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When Rules Really Make a Difference: The Effect of Cooperation Rules and Self-Sacrificing Leadership on Moral Norms in Social Dilemmas

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ABSTRACT. If self-interested behavior conflicts with the collective welfare, rules of cooperation are often installed to prevent egoistic behavior. We hypothesized that installing such rules may instigate personal moral norms of cooperation, but that they fail in doing so when installed by a leader who is self-interested rather than self-sacrificing. Three studies confirmed this and also showed that, consequently, only self-sacrificing leaders were able to install rules that increase cooperation without the need for a perfectly operating monitoring system.

KEY WORDS: cooperation, leadership, leader self-sacrifice, moral norms, rules, social dilemma's, standards

Introduction

Rules are often installed to foster the collective welfare. For example, a town council may install the rule that no cars are allowed in the town center or an organization may install the rule that employees should not use company resources for personal purposes. The question is whether rules actually increase awareness that the requested behavior (e.g., taking public transport and refraining from using the company printer for private use) is the *morally* right thing to do. Increasing moral awareness is important because it determines if rules also evoke cooperation when there is no monitoring system at work. Installing rules may turn out counter effective if monitoring people's behavior is not possible (c.f., Mulder et al., 2006) or if sanctions are too weak (Tenbrunsel and Messick, 1999). To ensure cooperation even when enforcement is lacking, rules must do more than just "steer behavior." They need to actually shape personal norms with regard to cooperation. In this article, we test if the installation of a rule evokes a moral norm with regard to choosing for the collective interest, and whether this depends on the type of authority who installs the rule.

Rules and norms

Personal norms have been shown to strongly affect cooperation. They determine whether people keep to agreements of cooperation (Kerr et al., 1997) and increase tax compliance (Bosco and Mittone, 1997; Hofmann et al., 2008; Schwartz and Orleans, 1969; Wenzel, 2004a, 2005). Personal norms decrease the need for a sanction to deter rule-breaking (Wenzel, 2004b). Therefore, if installing a rule succeeds in inducing a personal moral norm by convincing people that cooperation is the "morally right" thing to do, people will cooperate, even when their behavior is not monitored. But is a rule in itself able to increase personal moral norms?

There is evidence that rules and sanctions may influence moral norms in a *negative* way. First, the very act of installing rules may implement a behavioral standard that becomes a goal in itself (e.g., to fish as much as catch quota allows) instead of motivating people to achieve the goal behind the standard (trying to preserve a population of fish) (Tenbrunsel et al., 1997, 2000). Second, sanctions may evoke a business frame in the sense that people mainly base their behavioral decision on a cost–benefit analysis rather than on what is considered the morally right thing to do (Gneezy and Rustichini,

2000; Tenbrunsel and Messick, 1999). Especially, when detection probabilities are small, a cost–benefit analysis may result in non-compliance (Tenbrunsel and Messick, 1999). Hence, a culture of installing rules, monitoring, and sanctioning people's behavior may, in the long run, evoke an extrinsic motivation to cooperate and may induce people to search for ways in which the rules allow them to pursue their self-interest (see also Prendergast, 1999).

However, these negative effects of rules and sanctions are not inevitable. Under the right conditions, rules and sanctions may actually instigate moral concerns (Mulder, 2009). For example, the extent to which a sanction affects moral concerns depends on the size of a sanction (Mulder et al., 2009) and on whether the incentive is a punishment or a reward (Mulder, 2008). As for rules, they may have a positive effect on the development of personal moral norms because for one, rules and laws have the symbolic value of showing what behaviors are disapproved of and thus express what is considered as morally wrong (McAdams, 2000) and that rule violators are morally condemned (Cooter, 1998). Second, a cooperation rule may also increase awareness of the fact that self-benefiting behavior actually conflicts with the group interest and thus may show people that cooperation is important for the welfare of the collective. If so, the rules prescribing cooperation will not only increase cooperation because they force people's choices, but because they convince people that cooperation is morally correct.

Hence, rules may either obscure or highlight the moral aspect of cooperation. One of the factors that may determine whether a rule is effective in instigating a personal norm, and thus in being an inspirational measure, is the role of the leader[1] who installs the rule. We argue that, for a rule to instigate a moral norm of cooperation, the authority who installs the rule should be perceived as benefiting the collective interest rather than pursuing his or her self-interest.

Self-benefiting vs. self-sacrificing leaders

When a group fails in fostering the collective welfare, a leader may be appointed (Messick et al., 1983). However, authorities do not always favor the group. Keltner et al. (2006) have argued that powerful people tend to act in a self-interested fashion. Indeed, having the role of a leader can trigger feelings of being privileged and entitled (De Cremer and Van Dijk, 2005, 2008) resulting in increased harvesting from a common resource (De Cremer and Van Dijk, 2005; Samuelson and Allison, 1994; Van Dijk and De Cremer, 2006). However, leaders who are perceived to be self-interested can expect little cooperation from followers. Being self-sacrificing rather than self-benefiting promotes cooperation (De Cremer, 2002; De Cremer and van Knippenberg, 2005; De Cremer et al., 2009; Yorges et al., 1999).

Success in promoting cooperation strongly depends on whether a leader shifts followers' focus from self-interest to collective interests (Bass, 1985, 2007; Shamir et al., 1993). This notion is of vital importance for the effective implementation of cooperation rules. The conviction that cooperation is important for the welfare of the collective may be more likely to be transferred when the rule is installed by authorities who are themselves perceived to be concerned with the collective welfare. Being a self-sacrificing rather than a self-benefiting leader contributes to this perception. Ideas communicated by self-sacrificing leaders are more strongly attributed to moral convictions and sincere beliefs (Yorges et al., 1999). Similarly, a rule installed by a self-sacrificing leader will be more likely to function as a sincere appeal for the goal of furthering group interests. On the other hand, when a message is in line with the sender's self-interest, the validity of the message is reduced (Petty and Wegener, 1998). Thus, a rule installed by a self-benefiting leader will make it less likely that people believe that this leader installs the rule in favor of the collective welfare.

