Agency and structure

The role of individual social values and material interests in changing contribution rules to, and benefits from, a collective good

van Breemen, J.A.

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CHAPTER 1
INTRODUCTION

1.1. STUDYING INDIVIDUAL ATTEMPTS TO CHANGE THE RULES

Modern societies heavily depend upon high levels of cooperation towards a collective (Melis and Semmann 2010). Think for instance of the level of cooperation that is needed to accomplish a complicated goal such as the reduction of global warming. On a smaller scale, there is the level of cooperation that is needed to complete a project at work. Rules structure those cooperative interactions within groups, guiding the actions and strategies of individuals within those groups, and determining the benefits that individuals obtain or are excluded from (Ostrom 2005). Rules are a general feature of human organizations, as they regulate the behavior of individuals whenever they interact (March, Schulz, and Zhou 2000). They create stable expectations of the behavior of others (Hodgson 2006), and delineate the opportunities and constraints for both individual and collective action.

However, rules do not always adequately control and regulate individual and collective behavior. Some rules cannot prevent a breakdown of cooperation or an unequal division of the benefits of cooperation, as confirmed by many studies (e.g., Dawes 1980; Ledyard 1995; Olson 1965; Ostrom 2005; Reuben and Riedl 2013). When this is the case, the collective is worse off, for instance because global warming does not get reversed, or because the work project does not get accomplished. The question that we aim to answer in this thesis is whether individuals can prevent such consequences by changing the formal rules. More specifically, we examine whether and when individuals attempt to change the formal rules, in order to promote high levels of cooperation and equal allocation of benefits. We therefore look at the rules which guide and structure the cooperation of individuals within groups. In doing so, we focus on two types of rules: (1) those which prescribe individual contributions towards the collective, and (2) those which shape the allocation of benefits from the collective.

To study these rule change attempts, we consider the simplest form of an organization of individuals, where the actions of its members are interdependent. Individuals frequently interact within teams, defined as small groups of interdependent individuals who share responsibilities for a collective outcome (Sundstrom, De Meuse, and Futrell 1990). In a team, individuals cooperate by contributing to the team’s collective good (Tyler and Blader 2000), from which each team member can benefit. Hence, we focus in our study on the rules
that shape and effect team cooperation and individual benefits from the team collective.

Across the social sciences the definitions of rules are abundant and diverse. In line with earlier research we distinguish formal rules from informal rules (Nee and Ingram 1998; Nee and Opper 2014; North 1990; Ostrom 2008; Voigt and Kiwit 1998). The former are explicit regulations, detailing how individuals within an organization or team are expected to act in specific situations, and they are formally enforced by a third party (March et al. 2000). These rules prescribe and control, for instance, how much individuals should contribute to a team project (Sewell 1998) and the allocation of benefits that each team member receives (Friebel et al. 2015; Renaud 2005). Informal rules, on the other hand, are the social norms that prescribe the appropriate behavior in a specific situation, they are informally enforced through social rewards or punishment by peers (Coleman 1987; Elster 1989). An example would be a social norm that specifies the appropriate contribution towards a group project (Ostrom 2014; Reuben and Riedl 2013).

While earlier research typically focused on the structural change of informal rules, such as the implementation of (informal) sanctioning systems and the enforcement of norms (Fehr and Gächter 1999; Gürerk, Irlenbusch, and Rockenbach 2006; Noussair and Tan 2011; Sutter, Haigner, and Kocher 2010; Van Miltenburg et al. 2014; Yamagishi 1986), the focus of this thesis lies on the change of formal rules that govern the individual contributions to, and benefits from, the team collective. The first aim of this thesis is to complement this earlier research by studying whether individuals are able to change the existing formal rules that govern their behavior, instead of investing in new forms of achieving cooperation or a redistribution of benefits. As several authors have argued, formal changes can be more effective because they intervene directly in the outcome structure, thereby eliminating the conflict between individual and collective interests (Messick et al. 1983; Samuelson 1993; Van Vugt and Samuelson 1999).

Second, by examining individual attempts to change existing rules, we contribute to the study of structural change in a novel way. Earlier studies such as, and in line with, those mentioned above primarily examined individual attempts to change informal rules during interactions in an environment without pre-existing formal constraints, which is rarely encountered in real life. This thesis, however, takes into account that cooperative interactions do not happen in a regulatory vacuum. Instead, we look at how existing rules guide individual behavior and team interactions, and at how they influence subsequent change attempts. We thus consider the context which plays a role in the specific environment (e.g., Chavance 2008).

