignificant on linear mirror models for both models
problems: # of problems on which this participant obeyed
members: # of members who obey on this problem (from strategy method)
*** p < .001, ** p < .01, * p < .05, $^{+}$ p < .1

5. Conclusion

We show that individuals are more likely to follow an arbitrary rule the more of their peers are doing so as well. Deontological rule following is conditional. Whereas these results mirror findings on utilitarian conditional cooperation, we observe some important differences. For (utilitarian) social preferences, social information is a double-edged sword. It helps if conditionally cooperative individuals learn that their peers are cooperative; they are more likely to cooperate themselves. Yet if, instead, they learn that their peers act selfishly, they react by withdrawing contributions to the common good themselves as they do not want to be the sucker. By contrast, in our sample social information never hurts. It even increases rule-following when the conflict with profit is not too pronounced, and particularly for those who, without such information, are unlikely to follow the rule.

Our results are of high practical relevance. The law should not only promulgate the rule, but also showcase law abiding (Bentham 1789).

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