Hence, rules may be interpreted in the light of the characteristics of the leader who installs them and will be more successful in shifting followers' focus from self-interest to collective interests when the leader who installs the rule is perceived as self-sacrificing rather than self-benefiting. We therefore hypothesize that the installation of a rule will increase a moral norm of cooperation, but that this effect is more pronounced for self-sacrificing leaders than for self-benefiting leaders.

The litmus test of the formation of a moral norm is whether people also cooperate when they know their behavior is *not* monitored. After all, if behavior

is monitored, the motivation to comply is strongly influenced by the anticipated sanctioning of rule violations. Under these circumstances, rule implementation will invariably boost cooperation, irrespective of the leader who installs the rule. Hence, conditions with supervision are little insightful for revealing the behavioral impact of moral norms. If behavior is *not* monitored, however, only a norm-instigating rule, that is a rule installed by a self-sacrificing leader, will increase cooperation. Therefore, we expect the behavioral consequences of the effects of rules and leaders on moral norms to surface in a situation in which people do *not* feel monitored.

Also, we expect that the instigation of moral norms will mediate the effect of rule on cooperation, but only when the rule is installed by a self-sacrificing leader. After all, a rule installed by a self-sacrificing leader will instigate a moral norm and, as a result, cooperation, whereas a rule installed by a self-benefitting leader will fail to instigate a moral norm in the first place. Hence, we expected a moderated mediation as we predicted the mediation of moral norms to be moderated by leader self-sacrifice.

Our predictions were tested in three studies. The first two were scenario studies and the third a laboratory experiment with a real behavioral decision. In Study 1, there was no explicit monitoring of behavior and in Study 2 and 3, this monitoring was manipulated.

Study 1

Method

Design and participants

Participants were 135 visitors (67 male, 66 female, 2 unknown; M_{age} = 36 years, SD_{age} = 16.16) of the local public library, who voluntarily filled out a paper-and-pencil questionnaire. They were randomly assigned to one of the four conditions of our 2 (leader: self-sacrificing vs. self-benefiting) × 2 (rule: absent vs. present) between-subject design experiment.

Procedure

Participants were asked to imagine that they lived in a village governed by either a self-benefiting leader or by a self-sacrificing leader. The village inhabitants depended on the catch of catfish. Participants were asked to imagine they caught 14 kilos a month. In the rule conditions, the leader then installed the rule that inhabitants were allowed to catch no more than 10 kilos a month per inhabitant (for the full scenario, see Appendix A).

Participants answered a number of questions after which they were thanked and handed in the questionnaire.

Dependent measures

Moral norm. The extent to which participants judged catching more than 10 kilos of fish as morally wrong was measured by five items (α = 0.81) on a seven-point answering scale (*1* = completely disagree, 7 = completely agree). All items started with ''Catching more than 10 kilo's of fish …'' and finished with ''….is not done,'' ''…I morally disapprove of,'' ''…is something I do not object to'' (reverse coded), ''…is something I would feel guilty about,'' and ''…is something I would not feel ashamed about'' (reverse coded).

Cooperation. Participants indicated their cooperative intentions by stating how many kilos of fish they planned to catch. Four participants were outliers as they scored more than three times the standard deviation above or below the mean, and were removed.

Manipulation checks. We checked the rule manipulation by the statement ''In the described situation there was a rule about how much fish each inhabitant was allowed to catch.'' The leader manipulation was checked by the statement ''In the described situation the leader was most concerned with….'' which was followed by a seven-point answering scale (*1* = the interest of the village, 7 = his self-interest).

Results

Manipulation checks

Two 2 (leader) × 2 (rule) ANOVAS confirmed that our manipulations were successful. There was only a main effect of rule on perceived rule installment, $F(1,127) = 105.41$, $p < 0.001$, $\eta^2 = 0.46$. In the rule condition participants indicated to a greater extent that there was a rule on how much fish inhabitants were allowed to catch (M = 6.08, SD = 1.16) than in the no rule condition (M = 3.09, SD = 2.02). There was only an effect of

leader on perceived leadership concerns, $F(1,127) = 36.72$, $p < 0.001$, $\eta^2 = 0.24$. Participants indicated that the leader was more concerned with his self-interest in the self-benefiting leader condition ($M = 5.02$, SD = 1.69) than in the self-sacrificing leader condition ($M = 3.05$, SD = 2.00).

Moral norm

We hypothesized that the installation of a rule would increase a moral norm, but less strongly in the self-sacrificing leader condition. We performed 2 (leader) × 2 (rule) ANOVA on the extent to which participants judged catching more than 10 kilos of fish to be morally wrong. There was a significant main effect of rule, $F(1,120) = 3.79$, $p = 0.05$, $\eta^2 = 0.03$. Catching more than 10 kilos of fish was judged as more morally wrong in the rule condition ($M = 4.64$, SD = 1.24) than in the no rule condition ($M = 4.18$, SD = 1.31). This main effect was qualified by a Rule × Leader interaction, $F(1,120) = 12.50$, $p < 0.001$, $\eta^2 = 0.09$ (see first-half of Table I). Installing a rule increased the moral norm only when a self-sacrificing leader installed the rule ($p < 0.001$) and not when a self-benefiting leader installed the rule, $p = 0.27$.