Third, while we incorporate in our analyses the influence of informal rules, i.e., social norms, on team interactions, we consider the interaction between those
norms and the formal rules on attempts to change the rules. We thus acknowledge the importance of considering the interaction between rules and norms which is stressed by scholars across disciplinary lines (Nee and Ingram 1998; North 1990; Pejovich 1999; Voigt and Engerer 2002; Winiecki 2001). Moreover, we acknowledge the heterogeneity of the individuals making up the teams in which cooperative interactions take place. We examine their responses to the existing formal rules and social norms, and hence their attempts to change the rules, while accounting for individual differences in motivation and interest. By focusing on all these interrelationships, this thesis aims to contribute to the field of institutional change literature by showing how individual rule change attempts take place in a social context.

1.2. FORMAL RULES STRUCTURING CONTRIBUTIONS TO, AND BENEFITS FROM, THE TEAM COLLECTIVE

The first type of rules we consider are those which prescribe individual contributions towards a team collective. Whenever individuals are bound to cooperate in order to achieve a collective outcome, they face a social dilemma. Because the benefits of the team collective are available to everyone in the team, regardless of whether members contribute to it, individual members can free-ride on the contributions of other team members (Dawes 1980; Ledyard 1995; Olson 1965; Ostrom 1990). Imagine, for example, a team of call center agents working together on the task of providing support to customers who call in. When all individual team members contribute to the team collective (i.e., total calls answered) by answering incoming calls, the team cooperates. However, some agents may stall on taking calls, take frequent restroom breaks, or take a lot of time answering an easy call, while their team members expedite the waiting cue of incoming calls.

The individual contributions to the team collective may be enforced through social norms (e.g., Reuben and Riedl 2013), but also through an organizational rule (Sewell 1998). An example of the latter is an automated system, implemented by management, which directs all incoming calls immediately to the individual agents. Here the level of enforcement of cooperative behavior is high, as it makes contributions towards the team collective largely mandatory instead of voluntary

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2 Throughout this thesis the terms “contribution rule” and “cooperation rule” are used interchangeably. A contribution rule prescribes the individual contributions towards a group’s collective outcome; a cooperation rule is the general term used to describe a rule which reflects the level of cooperation through contributions.
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This brings about the efficient achievement of collective goals through rule compliance (Joyce, Pike, and Butler 2013), overcoming the social dilemma that individuals face. In this sense, we define such a rule as one that formally demands a high level of contribution.

On the other hand, individual contributions might be less strictly enforced by the organization. The call center agents for instance may be allowed to answer calls according to their own judgement, provided that they each answer a minimum number of calls each day. We define such a rule as one that formally demands a low level of contribution. Both are examples of organizational rules which vary depending on the formally enforced level of individual contributions to the team collective. They are the first focus of our study.

Our second focus is on the rules which shape the allocation of benefits from the team collective. An unequal distribution of the benefits of cooperation is, for instance, the result of the simultaneous use of standard and non-standard employment, which is a common practice within firms (Bonache 2004; Kalleberg 2000; Klein 1999). In our example, this means that some call center agents have a permanent contract which includes a year-end bonus, while others have a flexible contract without this benefit. This may lead to inequality, where a rule that prescribes an unequal allocation of benefits from individual contributions to the team collective leads to ‘high earners’ and ‘low earners’ within the team.

1.3. SECURING COOPERATION AND AN EQUAL ALLOCATION OF BENEFITS

A rule which demands a low level of individual contribution has the advantage of providing autonomy to individual team members, but it also increases the chance that individuals free-ride on the contributions of their team members. An imbalance between individual self-interest and collective welfare can then “easily turn into a nasty war of worker against worker” (Adler 2003:381), leading to feelings of uncertainty about the present and future cooperative actions of team members (Yamagishi 1986). Individuals who realize “the futility of voluntarily based cooperation” may be more likely to seek a structural change in order to diminish the undesirable consequences of free riding and to promote mutual cooperation (Yamagishi 1986:111). Because of our interest in rule change attempts which promote cooperation, we first investigate the likelihood of an individual attempt to change a rule that mandates a low level of contribution into a rule that

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As cooperation is "the willful contribution of personal efforts to the completion of interdependent jobs" (Wagner 1995:152), the formal constraint to cooperate replaces the ‘willful’ with ‘mandatory’.
demands a high level of contribution. This rule change attempt forms the topic of investigation in Chapter 2.

Furthermore, research indicates that an individual’s support for a rule that regulates cooperation depends on that person’s individual benefits from cooperation in a team (Fisher et al. 1995; Nishi and Christakis 2015; Olson 1965). Therefore, in Chapter 3 we study whether and how individuals attempt to change a rule that mandates a low level of contribution into a rule that demands a high level of contribution when individual earnings are unequally allocated.

Third, distributive justice concerns, meaning individual attention to the allocation of benefits and resources, are experienced by most individuals (d’Anjou, Steijn, and Van Aarsen 1995; Barber and Simmering 2002; Cook and Hegstedt 1983; Deutsch 1975). However, individuals are heterogeneous in their social preferences for an equal or unequal allocation of benefits (Fehr, Naef, and Schmidt 2006). We thus also examine whether individuals attempt to directly change the unequal allocation itself into an equal allocation, given the opportunity to do so. In Chapter 4 we look at such change attempts when either a rule that formally demands a high level of contribution or one that formally demands a low level of contribution is in place.

