

Does Goal-Demotion Enhance Cooperation?

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Abstract

Social scientists have long assumed that religion – and more specifically religious rituals – promotes cooperation. It has also been claimed that ritual plays an essential role in enhancing prosociality and cooperation. In this study, using a controlled laboratory experiment, we investigate if a conspicuous and recurrent feature of collective ritualized behaviour, goal-demotion, promotes lasting cooperation. We report that goal-directed collective behaviour is more efficient than goal-demoted behaviour for motivating participants to engage in ulterior cooperation. Plausible interpretations of the data and of the mechanisms involved are discussed.

Keywords

Trust – cooperation – goal-demotion – public goods experiment – religion

Introduction

Many social theorists have suggested that religion promotes cooperation. Religion has been seen as reinforcing solidarity (Durkheim, 1912/1995), promoting morality (James, 1902/1985), and maintaining social order (Turner, 1969). The association between religiosity and prosociality remains a matter of academic dispute, with researchers disagreeing whether this association is positive (Saroglou et al., 2005; Soler, 2012), negative (Batson et al., 1989; Jackson and Esses, 1997; Goldfried and Miner, 2002), or simply non-existent (Batson et al., 1989; Orbell et al., 1992; Spilka et al., 2003; Eckel and Grossman, 2004; Tan, 2006; Anderson et al., 2010; Malhotra, 2010; Grossman and Parrett, 2011). Other studies have investigated specific religious institutions that might promote cooperation and generosity, such as extreme rituals (Xygalatas et al., 2013). It has been claimed that these religious institutions reinforce in-group favouritism (Sosis and Ruffle, 2003; Tan and Vogel, 2008). Finally, it has also been shown experimentally that directly or indirectly evoking presence of supernatural agents decreases the likelihood of cheating or increases prosociality (Bering et al., 2005; Shariff and Norenzayan, 2007; Mazar et al., 2008; Ariely, 2008, 2012; Xygalatas, 2013). A ritual is often conceived as one of the main religious institutions eliciting prosociality, affiliation and cooperation. The mechanism by which it would do so has not been extensively investigated. Is ritualized behaviour, a typical component of rituals, playing a crucial role? In this paper we investigate the effect that goal-demotion, an essential specific feature of ritualized behaviour, has on cooperation.

Ritualized behaviour is characterized by stereotypy, rigidity, repetition, and goal-demotion (Boyer and Lienard, 2006; Lienard and Boyer, 2006). Ritualized behaviours are goal-demoted, or non-functional, behaviours in the sense that the latter are not justified by the purported goals of the performed sequences of actions (Humphrey and Laidlaw, 1993; Rappaport, 1999, Boyer and Lienard, 2006; Lienard and Boyer, 2006; Sørensen, 2007; Nielbo and Sørensen, 2011). Indeed, although goals are generally broadly ascribed to ritual actions (e.g., cleansing the altar), the constitutive actions (e.g., wiping 7 times from East to West, then 3 times from North to South) are not readily causally connected to the purported goal (e.g., wiping 7 then 3 times is not *per se* functionally necessary for cleansing the altar; it is how cleansing the altar is performed though). Could it be that goal-demotion, a central feature of ritualized behaviour, itself a recurrent and typical component of rituals, plays a role in enhancing social agents' pro-sociality, hence overall willingness to cooperate? Would the feature of goal-demotion *per se* be responsible for enhancing pro-sociality? Based on Boyer and Lienard's model of ritualized behaviour as by-product, it seems

improbable (Boyer and Lienard, 2006). The experimental study presented here aims at testing this entailment of the model.

The experiment evaluates whether participation in a goal-demoted collective action promotes future cooperation. We have two claims: (1) Goal-directed actions are better than goal-demoted actions for promoting lasting cooperation. (2) Goal-directed actions are better than goal-demoted actions for convincing agents that others with whom they have interacted will cooperate in the future. Through self-reported data we additionally evaluate whether goal-demoted actions, more so than goal-directed actions, favor shared emotions between participants. In the experiment goal-directedness was operationalized as full knowledge of the relation between actions performed and their final objective (the end state to which the sequence of actions leads); goal-demotion as the converse, the absence of knowledge about the end state.

Methods

Participants

Forty-eight (24 females) students from Aarhus University of Denmark took part in the study, in 12 groups of 4 participants. Showing up late to the laboratory and arithmetical deficiency were the only exclusion criteria. None of the 4 participants in each group had met prior to the experiment.