Cooperation

The same results were obtained for cooperation intentions. A 2 (leader) × 2 (rule) ANOVA was performed on how many fish participants planned to catch (see second-half of Table I). This showed a main effect of rule, $F(1,122) = 13.09$, $p < 0.001$, $\eta^2 = 0.10$. In the rule condition participants planned to catch less kilos catfish ($M = 11.73$, SD = 2.78) than in the no rule condition ($M = 13.60$, SD = 3.08). This main effect was qualified by a Rule × Leader interaction, $F(1, 122) = 4.58$, $p < 0.05$, $\eta^2 = 0.04$, showing that the effect of the installation of the rule on restraint was only significantly larger in the self-sacrificing leader condition ($p < 0.001$) and not in the self-benefiting leader condition, $p = 0.30$.

TABLE I

Moral norm regarding fish catch restriction and planned fish catch (means and SD's) as a function of leader and rule, Study 1

	Self-sacrificing leader	Self-benefiting leader
Moral norm		
No rule	3.77^{a} (1.20)	4.62^{b} (1.31)
Rule	4.98^{c} (1.17)	4.27^{b} (1.22)
Planned fish catch		
No rule	13.90^{a} (3.47)	13.28^{a} (2.62)
Rule	10.94^{b} (2.27)	12.52^{a} (3.05)

Note: Within rows and columns, cells that do not share a letter in the superscript differ significantly, pairwise comparisons, $p < 0.05$.

Moderated mediation

Personal moral norms should mediate the impact of installed rules on cooperation only when installed by a self-sacrificing leader. We tested for this moderated mediation as defined by Muller et al. (2005). Leader and rule effects were coded as −1 (self-sacrificing leader and no rule condition, respectively) and 1 (self-benefiting leader and rule condition, respectively). A bootstrap method (Preacher et al., 2007), in which leader was treated as a moderator of the relation between presence of rule and fish catch, showed that the indirect effect of presence of rule on fish catch via moral norms was only significant when the leader was self-sacrificing ($z = -3.00$, $p < 0.005$) but not when the leader was self-benefiting ($z = 0.97$, $p = 0.33$) (see Table II). Hence, support was found for moderated mediation as moral norm mediated the effect of rule on cooperation only for the self-sacrificing leader.

Discussion

A rule increased a moral norm but only when the leader who installed the rule was self-sacrificing rather than self-benefiting. The instigation of this norm by a rule increased intentions for cooperation, but only in the self-sacrificing leader condition. In Study 2, we replicated this finding in a work-related social dilemma. Also, we tested our reasoning that the behavioral consequences of the success or failure of installing a rule in increasing a moral norm would become apparent in situations in which people do not feel monitored. Therefore, in Study 2 (as well as in Study 3), we compared a rule with supervision condition, a rule without supervision condition and a no rule condition. Pertaining to the impact on *moral norms*, we did not expect monitoring to matter: As in

TABLE II

Regression results for conditional indirect effects, Study 1

	Moral norm	Planned fish catch	Planned fish catch
Constant	4.41★★★	12.63★★★	15.48★★★
Rule presence	0.22^{+}	−0.96★★★	−0.85★★
Leader	0.04	0.21	0.24
Rule presence × leader	−0.39★★★	0.53★	0.29
Moral norm			−0.65★★
Moral norm × leader			−0.11

Leader	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Self-sacrificing (−1)	−0.39	0.13	−3.00	0.00
Self-benefiting (1)	0.11	0.11	0.97	0.33

Note: Unstandardized regressions are reported. Bootstrap sample size = 3000.
★★★$p < 0.001$, ★★$p < 0.01$, ★$p < 0.05$, $^{+}p < 0.10$.

Study 1, we predicted that the moral norm would be higher when a rule was installed (irrespective of whether the rule was combined with monitoring) than when there was no rule installed, but to a lesser extent under a self-benefiting leader than under a self-sacrificing leader. However, for *cooperation* intentions we expected the moderating effect of leader type to manifest itself in terms of behavior particularly in the no supervision conditions. After all, if behavior is not monitored, only rule that has increased a moral norm, that is a rule installed by a self-sacrificing leader, will increase cooperation.

As in Study 1, we predicted that leader self-sacrifice would moderate the extent to which moral norms mediated the effect of rules on cooperation. We expected to find this moderated mediation both when testing the effect of rule installation with supervision and when testing the effect of rule installation without supervision. In case of no supervision, we expected the rule to increase cooperation only when it was installed by a self-sacrificing leader, due to its instigation of a moral norm. A rule installed by a self-benefitting leader would not instigate such a moral norm, and thus not instigate cooperation either. In case of supervision, we expected that the moral norm instigated by the rule would still be a reason for people to cooperate, at least when the rule had been installed by a self-sacrificing leader. Of course, because of the monitoring, anticipated sanctions rather than moral norms could be an additional motivator to cooperate, but we expected this to be only the main motivator if the rule had been installed by a self-benefiting leader. All in all, we predicted that cooperation would be driven by moral norms instigated by the rule, whether this rule would be accompanied by monitoring or not, but only if the rule was installed by a self-sacrificing leader.

Study 2

Method

Participants and design

One hundred and twenty-two undergraduate students (50 males and 72 females, M_{age} 21.7 years, SD_{age} = 3.27) were asked to complete a paper-and-pencil study. They were randomly assigned to the six conditions of a 2 (self-sacrificing vs. self-benefiting leader) × 3 (no rule, rule without supervision, rule with supervision) between-subject design.

Procedure

Participants were asked to imagine that they worked in a shop owned by a boss who put his self-interests first (self-benefiting leader condition) or by a boss who put the interests of the employees first

(self-sacrificing leader condition). All participants were asked to imagine that they usually took a 30 min break. In the rule condition it was added that the boss had installed the rule that the break should be 15 min instead. In the rule with monitoring condition participants were further asked to imagine that the boss was supervising that day, whereas in the rule without monitoring condition, participants were asked to imagine that the boss was absent that day (for the full scenario, see Appendix B).

Participants answered several questions. Finally, they were thanked and handed in the questionnaire.