A crucial factor for understanding whether and how individuals can change a rule is the fact that rules not only shape human interactions (North 1990) but are also produced or reproduced through these social interactions (Kosfeld, Okada, and Riedl 2009; Markussen, Putterman, and Tyran 2014; Ostrom 1990). We therefore examine how these social interactions can lead to individual rule change attempts. Moreover, individual behavior and team interactions are also guided and influenced by individual motives and social norms (Ostrom 2005). We therefore incorporate in our analyses both the individual motives and social norms which could promote (or hinder) contributions to a team collective as well as an equal allocation of benefits. In the next two sections we argue why these factors may also influence a rule change attempt. First, in Section 1.4 we discuss the role of individual motivations, and then in Section 1.5 we examine the social norms.

1.4. INDIVIDUAL MOTIVATIONS: SELF-INTEREST AND SOCIAL VALUES

Relevant for our research is the fact that individuals match their identity with the situation, in other words that they reflect on the relationship between the self and the external reality (Archer 2007). Their actions will be motivated by the answers to such questions as “who am I”, “what kind of situation is this”, and, most important, “how would I act in a situation like this” (March et al. 2000:6). We therefore assign an important role to individual values in rule change attempts.
That is because values are related to, and incorporated into, the self (Hitlin and Piliavin 2004), referring to people’s self-identities and self-perceptions (Kouzakova et al. 2012). It has furthermore been argued that individual values are “socially meaningful”, as they connect individuals with social structures (Hitlin and Pinkston 2013:320). In this thesis we will examine whether individual values influence individual rule change attempts.

It is also important to note that a rule change attempt, or a structural change in general, involves costs for the individual attempting the change (Samuelson 1993; Yamagishi 1986). When the rule change leads to more cooperation or an equal allocation of benefits, all team members involved will benefit from an actual change; in this sense, a rule change can be viewed as providing a collective good. To attempt a rule change is thus defined as providing a second-order public good, while the provision of the initial public good is made possible by the contributions to the team collective itself (Yamagishi 1986). We thus have to consider that individuals need to be willing to incur the costs of the change attempt (i.e., initiating a solution to the second-order dilemma); which if successful will lead to more cooperation and equality.

We therefore look at systematic differences between individuals in the weights they assign to self-interest, equality, and cooperation. Teams consist of individuals who have heterogeneous preferences for both cooperation and inequality; such preferences are represented by their social value orientations (Dijkstra 2013; McClintock 1972; Van Lange 1999). Social values influence a person’s behavior when there is outcome interdependence, for instance during team interactions (Liebrand et al. 1986). Individuals with a prosocial value orientation prefer the enhancement of joint outcomes and equality, while proself individuals prefer the enhancement of their own outcomes (Van Lange 1999). Research relates social values to cooperative behavior in contributing to a team collective and to reactions towards unequal allocation of benefits (Balliet, Parks, and Joireman 2009; Batson et al. 1995; Eek and Gärling 2008; Stouten, De Cremer, and Van Dijk 2005; Van Lange 1999). From this, it can be concluded that rules that regulate both the level of contribution and benefit allocation can be congruent or instead incongruent with an individual’s social value orientation.

First, a rule demanding a low level of contribution will conflict with the prosocial value orientation of cooperation and the enhancement of joint outcomes. It therefore seems logical to propose that attempts to change a rule that mandates a low level of contribution into one mandating a high level would more likely be initiated by prosocial team members compared to proself individuals. This is not only because the former value the enhancement of joint outcomes, but also because prosocials, more than proselfs, are willing to contribute to the team collective (i.e., solve the first-order dilemma)(Van Lange 1999). It can thus be
expected that they also are more willing to solve the second-order dilemma (i.e., the rule change). In Chapter 2 we examine whether this is the case.

When the allocation of benefits is unequal (i.e., leading to both low and high earning team members), a person’s social values become a less direct predictor for rule change attempts. This is because not every team member has the same level of interest in the team collective: low earners are less interested in providing it compared to high earners (Van Dijk et al. 1999). Consequently, the rules which regulate contributions towards the team collective can be congruent as well as incongruent with these interests. A rule that demands a low level of contribution will serve the material self-interest of the low earners, while a rule that demands a high level of contribution (thereby ensuring a larger team collective) will serve the material self-interests of the high earners. Those who earned more when a rule mandates a low level of contribution will receive even larger benefits under a rule that demands a high level of contribution (Barber and Simmering 2002). Hence, not every team member’s material self-interest is served equally by a rule change towards a higher level of contribution. Such a rule change would appeal more to a high earning team member compared to a low earning member. This would lead to the proposition that high earners more than low earners would attempt to change a rule that demands a low level of contributions towards a high level of contributions. They will gain most from solving this second-order dilemma.

