Summary

Several pressing problems in modern society result from too many people acting in their private interest rather than in the common interest. Topical examples of the undesired consequences of self-interested behavior are over-production, traffic congestion, and environmental pollution. The benefits of maximizing one's production rates, travelling by private car, and dumping toxic waste products accrue to the individual actor, while the costs of such behavior (price declines, time delays in travelling, and environmental deterioration) are spread out over the whole society. Such arrangements of costs and benefits confront groups of interdependent people with a so called social dilemma (Dawes, 1980): for any individual it may be more profitable to act in one's private interest than in the common interest; however, all individuals are worse off if all act in their private interest rather than in the common interest.

The present dissertation reports five empirical studies on group members' behavior in experimental social dilemma games. These studies focus on some of the many social psychological issues that come up from social dilemmas. In Chapter One the focal issues are introduced.

First, social dilemmas face groups with two related problems: when too many people act in their private interest, the group falls short in the achievement of desired common goals (low group efficiency in realizing common interests); furthermore, a skew distribution of costs and benefits will arise: those who exert themselves to serve the common interest attain lower outcomes than the ones who refrain from contributing to the common interest (an unfair distribution of outcomes).

The second issue concerns the alternative approaches groups may follow to avoid these problems. Groups may vary the extent to which their members are free to decide whether or not to contribute to the common interest: in some situations group members' DECISIONAL FREEDOM is UNRESTRICTED, while in other situations group members' DECISIONAL FREEDOM is MORE OR LESS RESTRICTED by superordinate regulatory agencies.

These two issues, i.e. the extent to which group members' decisional freedom is restricted, and the dual task of promoting group efficiency in realizing common goals and fairness in the distribution of outcomes, constitute an analytical framework for the studies reported in the subsequent chapters. This framework is depicted below.
Framework of the reported studies:

<table>
<thead>
<tr>
<th>dual task</th>
<th>research focus on:</th>
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<td>group efficiency/ distribution of outcomes</td>
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not restricted Study 1
restriced Study 2

The first two studies address the question how people deal with social dilemmas under conditions of UNRESTRICTED DECISIONAL FREEDOM; group members' voluntary contributions to the common interest constitute the main dependent variable.

Chapter Two reports Study 1, which primarily focuses on group efficiency. A first aim of Study 1 is to assess the achieved level of group efficiency as a function of the objective interdependence structure. As predicted on the base of Game Theory, the results show that the common interest is better served in the Trust Dilemma and the Chicken Dilemma than in the Prisoner's Dilemma. The second and major aim of Study 1 is to test a prediction derived from Social Identity Theory (Tajfel & Turner, 1986; Turner, 1987), that the common interest will be better served when the people involved perceive themselves as members of a group sharing a common fate than when they perceive themselves as single individuals. The results offer strong support for our prediction and sustain a social identification interpretation.

Chapter Three reports Study 2, which primarily focuses on the distribution of outcomes among the group members. With very few exceptions, research on dilemmas, in which the same outcomes, however, group members costs and relative interest. Study 2 en game, in which we the realization of the theoretical prediction the larger a group member's profit, they tend to contribute and the interest.

Earlier research on when group members efficiency and about change the decisional freedom who makes decisions RESTRICTS their DE by sanctions considerably restricted Study 4 Study 3
by leadership
decisional freedom somewhat restricted Study 5

Chapter Four reports responses to the distribution outcomes a leader subordinate subject, as Theory (Adams, 1965) equal distribution of most fair and leads fairness may be drive favorably treated group both types of group endorsement than the being favorably treated such a comfortable position is not affected by outcome group member.

Study 4, reported responses to a leader.

In addition, we vary
exceptions, research on social dilemmas focuses on symmetric social dilemmas, in which mutual contributions by the group members yield them the same outcomes, i.e. the same costs and the same benefits. In real life, however, group members often differ from each other as for their relative costs and relative benefits associated with contributing to the common interest. Study 2 explores a newly developed asymmetric social dilemma game, in which we vary a subject's resources and a subject's profit from the realization of the common interest. In accordance with our Equity theoretical prediction, it appears that group members strive for fairness: the larger a group member's amount of resources and the larger a group member's profit, the more this group member feels designated to contribute and the more he or she actually contributes to the common interest.

Earlier research on social dilemmas (Rutte & Wilke, 1984) suggests that when group members become dissatisfied with the achieved level of group efficiency and about the distribution of outcomes, they may choose to change the decisional structure. A mutual agreement to appoint a leader who makes decisions on behalf of all of them, CONSIDERABLY RESTRICTS their DECISIONAL FREEDOM. The leader's dual task then, is to promote group efficiency and fairness in the distribution of outcomes. The next two studies examine regular group members' endorsement of the leader as a function of the leader's task fulfilment.