Dependent measures

Moral norm. The moral norm regarding taking shorter breaks was measured by the same five items as in Study 1, adapted to the behavior under investigation "taking a break longer than 15 min." A seven-point response scale (*1* = completely disagree, 7 = completely agree) was used.

Cooperation. Cooperation was measured by how long participants intended to take a break (in minutes).

Manipulation checks. As manipulation checks, we asked participants whether, in the described situation, there was a rule about how long employees were allowed to have a break, whether they were supervised on how long they took a break and whether their boss was primarily interested in his self-interest or in the interest of the group. The first two items were rated on an answering scale from *1* (completely disagree) to 7 (completely agree), and the last item was rated on an answering scale from *1* (his self-interest) to 7 (the interest of the group).

Results

Manipulation checks

Two 2 (leader) × 3 (rule) ANOVAS confirmed that our manipulations were successful. On the leader manipulation check there was only an effect of leader, $F(1,114) = 74.54$, $p < 0.001$, $\eta^2 = 1.00$. Participants indicated that the boss was less concerned with the group interest in the self-benefiting leader condition ($M = 2.47$, SD = 1.21) than in the self-sacrificing leader condition ($M = 4.40$, SD = 1.53). There was only a main effect of rule on the question whether there was a rule present, $F(2,114) = 57.36$, $p < 0.001$, $\eta^2 = 1.00$. Participants indicated to a greater extent that there was a rule about the duration of the break in the rule with supervision condition ($M = 5.70$, SD = 1.52) and in the rule without supervision condition ($M = 6.00$, SD = 1.22) than in the no rule condition ($M = 2.80$, SD = 1.64), p's < 0.001. The rule without supervision and the rule with supervision condition did not differ, $p = 0.37$. On the question whether there was supervision on the duration of the break, only a main effect of the rule was found, $F(2, 114) = 46.78$, $p < 0.001$, $\eta^2 = 1.00$. Participants reported a greater extent of supervision in the rule with supervision condition ($M = 5.03$, SD = 1.76) than in the rule without supervision condition ($M = 1.90$, SD = 1.22) and in the no rule condition ($M = 2.63$, SD = 1.52), p's < 0.001. The rule without supervision and the no rule condition also differed, $p < 0.05$.

Moral norm

A 2 (leader) × 3 (rule) ANOVA on moral norms regarding having breaks longer than 15 min showed a main effect of rule, $F(2,114) = 11.83$, $p < 0.001$, $\eta^2 = 0.99$. In the rule with supervision condition ($M = 3.94$, SD = 1.28) and in the rule without supervision condition ($M = 3.64$, SD = 1.08), the moral norm was stronger than in the no rule condition ($M = 2.70$, SD = 1.28), $p < 0.001$ and $p < 0.005$, respectively. The rule without supervision condition and the no rule condition did not differ significantly, $p = 0.26$. This main effect of rule was qualified by a Leader × Rule interaction, $F(2, 114) = 3.94$, $p < 0.05$, $\eta^2 = 0.70$ (see first-half of Table III). In the self-sacrificing leader condition, moral norms in both the rule with supervision and the rule without supervision were higher than in the no rule condition, p's < 0.001, and did not differ from each other, $p = 0.85$. In the self-benefiting leader condition, moral norms in the no rule condition differed from the rule with supervision condition, $p = 0.05$ but not from the rule without supervision condition, $p = 0.58$. Both rule conditions did not differ, $p = 0.16$.

Cooperation

A 2 (leader) × 3 (rule) ANOVA on cooperation showed a main effect of leader, $F(1, 114) = 11.50$,

TABLE III

Moral norm regarding a 15 min break and intended duration of break (means and SD's) as a function of leader and rule, Study 2

	Self-sacrificing leader	Self-benefiting leader
Moral norm		
No rule	2.43^{a} (1.28)	2.96^{a} (1.26)
Rule with supervision	4.17^{bc} (1.19)	3.17^{b} (1.38)
Rule without supervision	4.10^{c} (0.93)	3.10^{ab} (1.02)
Intended duration of break		
No rule	26.00^{a} (7.00)	27.00^{a} (7.15)
Rule with supervision	15.80^{b} (1.82)	18.10^{b} (5.04)
Rule without supervision	17.35^{b} (3.39)	24.50^{a} (7.05)

Note: Within rows and columns, cells that do not share a letter in the superscript differ significantly, pairwise comparisons, $p < 0.05$.

$p < 0.001$, $\eta^2 = 0.92$, and a main effect of rule, $F(2, 114) = 29.08$, $p < 0.001$, $\eta^2 = 1.00$. Breaks were shorter in the self-sacrificing leader conditions ($M = 19.72$, SD = 6.41) than in the self-benefiting leader conditions ($M = 23.20$, SD = 7.41). In the rule with supervision condition the intended breaks were shorter ($M = 16.95$, SD = 3.92) than in the rule without supervision condition ($M = 20.93$, SD = 6.55), $p < 0.005$, and in the no rule condition ($M = 26.50$, SD = 7.00), $p < 0.001$. The rule without supervision condition and the no rule condition also differed significantly, $p < 0.001$. Also, a Leader × Rule interaction was found, $F(2, 114) = 3.32$, $p < 0.05$, $\eta^2 = 0.62$ (see second-half of Table III). There were shorter breaks in the rule with supervision than in the no rule condition, for both the self-sacrificing and the self-benefiting leader, both p's < 0.001. Breaks in the rule without supervision condition, however, were only shorter than in the no rule condition when the rule was installed by a self-sacrificing leader ($p < 0.001$) and not when it was installed by a self-benefiting leader, $p = 0.16$. Breaks were shorter in the rule with supervision condition than in the rule without supervision condition, for self-benefiting leaders ($p < 0.001$) but not for self-sacrificing leaders ($p = 0.39$).