Because both social values and material motives guide behavior, the question is whether the effect of one on a rule change attempt depends on the other. The above discussion makes clear that social values and material self-interest may sometimes lead to similar or instead opposing predictions regarding attempts to change a low level contribution rule when benefits are not allocated equally. For example, we stated above that a proself individual would not attempt a rule change towards a rule that demands a high level of contribution out of self-interest, while a high earner would initiate such an attempt out of the same considerations. Also, we proposed that a prosocial individual would attempt such a change based on the wish to enhance joint outcomes, while at the same time this would lead to a bigger gap in the allocation of benefits, which conflicts with the person’s desire for equality. In Chapter 3 we study how these interactions influence rule change attempts.

The same interaction can influence attempts to change a rule from an unequal allocation of benefits to an equal allocation. This is the topic of Chapter 4. Based on the discussion above, it seems straightforward to propose that prosocials would be more willing to attempt a change towards an equal allocation of benefits. A factor to consider, however, is that when benefits are not allocated equally, individuals can mitigate the effects of this unequal allocation by altering their contributions (Reuben and Riedl 2013). By contributing proportionally to their expected benefits from the team collective they can try to restore equity (Adams
1965; Cook and Hegtvedt 1983). Contributing proportionally entails that, within a team, there will be team members who contribute less than others because of their disadvantaged income position. The question is whether such unequal contributions influence attempts to change the unequal allocation of benefits itself.

In this thesis we thus propose and study first whether individuals will attempt to change a rule when there is a conflict between this rule and their individual social values and interests. Second, we investigate under what conditions a person's earnings from the allocation of benefits on the one hand and, on the other hand, social values are opposing or instead congruent motivators in such an attempt. To conclude, we have outlined in this section why individuals may be motivated to attempt a rule change. As we argued above, individual behavior and team interactions are also guided and influenced by social norms (Ostrom 2005). In the next section we discuss the relevant norms.

1.5. THE INTERACTION BETWEEN FORMAL RULES AND CONTRIBUTION NORMS

A study of economic, sociological, and psychological literature on norms reveals vast differences in the way scholars define a norm, differentiate types of norms, and model norms (Interis 2011) (see for instance: Cialdini, Reno, and Kallgren 1990; Coleman 1987; Elster 2009; Fehr and Gächter 2000; Thibaut and Kelley 1959; Voss 2001). In this thesis we define a norm as expected behavior in specific circumstances, which is both accepted and viewed as the appropriate form of behavior by members of the group, and regularly displayed by the individuals involved in this particular group. Furthermore, adherence to this behavior is enforced by sanctions or rewards by peers. In short, a social norm refers to ‘the expected behavior, specifying how one ought to behave’ (Interis 2011). Throughout this thesis we use ‘norm’ and ‘social norm’ interchangeably despite the different interpretations that scholars assign to each of these terms (Interis 2011).

Because of our focus on the rules which structure cooperation and the allocation of benefits, what is of interest to our study are the norms which guide behavior in these domains. That is because the formal rules and social norms act in tandem; norms structure interactions by prescribing the level of individual contributions towards a team collective next to the formal rules. The contribution norms and rules may either mutually reinforce each other or conflict with each other (Gërxhani 2004; Nee and Ingram 1998; Voigt and Kiwit 1998). For instance, a norm can prescribe a high level of contributions whereas the rule mandates a low level of contributions.
Also, a norm could prescribe that the level of contributions should depend on the division of allocations from the team collective, in other words, that it should be based on distributive justice concerns (Biel and Thøgersen 2007). This means that a norm may prescribe that team members contribute in proportion to their interest position, so that team members possessing “twice as much interest” in the team collective are expected to contribute twice as much (Van Dijk et al. 1999:112). If this is the case, an equitable cooperation contribution norm is present, where the appropriate behavior is to contribute proportional to the individually expected benefits from the team collective (Reuben and Riedl 2013). On the other hand, when the norm prescribes non-equitable contributions, low and high earners will be expected to contribute to the team collective regardless of the specific allocation of benefits (Martin and Sell 1986). To summarize, when the allocation of benefits is unequal, different norms could be in place: contribution norms could prescribe contributions which will lead to more equal outcomes, or they could prescribe equal contributions.

Research has considered the relation between norms and rules in the case of maintenance, reproduction, and their emergence (Nee and Ingram 1998; Ostrom 2005). We apply these insights to investigate the process of individual rule change attempts, where individual motivations are centrally incorporated. In the next section we integrate our thoughts up to this point, and present our propositions on how individual rule change attempts might take place.