Materials

We tested the effect of full goal ascription in an original phase of interaction on the willingness of individuals to cooperate in a Public Goods Game played after the original phase. Public good experiments are concerned with social situations in which there is a conflict between the individual and the group of individuals as a whole (Ledyard, 1994; Ostrom, 2000). In the game, two anonymous participants are asked if they want to invest in a common project after having been endowed with a fixed set of assets. Both participants make their decision simultaneously, anonymously, and without previous negotiation. They have the option of investing – or not – in a common pool in which the money invested will be multiplied by 1.5 by the experimenter. The experimenter then allocates the collected amount equally between the two participants. Thus, the group's maximum payoff is reached if both players invest the whole amount they received at the onset of the game. However, the maximum pay-off for any individual player is if the opponent invests all and self-invest nothing. The unique Nash Equilibrium of the game is zero contribution from either player (Gächter, 2004).

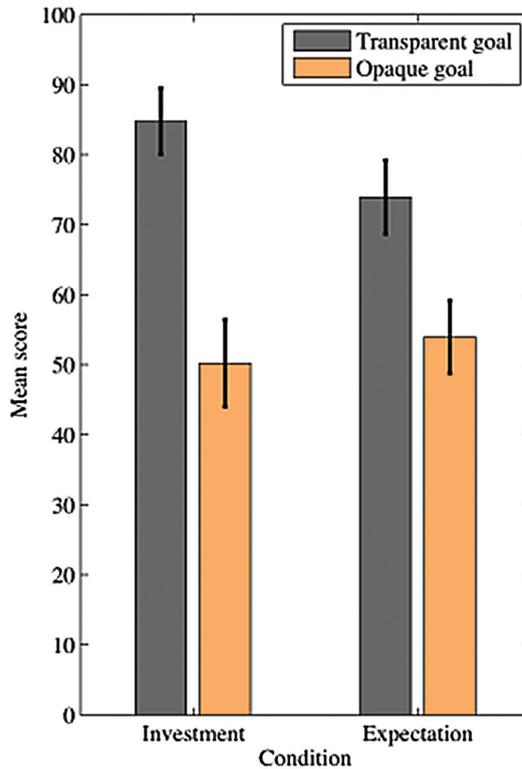


FIGURE 1

Design

Participants were randomly assigned to either one of two conditions that we, for the sake of this paper, name as: goal-directed (henceforth goal-transparent) or goal-demoted (6 groups of 4 participants, 3 male- and 3 female-only groups in each condition). In both conditions the participants were asked to follow an identical set of instructions displayed sequentially on a computer screen instructing them when and how to act. In the goal-transparent condition, participants were shown the outcome of their interaction, a specific building made of wooden blocks (Fig. 1). In the goal-demoted condition, participants were not made aware of the end-result. After the construction task, the participants played a two-player public goods game. They were told that they would be playing with one of their three teammates and had to decide if they wanted to invest money (and how much) in the common project. Participants were then asked to provide their estimation of the other player's contribution. At completion of the game, they were asked to complete a questionnaire.

Participants' basic demographic information was collected. Other questions addressed participants' impressions of the construction task.

All instructions and questions were provided in Danish (the native language of the participants), and a Danish assistant, blind to the hypotheses, conducted the experiment. We used 4 participants per group in the collective building task in order to assure that participants would remain anonymous in the following economic game thus partially controlling for potential attraction effects.

Procedure

Participants were recruited via flyers. They received an email reminding them of the time and location where the experiment was to take place. They were also informed about the nature of the experiment and asked to send a written informed consent via email before participation.

Upon arrival to the laboratory the participants were waiting to different rooms in order to avoid any communication prior to the study. They were then directed to the experimental room, where they sat next to each other, facing a table and a large monitor on which the instructions would be displayed. In front of each participant was a paper-bag (Fig. 2) containing 20 building blocks of different shapes. The participants were told that their objective was to follow the instructions displayed progressively on the screen that will tell them what to do with the wooden blocks (Figs 1 and 2).

The participants did not receive any instructions whether or not to talk to each other. Who was next and which block was to be placed in a particular position was systematically specified in the instructions displayed on the monitor. In order to control for social loafing effects, the participants were also instructed not to touch any of the other players' blocks. The procedure was identical in both conditions, but for the fact that the participants in the goal-transparent condition could see displayed on the monitor the final product of their actions, whereas in the goal-demoted condition they could not.

At the end of the building task, each one of the four participants was instantly isolated in individual rooms. On a desk in each of the four rooms were a pen and a stack of 5 sheets of paper (1, instructions; 2, numerical control test; 3, investment decision paper; 4, estimation paper – about what the other player would invest in the common project –; and 5, questionnaire). When done, the participants were asked, one by one, to come to the control room, where they were debriefed, and compensated. The experiment lasted about 45 minutes: 11 minutes for the construction phase and 30–34 minutes for the economic game and questionnaire. The minimum amount paid was 75 DKK (\approx 10 euros) and the maximum was 175 DKK (\approx 23.5 euros).