Moderated mediation

We tested whether moral norms mediated the effect of the presence of a rule on cooperative intentions. Leader was coded as −1 (self-sacrificing leader) and 1 (self-benefiting leader). First, the moderated mediation was tested in case of supervision. Rule was coded as −1 (no rule condition) and 1 (rule with supervision condition). A similar bootstrap procedure as in Study 1 showed that the indirect effect of the presence of rule on break duration via moral norms was only significant when the leader was self-sacrificing ($z = -1.89$, $p < 0.005$) and not when the leader was self-benefiting ($z = -0.78$, $p = 0.10$). Second, the moderated mediation was tested in case of no supervision. Rule was coded as −1 (no rule condition) and 1 (rule without supervision condition). The bootstrap procedure showed that the indirect effect of the presence of rule on break duration via moral norms was only significant when the leader was self-sacrificing ($z = -2.34$, $p < 0.0005$) and not when the leader was self-benefiting ($z = -0.29$, $p = 0.57$) (see Table IV). Hence, support was found for moderated mediation as moral norm mediated the effect of rule on cooperation only for the self-sacrificing leader. As expected, this was irrespective of monitoring.

Discussion

Similar to Study 1, Study 2 confirms our hypothesis that a rule instigates a personal moral norm of cooperation when it is installed by a self-sacrificing (rather than by a self-benefiting) leader. In addition, Study 2 confirms that the success or failure of instigating a norm emerges behaviorally only

TABLE IV
Regression results for conditional indirect effects, Study 2

	No rule vs. rule with supervision			No rule vs. rule without supervision		
	Moral norm	Lottery tickets taken	Lottery tickets taken	Moral norm	Lottery tickets taken	Lottery tickets taken
Constant	3.32★★★	21.73★★★	21.50★★★	3.17★★★	23.71★★★	32.77★★★
Rule presence	0.62★★★	−4.78★★★	−3.48★★★	0.47★★★	−2.79★★★	-1.31^{+}
Leader	0.02	0.83	0.84	−0.10	2.04★★	1.85★★
Rule presence × leader	-0.25^{+}	0.33	−0.12	0.37★★	−1.54★	−0.32
Moral norm			−2.86★★★			−2.85★★★
Moral norm × leader			−0.20			0.49

Leader	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Self-sacrificing (−1)	−1.89	0.60	−3.13	0.00	−2.34	0.64	−3.67	0.00
Self-benefiting (1)	−0.78	0.48	−1.63	0.10	−0.29	0.52	−0.56	0.57

Note: Unstandardized regressions are reported. Bootstrap sample size = 3000.
★★★$p < 0.001$, ★★$p < 0.01$, ★$p < 0.05$, $^{+}p < 0.10$.

in situations in which people do not feel monitored, whereas installation of the rule always induces cooperation if behavior is monitored, irrespective of the leader. If behavior is not monitored, however, the rule only induces cooperation through affecting personal moral norms when a self-sacrificing leader installed the rule.

Both in Studies 1 and 2, these hypotheses were tested in scenario-based experiments, which have the advantage of allowing for perfect control of participants' perceptions of the manipulated factors. However, they do not involve real behavioral decisions and thus may be subject to demand characteristics. To test whether our findings can be generalized to situations in which real behavioral choices are required, Study 3 was performed in a laboratory setting.

Study 3

Method

Participants and design

Students ($N = 125$) of two Dutch universities participated in this 2 (leader) × 3 (rule) between-subject design experiment for either course credits or money (€3.50). Students had no prior experience with psychological experiments. They were randomly assigned to the six conditions. Six participants were left out of the analysis either because they were suspicious about the leader manipulation, because they had been listening to music during the experiment, or because they were outliers in the time that it took them to make their behavioral choice. This left 119 participants (42 females and 77 males, $M_{age} = 21.1$ years, $SD_{age} = 4.72$).

Procedure

Participants were seated in individual cubicles. First, they were teamed up in groups of four to play a public good game. The only reason for this first social dilemma was that behavioral information from this game was subsequently used to manipulate the self-sacrificing or self-benefiting nature of the leader in the second social dilemma. The second social dilemma (the focal dilemma) was a resource game in which participants were teamed up in groups of five (these were different participants than in the first dilemma). Among them, a leader was appointed and the presence of a rule (with or without supervision) was manipulated as well.

In the public good game, participants played in teams of four. Each participant was endowed with 100 chips, worth 0.05 EUR (0.04 USD) each. They could either keep chips for themselves or donate

chips to the group. Chips donated to the group would be doubled and equally divided among the four group members. One group of participants would randomly be selected to be paid after the experiment was over. Participants indicated how many chips they donated to the group and were given the opportunity to type in a text in which they could explain why they made this choice.

In the instructions to the second social dilemma it was explained that participants would be teamed up with other participants (different from the ones in the first dilemma) in groups of five. Furthermore, one of them would be randomly selected to be the ''leader.'' This leader had the specific task ''to make sure the group would do well'' and was able to impose a self-chosen *rule*. In fact, no one was really selected as the leader and all information about the leader was pre-programmed.

Participants were told that because ''it may be useful to know something about the leader'' the four group members were provided with some information about the leader. This information was the choice that the leader had ostensibly made in the public good dilemma, along with the explanation (s)he provided for that decision. Participants were ensured that their own decisions in the first situation and their explanations were not shown to anyone. In the self-sacrificing leader condition it was told that the leader had donated 100 chips to the group. In the self-benefiting leader condition it was told that the leader had donated no chips to the group. Participants read the following explanation that was allegedly provided by the leader (the self-benefiting leader condition is written in parentheses):

> I just went for the group interest (my own self interest). If I (the group) would earn less by doing that, I don't mind very much. By donating everything (nothing), the group (I) simply earns (earn) the most.