1.6. BRINGING IT ALL TOGETHER: RULES, NORMS, AND INDIVIDUAL MOTIVES

We reasoned above that the rules which regulate the level of contribution and benefit allocation can be congruent as well as incongruent with an individual’s social value orientation and interests. We proposed that, when the rules demanding a low level of contribution and an unequal allocation of benefits conflict with these motivations, an individual rule change attempt is more likely. When we add the social norm into this proposition then there are two possibilities. First, the norm could align with those conflicting individual values and interests. This applies for instance when a rule demanding a low level of contribution (i.e., conflict with a prosocial value orientation) exists together with a norm prescribing a high level of contribution (i.e., in accordance with a prosocial value orientation). The rule and norm are decoupled, and Nee and Ingram (1998:35) argue that then the rules exist only de jure and the norms de facto. In this case, we propose there will be no need for a rule change from the individual’s point of view.
Second, the norm can correspond with the rule and thus conflict with individual values and interests. We propose that an individual may then attempt to defy the social norm. This is possible because of the nature of norms, as they are implicit and “offer considerable scope for skill, choice, interpretation and manipulation” (Elster 1989:100). Individuals can decide to not conform to the existing norm (Irwin and Simpson 2013; Van Kleef et al. 2011); for instance, prosocial individuals increase their contributions when a low contribution level is prescribed by the norm.4 By displaying dissent or deviant behavior, i.e., by not conforming to the norm, individuals thereby ‘propose’ an alternative descriptive norm (Knight and Ensminger 1998).

Team members may actually approve this deviant behavior when the alternative norm is in line with group goals (Teixeira, Demoulin, and Yzerbyt 2011) or is perceived as beneficial for others (Popa, Phillips, and Robertson 2014). If this happens, team members will not respond with negative actions to enforce the norm but will react positively to the deviant behavior. Moreover, individuals who become aware of alternative behaviors are more likely to change their behavior accordingly (Aronson, Wilson, and Akert 2010). As a consequence, a new norm may develop within the team. We propose that in this case a rule change attempt will be less likely because, again, the rule now exists only de jure and the new norm de facto (Nee and Ingram 1998:35).

Team members may, however, not approve this deviant behavior, for instance because it runs counter to their values and self-interest. The original norm will then be actively enforced through informal sanctioning (Bicchieri 2006; Coleman 1987; Elster 2009; Falk, Fehr, and Fischbacher 2005), making it unlikely that the norm will change. We propose that in this case the only option left to individuals who experience a conflict would be to directly attempt to change the rule.

1.7. FROM A RULE CHANGE ATTEMPT TO AN ACTUAL RULE CHANGE

Lastly, we investigate the likelihood of an actual change of both the rules of contribution and rules of income allocation after these individual attempts. Individuals can interpret, debate, and contest existing rules (March et al. 2000).

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4 The literature on social influence has an abundance of research which documents the willingness of individuals to conform to norms (Latane 1981; Sherif 1936; Turner 1991). Be that as it may, most if not all studies on conformity also have a substantial number of participants who do not conform to the norm (Packer 2008). In the original Asch ‘conformity’ studies (Asch 1951; 1955; 1956) for instance, “the modal response across all trials was nonconformity (see Hodges and Geyer 2006)” (Packer 2008:51). Ironically, the Asch studies - the most frequently cited research on conformity - were originally intended as a study of the independence of individuals.
Moreover, research shows that a person’s ability to communicate enhances the ability of groups to overcome issues of cooperation (Ostrom 2005:87). We therefore investigate in Chapter 2 whether the ability to communicate (or lack of such ability) influences the likelihood of an actual rule change from one that mandates a low level of contribution into one that demands a high level of contribution.

Furthermore, the decision-making structure regulates the degree to which team members participate in the decision-making process. Studies on redistributive policy choices inform us for instance that the type of decision-making structure determines the chance of successful implementation of income equality policies (Scharpf 1989). We therefore examine in Chapter 4 the effect of the decision-making structure with respect to voting on an actual change of the unequal allocation of benefits.

1.8. Empirical Approach

1.8.1. Public Goods Games, contribution rules, and an unequal allocation of benefits

In three empirical chapters (Chapters 2, 3, and 4) we test our predictions by designing closely related laboratory experiments. We collected data in three experiments, in all of which two consecutive public goods games were applied (PGG1 and PGG2) (Fehr and Gächter 1999). Because the team collective within an organization can be viewed as a public good to which team members may or may not contribute (Croson 1995), the choice of a PGG as our experimental paradigm seems warranted. Each PGG consisted of ten rounds, during which participants were randomly and anonymously assigned to a team consisting of five members. In both PGGs, the participants were in the same team in each experiment. We thus created repeated interactions with the same group in order to mirror a team’s interaction.