FIGURE 2

Results

Investment and Expectation of Other Players' Contribution

In the sample both investment and expectation were higher in the goal-transparent condition than in the goal-demoted condition (see Fig. 1). A one-way ANOVA confirmed that the difference in investment was statistically significant: $F(1, 46) = 9.88, p < 0.01, \eta^2 = 0.18$. As the investment data did not fully comply with the assumption of normality, a non-parametric analysis was carried out. A one-way Kruskal-Wallis test confirmed that the difference in investment was indeed reliable: $\chi^2(1, N = 48) = 9.61, p < 0.01$. For the between-conditions difference in expectations a one-way ANOVA showed a similar, though non-significant, result: $F(1, 46) = 3.66, p = 0.06, \eta^2 = 0.07$. Since these

data exhibited a non-normal distribution, a Kruskal–Wallis test was likewise used to test the difference. The test did show a significant effect of action on expectation: $p < 0.05$ level: $\chi^2(1, N = 48) = 4.35, p < 0.05$.

Impressions of The Construction Task

In the goal-transparent condition, 75% of the participants reported that the process was entertaining, which is significantly above chance (exact binomial $p(\text{two-tailed}) = 0.022$). In contrast, the goal-demoted condition only elicited an “entertaining” response from 42% of the participants, which is not significantly different from chance (exact binomial $p(\text{two-tailed}) = 0.541$). Thirteen percent found the goal-transparent task “easy”, which is significantly less that would be expected by chance (exact binomial $p(\text{two-tailed}) = 0.0003$); while 38% found the goal-demoted task easy, which is not significantly different from chance level (exact binomial $p(\text{two-tailed}) = 0.308$).

Discussion

Our study demonstrates that the participation in a goal-demoted action decreases cooperation in a posterior interaction. As predicted, participants blocked from observing the final state of their collective actions behaved less cooperatively (i.e., contributed less) in the succeeding public goods game, estimated that their teammates would also be less cooperative, and exhibited less shared emotions about the building task.

Goal-demotion decreased future cooperation in comparison to a transparent goal. A plausible mechanism that could explain the significantly higher contributions after the goal-transparent condition might involve the creation of an “illusion of coordination” (Mitkidis et al., 2013). Encoding of individual actions takes place differently in the two conditions. In the transparent condition the collection of all the individual actions seems to be represented as coordinated towards a shared, common goal. In the goal-demoted condition participants might not be able to encode individual actions as a sequence of coordinated actions.

Another plausible explanation for the higher contributions in the goal-transparent condition might involve properties of the structure of the expectations about goals. As investigated by Pruitt and Kimmel, in order for people to efficiently cooperate two conditions need to be satisfied: (1) a collective goal, and (2) expectations about the other’s willingness to cooperate (Pruitt and Kimmel, 1977; Ariely, 2008; Mitkidis et al., 2013). In the goal-demoted condition, participants might not be able to coordinate their expectations with the others, since there was no obvious cooperative end-state to their contribution.

They could not consider their co-players as having a mutually beneficial expected utility and that resulted in lower contributions during the economic game (Kahneman and Tversky, 1979).

Participants' impressions of the construction task provide additional support to the argument that full knowledge of the relation between actions and their final objective facilitates the "illusion of coordination". Organizational behaviour researchers have shown that shared emotions positively influence teams' decisions (Håkonsson et al., data not shown). In the goal-demotion condition participants reported more mixed feelings. This supports the idea that a clear purpose might help participants to align their feelings and this in turn would enhance their cooperation in the subsequent economic game.

Overall, we investigated the effect of lack of apparent goal in a collective action in terms of future cooperation and found that, when there is no obvious purpose to the action, future cooperation is reduced. The study has opened the way to more systematic and empirical evaluation of the relationship between goal-specification and cooperation. We investigated a very small aspect of that general question, namely, the effect on future cooperation of participating in a collective action with or without a clearly identified goal.

From this study alone we have no reason to claim that ritual does or does not generate cooperation (and this was not our intention). Rituals allow for specific ways to behave that can be used for achieving various social ends (e.g., advertising one's quality as a cooperator or group membership). However our findings support the claim that an essential property of ritualized behaviour goal-demotion in itself does not enhance cooperation.

Ethical Statement and Data Availability

This experiment was approved by the De Videnskabsetiske Komiteer for Region Midtjylland. Skottenborg 26, 8800 Viborg, Denmark, DK. All participants provided written informed consent. The participants of Fig. 2 have given written informed consent. The data can be provided upon request. The data used in the discussion presented above have been previously published in PLoSOne.

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