Subsequently, the decision situation was explained. The leader owned a ''pool'' containing 40 lottery tickets. Each lottery ticket gave a chance to win 100 EUR. Every group member who was not the leader had the opportunity to take lottery tickets (minimally 0 and maximally 10) from this pot. The remaining content of the pool would be doubled and equally divided among all group members (including the leader). The leader could not take lottery tickets from the pool (but already ''owned'' the pool).

We manipulated the presence of a rule by telling participants that the leader had the possibility to install a rule and if (s)he did so, to type in the rule for the other group members to read. Then, in the no rule condition participants were told that the leader had decided not to install a rule. In the rule with supervision and the rule without supervision conditions it was told that the leader had decided to install a rule and that (s)he had typed in the following rule:

> I install the rule that you do NOT take any tickets from the pool. So, the rule will be: leave all tickets in the pool.

In the rule with supervision condition participants were told that the leader would supervise group members' decisions. In the rule without supervision condition participants were told that the leader would *not* supervise group members' decisions.

Then, participants were asked several questions and were thanked and debriefed. Four randomly selected group members were paid according to their decisions in the public good dilemma. Also, according to the decisions in the resource dilemma, lottery tickets were allocated and one winner was selected and awarded the 100 EUR prize.

Measures

Moral norm. Seven items, with a seven-point answering scale (1 = *fully disagree*, 7 = *fully agree*), measured personal moral norms about taking lottery tickets ($\alpha = 0.94$). All items started with ''Taking lottery tickets from the pool….'' They finished with ''….is not done,'' ''…I morally disapprove of,'' ''…is something I do not object to'' (reverse coded), ''…is morally incorrect,'' ''…is not social towards the others,'' ''…ought not to be done,'' and ''….is not so bad'' (reverse coded).

Cooperation. As a measure of cooperation participants were asked how many lottery tickets they decided to take (the less tickets, the more cooperative they were).

Manipulation checks. Using the same answering scale that was used for measuring the perceived moral norm, four items ($\alpha = 0.85$) measured whether

TABLE V

Moral norm regarding taking lottery tickets and number of lottery tickets taken (means and SD's) as a function of leader and rule, Study 3

	Self-sacrificing leader	Self-benefiting leader
Moral norm		
No rule	2.98[a] (1.33)	3.01[a] (0.95)
Rule with supervision	4.75[b] (1.69)	3.67[a] (1.42)
Rule without supervision	4.79[b] (1.22)	3.35[a] (1.20)
Number of lottery tickets taken		
No rule	5.21[a](3.82)	7.15[a] (3.28)
Rule with supervision	0.14[b] (0.64)	5.00[a] (5.77)
Rule without supervision	2.13[b] (4.03)	6.93[a] (3.95)

Note: Within rows and columns, cells that do not share a letter in the superscript differ significantly, planned comparison, $p < 0.05$.

participants perceived the leader to be self-benefiting or self-sacrificing (e.g., ''The leader is someone who sets his/her own interests aside for others'' and ''The leader is someone who mainly thinks of his/her self interest'' [reverse coded]). One item was a check for the presence of a rule (''The leader has installed a rule to influence our choices''). Two items ($\alpha = 0.85$) checked whether participants felt monitored (''The leader is supervising our choices'' and ''The leader will know about our decisions'').

Results

Manipulation check

Three 2 (leader) × 3 (rule) ANOVAS showed that our manipulations were successful. Pertaining participants' perceptions of how self-sacrificing the leader was, only a main effect of leader was found, $F(1, 107) = 69.31$, $p < 0.001$, $\eta^2 = 1.00$. The leader was perceived as more self-sacrificing in the self-sacrificing leader condition ($M = 4.77$, SD = 1.29) than in the self-benefiting condition ($M = 2.69$, SD = 1.40). Pertaining participants' perceptions of the presence of a rule only a main effect of rule was found, $F(2, 107) = 153.08$, $p < 0.001$, $\eta^2 = 1.00$. In both the rule with supervision ($M = 6.05$, SD = 1.17) and in the rule without supervision ($M = 5.97$, SD = 0.95) conditions, the leader was perceived to have installed a rule to a greater extent than in the no rule conditions ($M = 1.72$, SD = 1.50) (Tukey *post-hoc* tests, all p's < 0.001). The rule with supervision and the rule without supervision conditions did not differ (Tukey *post-hoc*, $p = 0.96$). Pertaining participants' feelings of being monitored only a main effect of rule was found, $F(2, 107) = 81.78$, $p < 0.001$, $\eta^2 = 1.00$. Participants felt more supervised in the rule with supervision ($M = 6.07$, SD = 1.23) than in the rule without supervision ($M = 2.00$, SD = 1.40) or the no rule condition ($M = 3.63$, SD = 1.51). The no rule and the rule without supervision conditions differed significantly (Tukey *post-hoc*, all p's < 0.001).

Moral norm

A 2 (leader) × 3 (rule) ANOVA was performed on the moral norm with regard to taking lottery tickets. Main effects were found for leader, $F(1, 107) = 10.46$, $p < 0.005$, $\eta^2 = 0.09$, and rule, $F(2, 107) = 9.59$, $p < 0.001$, $\eta^2 = 0.15$. Participants considered taking lottery tickets more immoral in the self-sacrificing leader ($M = 4.17$, SE = 1.22) than in the self-benefiting leader condition ($M = 3.01$, SE = 0.96). Also, they considered taking lottery tickets more immoral in both the rule with supervision ($M = 4.22$, SE = 1.64) and the rule without supervision ($M = 4.09$, SE = 1.40), than in the no rule condition ($M = 2.99$, SE = 1.14), Tukey *post-hoc*, $p < 0.001$ and $p < 0.005$, respectively. The rule with supervision condition and the rule without supervision condition did not differ, Tukey *post-hoc*, $p = 0.91$. There was a significant Leader × Rule interaction, $F(2, 107) = 2.99$, $p = 0.05$, $\eta^2 = 0.05$ (see first-half of Table V). In