Commonly, in a general PGG or ‘give-some’ dilemma, participants form teams \((n > 2)\), and during several rounds each team member receives an equal endowment of points, i.e., \(e_i\). In each round, individual team members decide how many points, i.e., \(c_i\), they will contribute to a team project, and how many points they will keep to themselves, i.e., \(e_i - c_i\). The points contributed to the team project are multiplied by a factor \(m > 0\) and shared equally among all team members. Individual contributions to the team project thus generate a collective benefit to the other group members. Individual earnings are defined as:
where $m$ is the marginal per capita return (MPCR), i.e., the marginal return for each team member of one point contributed to the team project by any team member (Andreoni 1995; Croson 1995; Isaac, Walker, and Thomas 1984; Ledyard 1995; Marwell and Ames 1979). When the MPCR has a certain value (depending on the size of the team, i.e., $n$)\(^5\), the PGG represents a social dilemma, where it is socially optimal to contribute, yet not payoff-maximizing to do so (Vesterlund 2016).

In our design we applied this classical set-up, with the specifics that each PGG consisted of ten rounds, and that every team member ($n = 5$) received an equal endowment of $e_i = 10$ points each round. Team members decided simultaneously how many of those points they would contribute to the team collective (i.e., team project), and how many points they would keep for themselves. Each round thus started with a contribution stage where team members decided on their contribution i.e., $c_i$. In the next stage of each round, the aggregate contributions of all five team members were communicated to the team members. Next, the aggregate contributions were multiplied by a factor $m$ (detailed below), with $1/n < m < 1$, and equally divided among all team members.

Our main first variation constituted the contribution stage: in all three experiments we presented a formal rule for the mandatory minimum contribution to the team collective in each round of PGG1. We varied this rule between teams of subjects as either a rule mandating a low level of contribution or a rule that demands a high level of contribution. These rules were strictly enforced so that individuals were unable to contribute less than the rule for their team called for. This variation is one of our experimental treatments, namely the Contribution rule. The two rules were: (i) Rule 2, where $c_i \in [2,e]$ each round; and (ii) Rule 8, where $c_i \in [8,e]$ each round. By allowing considerable freedom in contributions in Rule 2 and limited freedom in Rule 8, we do justice to the fact that in organizational environments the formalized control (Sewell 1998) is either at least somewhat present (Rule 2) or not omnipresent (Rule 8).

Our second main variation is the marginal per capital return (MPCR) where we created equal as well as low and high earners among the participants within each team. By implementing a different MPCR, different personal benefits from a public good were created. In experiment 1 (Chapter 2), $m = 0.4$, and each team member received an equal share. In experiments 2 and 3 (Chapters 3 and 4), $m$ was varied, resulting in two types of earners within the team: for low earners

\[ e_i - c_i + m \sum_{j=1}^{n} c_j \]
\( m = 0.3 \); for high earners \( m = 0.5 \) \((n = \text{low + high})\). We thus created an unequal allocation of benefits from the team collective, constituting our treatment *Unequal allocation of benefits*.

### 1.8.2. An attempt to change the rule

In all three experiments, all team members were presented directly after PGG1 with the option to call for a vote to change the existing rule before a second public goods game (PGG2) would start. This call to vote is our main dependent variable *rule change attempt*. In experiments 1 and 2 (Chapters 2 and 3), individuals could attempt to change the *Contribution rule*, i.e., replace Rule 2 with Rule 8 or vice versa depending on the treatment. Remember that in our analyses we focus on change attempts which promote cooperation, as argued earlier. In experiment 3 (Chapter 4), individuals could initiate a change of the *Unequal allocation of benefits* to an equal one. The latter would imply that the MPCR for low earners and high earners would change from \( m = 0.3 \) and \( m = 0.5 \), respectively, to \( m = 0.4 \) for all team members. This new MPCR would then be implemented for this team in the second public goods game (PGG2). In Figure 1.1 we present the implemented rules per experiment; the rules which the call to vote could change are depicted in gray.

In all three experiments team members could initiate a call to vote at a cost. We introduced this cost to account for the fact that an attempt to change a rule in an actual organizational environment could encounter tangible sanctions from management (Morrison 2006). If no one called for a vote in experiments 1 and 2, the minimum contribution rule that was in place during PGG1 would also apply to PGG2. If no one called for a vote in experiment 3, the unequal MPCR would continue to hold in PGG2.

### Figure 1.1. Implemented rules per experiment

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<tr>
<th>Call to vote</th>
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<th>Experiment 2</th>
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### 1.8.3. The actual change of the rule

After the call to vote (i.e., the rule change attempt) following PGG1, teams continued with a voting procedure. During this procedure all members of teams where at least one call to vote was made voted either in favor of or against a rule change. This procedure was implemented to account for the fact that in real life, if someone openly expresses a wish to change, team members can respond either in favor or against. In experiments 1 and 2 (Chapters 2 and 3), they voted in favor of
or against the change of the existing Contribution rule. In experiment 3 (Chapter 4), team members voted in favor of or against the change of the existing Unequal allocation of benefits. Hence, an actual rule change reflects the switch from the rule implemented by the experimenters in PGG1 to the new rule in PGG2.