Chapter Four reports Study 3, which assesses regular group members' responses to the distribution of outcomes by the leader. We vary the outcomes a leader purportedly allocates to him or herself, to the subordinate subject, and to a fellow subordinate. As predicted by Equity Theory (Adams, 1965; Messick & Cook, 1983), the results show that an equal distribution of outcomes among the three persons is considered most fair and leads to the most strong leader endorsement. However, fairness may be driven out by greed. This appears from the fact that favorably treated group members respond as if they are equitably treated; both types of group members provide the leader with stronger endorsement than the aggrieved ones. Furthermore, the results show that being favorably treated in comparison with one other group member is such a comfortable position that this group member's leader endorsement is not affected by outcome differences between him or herself and a third group member.

Study 4, reported in Chapter Five, assesses regular group members' responses to a leader's success or failure in promoting group efficiency. In addition, we vary the predictability of the environment in which the
leader has to take decisions. We expect stronger endorsement of successful leaders than of failing ones. Furthermore, based on the Attributional approach of leadership (Calder, 1977; Pfeffer, 1977) we expect weaker endorsement of successful leaders in a totally unpredictable environment than in a predictable environment, and less rejection of failing leaders in a totally unpredictable than in a predictable environment. In accordance with our hypotheses, the results show that successful leaders receive stronger endorsement than failing ones. Furthermore, a leader's success in promoting group efficiency elicits weaker leader endorsement in an unpredictable environment than in a predictable environment. However, contrary to our hypothesis, a leader's failure elicits similar leader rejection in an unpredictable as in a predictable environment. Although our hypotheses were only partly confirmed, additional data sustain the attributional interpretation.

In the final study, which is reported in Chapter Six, group members' DECISIONAL FREEDOM is RESTRICTED ONLY TO SOME DEGREE by superimposed sanctions. As such, Study 5 takes an intermediate position between unrestricted decisional freedom (Study 1 and Study 2) and leadership (Study 3 and Study 4). For yet another reason the final study occupies an intermediate position in the framework: rather than focusing on the level of group efficiency (Study 1 and Study 4) or on the distribution of outcomes (Study 2 and Study 3) exclusively, we now address their interconnection. We study the level of group efficiency as a function of the distribution of outcomes: punishments reduce the outcomes of the non-contributing group members, while rewards raise the outcomes of the contributing ones. Study 5 assesses the relative effectiveness of the mere presentation of punishments and rewards to promote contributions to the common interest in pay-off equivalent games. Furthermore, Study 5 compares the responses of samples of different subject populations to sanctions being supplied by different regulatory agencies. Employing a simulation game of environmental pollution by chemical industries, four experiments are conducted: in two experiments students serve as the subjects, and the sanctions are presented as being supplied either by the government (Experiment 5a) or by the parent company (Experiment 5d). In the other two experiments members of the Dutch Junior Chamber - predominantly industrial managers and their spouses - serve as the subjects; again the sanctions are presented as being supplied by the government (Experiment 5b) or by the parent company (Experiment 5c).

The results show that pay-off equivalent games do not necessarily...
yield equivalent levels of group efficiency. In the student population the mere presentation of punishments and rewards proves equally effective in promoting group efficiency, regardless of the supplying agency. In contrast, behavior of the Junior Chamber members is not affected by the presentation of punishments, and is differentially affected by the presentation of rewards: whereas rewards supplied by the government arouse reactance (particularly in the male Junior Chamber members) and result in low group efficiency, rewards supplied by the parent company effectively promote group efficiency.

In Chapter Seven the results and conclusions of these five studies are discussed in a somewhat broader perspective. The present research demonstrates that when group members are left completely free to decide whether or not to contribute to the common interest there may exist a normative consensus that exerting oneself to serve the group interest is the right thing to do. However, it appears that individual group members may be tempted to ease up; the stronger the objective or subjectively perceived conflict between private interests and group interests, the lower their contribution to the group interest. Structural solutions, which more or less restrict group members' decisional freedom, face groups with higher-order problems, however. The leadership solution is problematic for at least two reasons. First, successful leadership does not only involve promoting the level of group efficiency, but also reinforcing the desired process of causal attribution in the constituency. Second, the endorsement of the leader by favorably treated group members may lead to corruption of a leader's authority. Solutions which are less restrictive in nature, such as punishments and rewards, may also yield undesired consequences; interventions which may have been proven effective within an academic laboratory setting may even yield counter productive effects when implemented on other people in other situations. This underlines the necessity of further research on fundamental social psychological processes in groups dealing with social dilemmas. Furthermore, it stresses that it is preferable for social dilemma researchers to explore the extent to which their findings can be generalized to people and situations outside the laboratory: an analysis of the strong and weak points of the experimental gaming approach stimulates hypothesis building and the development of relevant research tasks.