TABLE VI

Regression results for conditional indirect effects, Study 3

	No rule vs. rule with supervision			No rule vs. rule without supervision		
	Moral norm	Lottery tickets taken	Lottery tickets taken	Moral norm	Lottery tickets taken	Lottery tickets taken
Constant	3.60★★★	4.37★★★	8.38★★★	3.53★★★	5.36★★★	11.99★★★
Rule presence	0.61★★★	−1.81★★★	−1.27★★	0.54★★★	−0.83^{+}	0.19
Leader	−0.26^{+}	1.70★★★	1.31★★★	−0.35★	1.69★★★	1.04★
Rule presence × leader	−0.28^{+}	0.73^{+}	0.76★	−0.37★★	0.72	0.02
Moral norm			−1.15★★★			−1.88★★★
Moral norm × leader			−0.86★			0.03

Leader	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*	Boot indirect effect	Boot *SE*	Boot *z*	Boot *p*
Self-sacrificing (−1)	−0.89	0.31	−2.87	0.00	−1.68	0.43	−3.95	0.00
Self-benefiting (1)	−0.34	0.21	−1.62	0.11	0.32	0.37	−0.89	0.37

Note: Unstandardized regressions are reported. Bootstrap sample size = 3000.
★★★$p < 0.001$, ★★$p < 0.01$, ★$p < 0.05$, $^{+}p < 0.10$.

the self-sacrificing leader condition, there was a stronger moral norm about taking lottery tickets in both the rule with supervision condition and the rule without supervision condition, compared to the non-rule condition, p's < 0.001. The two rule conditions did not differ, $p = 0.93$. In the self-benefiting leader condition, the moral norm was not influenced by the rule manipulation, all p's > 0.12.

Cooperation

A 2 (leader) × 3 (rule) ANOVA was performed on the number of lottery tickets participants took in the resource game. Main effects were found for leader, $F(1, 107) = 31.83$, $p < 0.001$, $\eta^2 = 0.23$, and rule, $F(2, 107) = 10.28$, $p < 0.001$, $\eta^2 = 0.16$. Participants took less lottery tickets in the in the self-sacrificing leader conditions ($M = 2.39$, SD = 3.73) than in the self-benefiting leader conditions ($M = 6.29$, SD = 4.13). Also, they took less lottery tickets in the rule with supervision conditions ($M = 2.51$, SD = 4.14) than in both the rule without supervision conditions ($M = 4.45$, SD = 4.62), Tukey, $p = 0.06$, and the no rule conditions ($M = 6.21$, SD = 3.64), Tukey, $p < 0.001$. The Leader × Rule interaction did not reach significance, $F(2, 107) = 2.06$, $p = 0.13$, $\eta^2 = 0.04$ (see second-half of Table V).

Moderated mediation

Moderated mediation analyses were performed, similar to Study 2. The results of the bootstrap procedures confirmed our expectations. For the case of supervision, the indirect effect of the presence of rule on lottery tickets taken via moral norms was only significant when the leader was self-sacrificing ($z = -0.89$, $p < 0.01$) and not when the leader was self-benefiting ($z = -0.34$, $p = 0.11$). For the case of no supervision, the indirect effect of the presence of rule on lottery tickets taken via moral norms was only significant when the leader was self-sacrificing ($z = -1.68$, $p < 0.0005$) and not when the leader was self-benefiting ($z = 0.32$, $p = 0.37$) (see Table VI). Hence, irrespective of monitoring, the moral norm mediated the effect of rule on cooperation only for the self-sacrificing leader.

General discussion

Three studies revealed that installing a rule of cooperation can instigate a personal moral norm of cooperation, but only when installed by a self-sacrificing, rather than by a self-benefiting leader. This had profound implications for behavior: Rules installed by self-benefiting leaders only instigated

cooperation if people's behavior was monitored, whereas rules installed by self-sacrificing leaders unconditionally instigated cooperation.

Although the positive impact of self-sacrificing leaders over self-benefiting leaders has been shown before (Choi and Mai-Dalton, 1998; De Cremer and van Knippenberg, 2005; De Cremer et al., 2006, 2009), it has never been studied how this aspect of leadership interacts with installing a rule of cooperation. Mere main effects of leadership on cooperation would be in line with, for example, earlier findings that leaders evoke behavioral modeling (Gardner and Cleavenger, 1998). However, this article reveals that the impact of rule installation is greater for self-sacrificing leaders than for self-benefiting leaders. Moreover, this impact concerns shaping people's personal *moral norms* in a social dilemma. As self-sacrificing leaders are more charismatic and inspirational (Choi and Mai-Dalton, 1999; De Cremer, 2002) and thus more likely to actually transfer an attitude among onto followers, rules installed by such leaders may be regarded as inspirational rather than restrictive. Consequently, these rules instigate personal moral norms and foster cooperation even when people do not feel monitored. A further implication is that rules installed by self-sacrificing leaders may succeed to foster cooperation also *in the long run*. After all, when increasing moral norms, rules may foster intrinsic and autonomous motivation to cooperate which are motivations related to deeper engagement and persistence in behavioral change and learning (Deci and Ryan, 2000; Ryan and Deci, 2006; Vansteenkiste et al., 2006). Thus, further research could focus on continuation of cooperation as a function of rules and leaders.

Leadership as a moderator

Apart from leader self-sacrifice, more aspects of leadership influence followers' reactions to leaders' interventions. For example, Van Prooijen et al. (2008) showed that inconsistent punishment decreased perceptions of belongingness and, as such, decreased cooperation, whereas consistent punishment did not. In the current article, we were specifically interested in how rules and leaders affected *moral norms*. We specifically focused on leader self-sacrifice as a moderator because we reasoned that self-sacrificing leaders would be regarded to act in the benefit of the collective. Consequently, the rule would be interpreted similarly, hence affecting a personal moral norm of cooperation. Whether the extent to which a leader has the group interest in mind is the explanatory mechanism of the moderating role of leader self-sacrifice vs. self-benefit is an interesting topic for further research. This is particularly interesting considering that other leadership characteristics also relate to whether a leader is perceived to support the group's interest. These are, for example, legitimacy (Van Dijke and De Cremer, 2010) or trust (Mayer et al., 1995).