We examined whether the ability to communicate (or not) increases the likelihood of an actual rule change from one that mandates a low level of contribution to a rule that demands a high level of contribution (Chapter 2). Therefore, in experiment 1, we randomly assigned teams to a Communication treatment (yes/no). After the call to vote, but before the voting procedure, team members had the possibility to communicate (or not) depending on the treatment. Team members communicated through a chat box for ninety seconds, where all communication was visible to all members. In line with earlier research, the following vote was made anonymously (Biel and Thøgersen 2007).

We furthermore examined the effect of the decision-making structure with respect to voting on an actual change of the unequal allocation of benefits in Chapter 4. While in experiments 1 and 2 the rule change was possible only if the majority of the team members voted in favor, in experiment 3 we varied the Decision-making structure. As in experiments 1 and 2, we implemented a majority-voting structure, where three out of five votes in favor were needed for a rule change. We also implemented a dictator-voting structure, where a randomly assigned team member was selected as the sole decision maker. Teams of participants were randomly assigned to this treatment. Figure 1.2 elaborates on Figure 1.1 by showing for each experiment the structures implemented for the vote.

**Figure 1.2. Implemented rules per experiment, including the possibility to communicate and the decision-making structure for the voting procedure**

<table>
<thead>
<tr>
<th>Call to vote</th>
<th>Experiment 1</th>
<th>Experiment 2</th>
<th>Experiment 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contribution rule</td>
<td>Contribution rule</td>
<td>Contribution rule</td>
</tr>
<tr>
<td>Equal allocation of</td>
<td>Equal allocation of benefits</td>
<td>Unequal allocation of benefits</td>
<td>Unequal allocation of benefits</td>
</tr>
<tr>
<td>benefits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vote</td>
<td>Communication yes/no</td>
<td>No communication</td>
<td>No communication</td>
</tr>
<tr>
<td></td>
<td>Majority voting</td>
<td>Majority voting</td>
<td>Majority voting/Dictator decision</td>
</tr>
</tbody>
</table>

**1.8.4. Measures**

**1.8.4.1. Contribution norm**
Before each PGG1 we measured the norm that prescribes individual contributions applicable to such a public goods game, using a method adapted from Krupka
and Weber (2013) (for full details see the empirical chapters). Furthermore, we communicated this norm to the participants before the start of PGG1. As such, contrary to the method commonly used in economic experimental literature, we do not indirectly derive the norm from participants’ behavior during interactions (Schram and Charness 2015). This reason for this is that such behavior could be the result of self-enforcing conventions arising from the coordination aspect of a public goods game (Voigt and Kiwit 1998). Our measure captures a person’s perception of which behavior is appropriate in that specific situation, or ‘the expected behavior, specifying how one ought to behave’ (Interis 2011). In addition, by communicating the norm, we ensured that it was shared knowledge and that the individuals involved believe it exists and know the specific situation to which the norm pertains.

1.8.4.2. Defying the norm
We argued earlier that individuals who do not conform to the norm might be proposing an alternative descriptive norm (Knight and Ensminger 1998). In this thesis we look at proposals for an alternative norm which are in line with the nature of the rule change attempt. We tried to capture this in experiment 1 by considering the contributions in the first round of PGG1 that deviate from the norm in an upward direction. We look at deviations in an upward direction because the rule change under investigation is from a low to a high level of contributions. Because these first-round contributions in PGG1 may signal to the team members whether an individual conforms to the norm, which was already known to all, we believe they are a good proxy of individual attempts to change the norm. Only aggregate group contributions were made known at the end of each round, but the aggregate provides a strong signal of the extent of norm compliance in the group. Furthermore, we examine whether the norm change attempt is successful by considering the contributions in all rounds of PGG1.

Experiment 3 investigates a change from an equal to an unequal allocation of benefits. Applying the same logic as in experiment 1, we consider the contributions in all rounds of PGG1 and examine whether there is a significant difference in contributions by low and high earners respectively. We thus examine whether the contributions are proportional to the expected benefits from the team.

1.8.4.3. Social value orientation
* A priori* categorizations of the social value orientation of individuals serve as predictors of meaningful behavioral differences (Balliet et al. 2009; Simpson and Willer 2008). The most common method to assess an individual’s social value orientation is through a decomposed game (Balliet et al. 2009; Eek and Gärling 2008; Messick and McClintock 1968) which has ecological validity (Bem and Lord
1979). In all three experiments we assessed participants’ social value orientations using such a decomposed game, namely the Triple Dominance Measure (TDM) (Van Lange et al. 1997).

This measure consists of nine items, each containing three distinct outcome distributions with points for oneself and an anonymous paired other person. Each outcome distribution represents a particular social value orientation. Consider for example the first outcome distribution, the choice between alternatives A, B, and C in Figure 1.3.