Because of the relation with leader benevolence, it may be the case that legitimacy and trust also moderate the effect of a rule. Future research could focus on this. However, because self-sacrifice seems easier to control than legitimacy and trust, the practical implications for existing leaders of finding a moderating effect of leader self-sacrifice may be greater than the practical implications of finding a moderating effect of legitimacy or trust. After all, often a leader cannot directly control whether subordinates trust him/her or control whether they feel that (s)he deserves the position of the leader. However, it is up to a leader whether s(he) behaves in ways that clearly show that (s)he puts the groups interests over his/her self-interests. Of course, self-sacrificing behaviors may also, as a positive side effect, in the long run increase perceptions of legitimacy and feelings of trust. However, whether this legitimacy and trust also contribute to making rule installation increase moral norms remains a question for further research. In any case, from the current article it has become clear that whether the leader is perceived as self-benefiting or self-sacrificing determines the effect of rules on moral norms. This insight implicates that leaders are advised to show self-sacrificing behavior rather than self-benefiting behavior to make a rule really work.

Mediation processes

We argued and observed that rule installment by self-sacrificing leaders increases cooperation because it elicits moral norms (whereas rule installment by a self-benefiting leader fails to do so). However, alternative processes may be at work at the same

time. Possibly, when there is a self-benefiting leader, people may also rebel against the leader especially when this leader is telling them what to do by installing a rule. This explanation would not be in line with the results from our mediation analyses which clearly indicated that moral norms mediated the impact of rules on cooperation. However, it cannot be excluded as an additional process underlying the effect of rules and leader self-sacrifice on cooperation. More research is required to test this.

Implications

Our results have various implications. First, although rules are often combined with monitoring and sanctioning systems, in many situations strict monitoring and sanctioning of rule adherence is either undesirable or impossible. Therefore, it is hopeful to see that installing rules may increase compliance even when behavior is not monitored. As long as it is likely that followers perceive authorities to pursue the interest of the group, installation of a rule makes good sense. However, if it is likely that followers perceive authorities to pursue their self-interest, installation of a rule can only be successful in bringing about cooperation when behavior is perfectly monitored and sanctions will consistently follow upon non-adherence. Increasing moral norms of cooperation, however, is then unfeasible.

Second, as mentioned in the introduction, financial sanctions can undermine moral concerns (Gneezy and Rustichini, 2000; Tenbrunsel and Messick, 1999). However, a sanction is always an enforcement of some kind of rule. When this rule is installed by a self-sacrificing leader, the norm-instigating effect of rules as found in this article may also buffer or even reverse the norm-undermining effect of a financial sanction. As such, a rule installed by a self-sacrificing leader may prevent a financial sanction to evoke a business frame at the cost of an ethical frame. Further research could be performed to test this.

Conclusion

This article has focused on whether and when installing a rule can affect people's personal moral norms. Our findings suggest that rules may actually contribute to the shaping of moral norms when installed by a self-sacrificial leader. This insight opens opportunities to encourage cooperation in situations in which surveillance or sanctioning is too weak to evoke cooperation in itself.

Note

[1] We define leadership in a broad sense, namely as "being in position of leading or influencing others within a given context" (Oxford Dictionary).

Appendices

Appendix A. Scenario as used in Study 1

Self-benefiting leader condition
You live in a village that is governed by a leader who seems to care little about the welfare of the inhabitants: With every new amenity he raises taxes a couple of percentages. In other words: a leader who, in your eyes, puts his own interests first.

Self-sacrificing leader condition
You live in a village that is governed by a leader who is known for somebody who would do anything for the inhabitants: He paid several amenities out of his own pocket. In other words: a leader who, in your eyes, puts the interests of the inhabitants first.

All conditions
The village depends on an adjoining lake in which a considerable population of catfish lives. The catch of these catfish is of vital importance as it provides for the primary necessities of life. The catch has also become important for trading (which supplies income for the inhabitants) because, in a similar lake in another village, abundant catch has drastically diminished the fish population.

For you it is also important to catch catfish. The more catfish you catch, the better it is for you welfare. At the moment you catch 14 kilos catfish a month. By catching this amount, you do not

exactly make a fortune, but you can manage well enough.

Rule condition
At a certain moment, the leader of the village, as mentioned above, installs a rule: Every inhabitant of the village may only catch a restricted quantity of catfish, namely 10 kilos per inhabitant per month.

Appendix B. Scenario as used in Study 2

You work in a shop and this job is very important for you. The shop has decreasing sales and is in danger of bankruptcy, so you and your colleagues' job are therefore in danger.

Self-sacrificing leader condition
The boss of the shop cares, in your eyes, a lot about the welfare of the shop employees and is considerate of their interests. An example of this is that, in the past, he has put aside extra profit particularly as a financial buffer so that he would be able to keep paying the employees in bad times.

Self-benefiting leader condition
The boss of the shop cares, in your eyes, little about the welfare of the shop employees and seems to put his own interests first. An example of that is, in the past, he mainly used extra profit for himself in the form of junkets.

All conditions
For you and your colleagues it is customary to have a break for about half an hour.

Rule conditions
Your boss has installed the rule that the breaks shop employees take should be shorter, namely 15 min.

Rule condition with monitoring
Imagine that your boss is present at work today and is supervising.

Rule condition with monitoring
Imagine that your boss is *not* present at work today and is *not* supervising.

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