Figure 1.3. First item triple-dominance measure

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>You get</td>
<td>480</td>
<td>540</td>
<td>480</td>
</tr>
<tr>
<td>The other gets</td>
<td>80</td>
<td>280</td>
<td>480</td>
</tr>
</tbody>
</table>

Option A represents the competitive orientation, i.e., maximizing the difference between own outcomes and the other's outcomes. Option B represents the self-interested orientation, i.e., maximizing own outcomes, and option C represents the prosocial orientation, i.e., equal distribution of outcomes (Van den Bergh, Dewitte, and De Cremer 2006). The TDM categorizes individuals to one of these three categories – competitive, self-interested, or prosocial – if at least six out of nine choices can be consistently attributed to one of these motives; otherwise they are not categorized.

Both self-interested and competitive participants seek to enhance their own outcomes, either in an absolute sense (self-interested) or in a relative or comparative sense (competitive) (Van Lange et al. 1997). Thus, in line with earlier research (Eek and Gärling 2008), we combined the self-interested and competitive categories into a single category, which we call the ‘proselfs’. Furthermore, we identified and categorized participants in the uncategorized group as proself if they had made at least six choices that were consistent with either self-interested or competitive motivations (thus making six consistent choices for the combined category). In Chapters 2, 3, and 4, a detailed description of this measure is provided.

1.8.4.4. Willingness to take risks

An individual’s willingness to take risks may positively influence the likelihood of organizational rule breaking (Morrison 2006). In order to control for this in our analyses, we assessed the participants’ general willingness to take risks (Dohmen et al. 2011) in all three experiments. We furthermore incorporated the participants’ age and gender as control variables in our analyses.
1.8.4.5. Other measures
In all three experiments we assessed the participants’ experience of several emotions before (t1) and after (t2) PGG1 using self-reports. Self-reports are the most common way to do this and “potentially the best way to measure a person’s emotional experience” (Robinson and Clore 2002, 934). Because individuals can experience a number of different emotions (De Hooge, Zeelenberg, and Breugelmans 2007), we asked them how much guilt, regret, anger, shame, and gratitude they experienced. The study of the experience of emotions during interactions has been planned with a view to future research.

1.9. OVERVIEW OF THE REMAINING CHAPTERS

Chapters 2 through 4 each address specific research questions which relate to individual attempts to change a formal rule. These chapters are written as separate empirical studies, leading to some overlap in theory and experimental design. Below we provide an overview of the questions that we aim to answer in each chapter, complemented by the specific experimental design for that chapter.

Chapter 2 starts with our investigation of the general premise underlying our propositions about individual rule change attempts: are they initiated by individuals who experience a conflict between their social value and the rule? We furthermore examine whether a rule change attempt is preceded by a norm change attempt. Lastly, we investigate whether an actual rule change is facilitated by the possibility to communicate. We used a 2 x 2 between subject design (Rule/Communication). In the first treatment Contribution rule we varied the formal rule that specifies the mandatory contribution level in PGG1. The second treatment Communication varied, depending on whether or not communication with other group members was allowed.

Chapter 3 builds on Chapter 2, focusing on the rule change attempt from a low to a high level of contribution, but now under different conditions. While in Chapter 2 the benefits of contribution were equally allocated among the members, in Chapter 3 individuals receive unequal benefits from the team collective, leading to high earners and low earners within the team. We hypothesize that a rule change attempt might be driven by the material interest in the provision of the team collective, and investigate the extent to which individual social values moderate such an attempt. The experiment had a 2 x 2 between subjects design. Again, the first experimental treatment was the Contribution rule that specifies the mandatory contribution level in PGG1. We furthermore implemented inequality of earnings by introducing heterogeneous payoffs within each team of participants. This variation is the second experimental treatment Unequal allocation of benefits.
In Chapter 4 we shift our focus from the contribution rule to the allocation of benefits. We examine whether an attempt to change an unequal allocation into an equal allocation is instigated by individuals who value equality, and whether the individual interest in the provision of the team collective, i.e., being a high or low earner, plays a role. We consider the influence of rules and norms of contribution by studying individual attempts to change an unequal allocation, both in an environment where a rule mandates a low level of contribution and in one where it demands a high level of contribution. We hypothesize that when individual team members are limited to contribute proportionally, i.e., are unable to contribute in proportion to their expected benefits from the team collective, an attempt to change the unequal allocation is more likely. Additionally, we investigate the chances of an actual change from inequality to equality of benefits by varying the decision-making structures on voting across these environments. We used a 2 x 2 x 2 between subject design. The earlier mentioned treatments Contribution rule and Unequal allocation of benefits were accompanied by a third treatment Decision-making structure. This treatment varied the voting procedure between either a majority decision-making structure or a dictator decision-making structure.

Lastly, in Chapter 5 we reflect on how social interactions and individual motivations lead to individual rule change attempts. We summarize our findings of the empirical chapters, elaborate on our results, and provide directions for future research. To paraphrase Elinor Ostrom (2005:132), we examine whether rules are indeed the tools that “fallible humans can use to try to change situations to achieve better outcomes”.